School of Occupational Therapy, Social Work and Speech Pathology
Child and Adolescent Health Service

The Development and Evaluation of a Therapeutic Playgroup for Children with Developmental Delay

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

The research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council National Statement on Ethical Conduct in Human Research (2007) updated in 2018. The proposed research study received human research ethics approval from the Perth Children's Hospital Human Research Ethics Committee (2015181EP) and Curtin University Human Research Ethics Committee (HR228/2015).

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Abstract

Growing populations and high rates of developmental delay has increased the demand for early intervention services. Given the well documented importance of intervening early to capitalise on neural plasticity and development, services are investigating alternative models to ensure they are positioned to meet this growing demand. At the Child Development Service (CDS) of Perth, Western Australia, playgroups were suggested by consumers and staff as a potential service model that could effectively meet the informational and social needs of children and families when first referred. However, despite the wide implementation of playgroups across the Australian community and the increasing recognition of playgroups as an effective ‘soft entry’ point for families accessing early intervention services there is limited empirical research that has established a playgroup definition, practice principles, effectiveness and implementation.

Adopting a knowledge translation approach and conducted in partnership with the CDS, this doctorate explored the development and effectiveness of a therapeutic playgroup compared to standard care for children with developmental delay and their families when first referred to an early intervention service. The Knowledge to Action (KTA) framework and the Medical Research Council (MRC) framework for the development and evaluation of complex interventions were used in conjunction to guide this eight-chapter thesis. The combination of these frameworks facilitated the systematic and rigorous development and evaluation of the Learn, Engage and Play (LEaP) playgroup for children with developmental delays whilst simultaneously ensuring research was relevant and tailored to the context of the CDS.

This doctorate comprises a series of papers and chapters. The first chapter introduces the thesis topic and provides a chapter synopsis. Chapters two, three and four synthesise playgroup knowledge to identify key playgroup principles from the literature, professionals and caregivers adding to the knowledge creation around playgroups. A scoping review of playgroup literature is conducted in Chapter two (Paper I) with the aim of identifying the key components of effective and engaging playgroups against a motivation framework. Chapters three (Paper II) and four (Paper III) build on these findings, identifying the ‘active ingredients’ of playgroups by

consulting with professionals with experience facilitating playgroups (n=40); and caregivers with experience attending a supported or therapeutic playgroup (n=23). These findings are triangulated in Chapter five (Paper IV) to create new knowledge on the overarching theoretical framework and practice principles of therapeutic playgroups. Findings confirmed playgroups are a complex intervention that require an interplay of facilitator, structural and participant characteristics to be effective and are underpinned by family-centred practice, peer support theory, natural learning theory, and self-efficacy theory.

Chapter five (Paper IV) documents the three-step process of LEaP playgroup manual development and feasibility testing. Step one, the LEaP manual was designed to meet CDS referral demands and developed in conjunction with a working group of CDS consumers and professionals (n=12). It targeted children aged 18 months to 36 months presenting with significant delays in communication and at least one other developmental domain. Key messages and content of this eight-week playgroup focused on parent-child attachment, parent responsiveness, and language facilitation strategies. Step two, LEaP feasibility was examined using a pre-test post-test design (n=8) with qualitative results indicating LEaP was acceptable to parents and facilitators. Although only minor changes were recorded on the primary outcome measure (Parenting Stress Index- Short Form), LEaP participants showed improvement in child goal achievement and family support. Feasibility findings then informed step three manual revisions, finalising the manual for larger scale efficacy testing.

Chapters six and seven outlines LEaP efficacy testing, conducting a single-blind two-armed randomised control trial (Paper V) to evaluate the effectiveness of LEaP compared to standard care (n=71) and a process evaluation (Paper VI) to examine LEaP implementation and perceived effectiveness (n=34). The randomised control trial demonstrated LEaP showed significant within group changes on the primary outcome measure but not between group changes. However, on secondary measures, LEaP produced significantly better outcomes in child goal achievement and family support compared with standard care. The process evaluation showed LEaP was implemented as intended and was perceived to improve parent knowledge, parent-child interaction, family support and child development, indicating LEaP was effective in meeting child and parental needs when first referred to the CDS.

The final chapter of the thesis (Chapter 8) synthesises findings and discusses the study significance and considerations for future LEaP implementation using the KTA framework.

This consumer driven study serves as an example of how academic institutions and health service providers can partner to address stakeholder identified needs and develop evidence-based interventions that have the potential to be translated into practice. In a research environment characterised by inconsistent playgroup definitions and models, this is the first study to systematically develop and evaluate a therapeutic playgroup for children with developmental delay and their families. Results demonstrated LEaP is a promising intervention. While ongoing evaluation is recommended, LEaP appeared to benefit children, families and the early intervention service. This study has contributed to the knowledge creation and knowledge action cycle of playgroups, establishing the statistical, clinical and personal significance of therapeutic playgroup effectiveness for children and families. Considering the wide implementation of playgroups, it is anticipated this developing evidence base will be of interest to early intervention and community service providers. It is also expected that the systematic framework used to develop and evaluate the LEaP therapeutic playgroup can be adopted for other clinical cohorts or cultural groups. This doctorate has added new knowledge at both the level of knowledge creation and knowledge action in the complex intervention of therapeutic playgroups for children with developmental delay.

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List of Abbreviations

AEDC	Australian Early Development Census
APA	Australian Postgraduate Award
ASD	Autism Spectrum Disorder
ASQ-3	Ages and Stages Questionnaire
CACH	Child and Adolescent Community Health
CALD	Culturally and Linguistically Diverse
CDI	MacArthur-Bates Communicative Developmental Inventories
CDS	Child Development Service
CI	Confidence Intervals
CoLab	Collaborate for Kids
COPM	Canadian Occupational Performance Measure
CPC	Child and Parent Centre
ECIA	Early Childhood Intervention Australia
EI	Early Intervention
FSS	Family Support Scale
GAS	Goal Attainment Scale
GDD	Global Developmental Delay
IPA	Interpretive Phenomenological Analysis
ITT	Intention to Treat
KTA	Knowledge to Action
LEaP	Learn, Engage and Play
MSEL	Mullen's Scale of Early Learning
MRC	Medical Research Council
MRC-DECI	Medical Research Council Framework for Developing and Evaluating Complex Interventions
NDIS	National Disability Insurance Scheme
NIH	National Institute of Health
PCH	Perth Children's Hospital
PSI-4 SF	Parenting Stress Index- Short Form (Version 4)
RCT	Randomised Control Trial
SD	Standard Deviation

SDT	Self-Determination Theory
SEIFA	Socio-Economic Indexes for Areas
SF-12	The Medical Outcome Study Short Form Health Survey
SPSS	Statistical Package for the Social Science
STATA	Software for Statistical and Data Science
TAU	Treatment as Usual
TOES	Test of Environmental Supportiveness
WA	Weighted Average
WAHTN	Western Australian Health Translation Network

Publications

Peer Review Publications

Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22. doi:10.1080/11038128.2018.1498919

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The nature and extent of intellectual input by the candidate and co-authors has been validated by all authors:

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Chapter 1 Introduction

1.1 Background

This thesis explored the effectiveness of a therapeutic playgroup for children with developmental delay and their families when first referred to an early intervention service. Playgroups are used throughout Australia encompassing informal weekly community-based groups attended by parents and their preschool age child to play, promote development and connect with community.[1-3] There are numerous playgroup models, and this thesis sought to define and develop a therapeutic playgroup model rather than a community or supported playgroup model. Owing to inconsistent playgroup definitions and models,[4] this study chose to focus on a playgroup model to be implemented within early intervention services with specific therapeutic strategies for children with developmental delay.

This project was initiated by and conducted in collaboration with the Child Development Service (CDS), a publicly funded early intervention service located in Perth, Western Australia. The concept of providing a therapeutic playgroup as a waiting list strategy was suggested by consumers and staff, with the established therapeutic playgroup model developed to meet the service needs of this early intervention provider.[5] The generalisability of thesis findings to other services or clinical cohorts requires further examination.

Developmental delay refers to a significant variation in a child's expected developmental trajectory, this is a clinical description rather than a diagnosis.[6] Developmental disability defines a heterogeneous group of disabilities characterised by social, academic, personal or occupational function impairment with the onset in the paediatric developmental period.[7] The first three papers in this thesis included children with developmental delay and disability and use the term 'children with developmental delay and/or disability.' These papers collectively identified key components of therapeutic playgroups from the literature, and from the perspectives of consumers and early intervention professionals, with findings applicable to both children with developmental delay and disability. The focus then narrowed in the fourth paper, developing a therapeutic playgroup targeted to children with developmental delay and their parents. This was driven by the needs of the CDS resulting in the playgroup targeting children aged 18 months to 36 months presenting with significant delays in communication and in at least one more developmental domain. The final four papers consequently use the term ‘children with developmental delay.’

The thesis methodology is underpinned by two contemporary frameworks, the Knowledge to Action Framework (KTA)[8] and the Medical Research Councils’ framework for developing and evaluating complex interventions (MRC-DECI).[9] Integrating these frameworks accelerates research translation, providing a method to partner with knowledge end-users in the systematic and rigorous development, implementation, evaluation and sustainability of complex interventions.[10] Previous studies have applied these two frameworks in the development of a national knowledge translation training initiative[11] and a clinical decision-making tool.[10] In this thesis the combination of frameworks guides the systematic development and evaluation of the Learn, Engage and Play (LEaP) therapeutic playgroup whilst providing an overarching plan to tailor and translate findings to the CDS.

Despite the significant allocation of funding and resources to health, research findings generally take on average 17 years to translate into practice.[12,13] This can have detrimental effects on health consumers leading to the continued use of ineffective or harmful interventions whilst preventing consumers accessing effective and evidence-based interventions.[8] Knowledge translation aims to reduce this ‘research to practice’ gap, focusing on strategies to increase the transfer, awareness and implementation of evidence-based practice.[14] Instead of ‘letting’ translation happen, it focuses on ‘making’ it happen.[15]

The KTA framework[8] synthesises key elements from over 30 planned action theories to conceptualise fundamental components of the KTA process and support the translation of evidence-based and sustainable interventions.[8] It is widely used in the development and implementation of health care interventions,[16] and was chosen for this consumer and service driven study given the desire to increase knowledge relevance, implementation and routine uptake of the playgroup model if shown to be effective. The use of this framework increased the clinical relevance of thesis findings and facilitated the development of knowledge partnership with CDS managers, clinicians and families to accelerate research translation and tailor implementation strategies. The final step of this framework, ‘sustain knowledge use’ was beyond the scope of this thesis but recommendations on how to sustain knowledge use of the developed LEaP playgroup are outlined in Chapter 8.

The MRC-DECI framework[9] was used in conjunction with the KTA framework[8] to guide the systematic development and evaluation of the LEaP therapeutic playgroup. This framework overcomes common challenges in designing, implementing and evaluating complex interventions, strengthening the ability to generalise research findings and translate interventions into clinical practice.[10,17] Given the complex nature of playgroups and the inconsistencies in playgroup definitions and practice principles,[4] this framework provided an evidence-based structure to enhance playgroup development and evaluation methodological quality. Following this framework, this thesis concludes with a process evaluation. Cost-effectiveness is recommended as part of a process evaluation.[18] However, this was beyond the scope of this thesis so instead conducted as a separate master's dissertation project[19] and therefore, only superficial cost comparison data is reported in this thesis. Additionally, the last phase of the MRC-DECI framework[9] is implementation, as per 'sustained knowledge use' in the KTA framework.[8] Implementation was not conducted across multiple agencies in this thesis, but recommendations are discussed in Chapter 8.

This thesis contains eight chapters with chapters two to seven comprising of six separate papers, published, accepted or prepared for submission to various peer reviewed journals. These six papers follow the phases of the MRC-DECI framework,[9] documenting the sequential stages of playgroup development, implementation and evaluation. The foreword for each chapter describes how each paper fits within the KTA framework and the final thesis discussion (Chapter 8) synthesises findings according the KTA framework,[8] outlining recommendations for implementation and future research.

A range of referencing styles and both Australian and American spelling are used across the six papers to meet the varied journal guidelines and it is acknowledged there is some repetition of information in the introduction across papers. Given these were published separately this was unavoidable. Each presents a unique study, presenting novel results. The thesis introduction (Chapter 1) and discussion (Chapter 8) reference list is located at the end of the discussion chapter. Given, the other chapters comprise individual journal articles; the associated reference lists are located at the end of each corresponding chapter.

1.2 The Critical Years

While research shows every stage of the developmental years from childhood to adolescence is important for shaping lifelong learning, mental and physical heath, the early years undoubtedly provides the critical foundation. Early childhood is a fundamental time for children's learning and development with the first three years crucial in shaping neural growth and laying the foundation for long-term health, social participation and well-being.[20-22] This peak period of developmental plasticity is influenced by the dynamic interaction of epigenetic, genetic and environmental factors.[23] Whilst a brain is born wired with billions of neurons it is the environmental interaction and experiences that build the brain's architecture.[21] In these early years a child learns to biologically adapt to their environment, their brain and central nervous system, growing and developing to fit and respond to their physical and social environment.[22,24,25] Genetics therefore provide the framework for neural development, but brain connections and pathways are developed, strengthened and reinforced through early interactions and experiences.[26]

Early experiences and environments are major predictors of child development and long-term outcomes.[27] The family environment plays a crucial role in exposing children to positive or negative experiences having long-term consequences on cognitive, physical, and psychosocial health outcomes,[26,28] remaining the strongest predictor of academic inequality.[29] Stimulating and supportive environments that encourage play, problem solving and language expand learning and development, activating a child's positive genetic potential.[30,31] In contrast, under stimulating and stressful environments hinder development or result in maladaptive functioning and gene expression,[30,31] negatively impacting cognitive function and psychological wellbeing, and increasing the risk of long-term health problems.[30,32,33] Factors that place children at greater risk of disadvantaged early experiences include geographical environments, sociodemographic factors, health conditions and specific risk factors[34] such as family poverty, social isolation, caregiver mental health, family violence, parenting styles and caregiver education.[26] The greater the child and family's level of disadvantage, the higher the risk of developmental challenges and adverse development outcomes.[35] Considering children are raised within an environment of relationships, their relationship and interactions with their primary caregivers are pivotal to early cognitive and social emotional development in shaping neural pathways.[23,30] Responsive, positive and emotionally engaging caregivers grow and strengthen neural connections compared with caregivers who are absent or unreliably respond to infants' interactions, which negatively impacts or limits neural development.[23,36]

The importance of children engaging in play in the early years is fundamental to children's lifelong learning and development, with research consistently demonstrating the benefits of play on children's social, emotional, cognitive and physical wellbeing.[37] Play is best described as a behaviour characterised by non-literality, active engagement, flexibility and spontaneity, enjoyment, intrinsic motivation, and free choice.[38-39]Considered so important for child development, the United Nations High Commission for Human Rights[40] has recognised play as a right for every child. Play is considered a child's primary occupation, providing the contact for children to be exposed to and master a wide range of developmental skills whilst also fundamental in supporting parent-child attachment.[41] Children's developmental trajectory is crucially influenced by affective and secure relationships with their caregivers that interact and relate through play.[37] Responsive and playful interactions between a caregiver and child promote parent-child attachment, enhancing the child's emotional wellbeing, cognitive and physical development.[42] Despite the importance of play, children from vulnerable or disadvantaged families,[43] and children with developmental delay and disabilities[42] often experience greater challenges engaging in play, further increasing their developmental disadvantage.

The United Nations Convention on the Right of the Child[44] acknowledges children, like adults have the right to safety and the 'highest attainable standard of health' (p7). Given the importance and long-term effects of a child's early years this is a key period to support and intervene to provide a safe and nurturing environment that enhances children's ability to have lifelong health and wellbeing. The investment in the early years not only positively impacts children and families but has wider implications for community with research consistently demonstrating better outcomes for children equating to better outcomes for communities.[26,29,30] Intervening to support and enhance a child's environment in the early years has greater economic and social return than intervening later.[26,45] Nationally and internationally governments are responding, developing early intervention policy and investigating intervention programs that promote and support early childhood.[22,25,46] In Western Australia, the Department of Health recently released the Sustainable Health Review recognising the importance of the first 1000 days as a key priority area for support and investment, specifically identifying the need to support vulnerable families inclusive of low income, culturally and linguistically diverse (CALD) and Aboriginal and Torres Strait Islander families.[47]

1.3 Developmental Delay and Disability

A shift in the epidemiology of disability has seen an increase in the prevalence of neurodevelopmental and behavioural disorders such as autism spectrum disorder, compared to physical and medical disorders.[48] The Australian Early Development Census (AEDC) measures developmental vulnerability of children when entering formal schooling. In 2018, the AEDC reported that 19 percent of Western Australian and 21 percent of Australian children were vulnerable in one or more developmental domains when starting full time school. This equates to over 6,365 children in Western Australian and over 63,440 children nationwide.[49] Such delays can negatively impact child development and increase children's risk of poorer psychosocial outcomes.[50]

Children from non-dominant cultural and ethnic backgrounds are also more vulnerable to delays including first nations people and CALD children and families.[51] A third of CALD children are considered developmentally vulnerable when starting school[51,52] and in Australia, Aboriginal and Torres Strait Islander children experience higher rates of developmental vulnerability and delay than non-Aboriginal children.[49,53] Considering expectations of learning and development is culturally determined, it cannot be assumed that children from different cultures will exhibit or demonstrate developmental skills in the same way and therefore caution must be taken when interpreting standardised data.[51] Nevertheless, collectively it demonstrates that cultural background shapes children's development and learning.

A family's socioeconomic status has also been shown to influence child development. Children from low income families experiencing socioeconomic disadvantage, have higher rates of developmental delay, lower academic outcomes, and adverse long-term health and wellbeing.[54-57] Longitudinal research reveals children exhibiting delays in early childhood from low income families experience ongoing developmental delay compared to children exhibiting developmental delays from high income families who improve to match or exceed peers over time.[58] Accordingly, it is imperative for early intervention services to target children with increased risk of developmental delays and disability including children from CALD families, Aboriginal and Torres Strait Islander families and families experiencing socioeconomic disadvantage, to improve child development outcomes and long-term health and wellbeing.[22,59]

1.4 Early Intervention

Given early childhood is the most sensitive period for learning and development it is the most effective and cost-efficient time to intervene.[60] The first three years of a child's life are when they are most receptive to neurological growth and development with intervention prior to the age of three years having the most beneficial outcomes for children, families and societies.[28,46,61] Early identification of developmental delays and disability and timely referral and access to early intervention services is therefore critical in enhancing short and long-term developmental outcomes.[52,62,61]

The individual, societal and economic return for intervening promptly with developmental delay or disability is well established, reducing the severity of the delay and yielding long term positive outcomes, increasing an individual's education and earning, improving mental and physical health whilst reducing delinquency and public spending.[32,50,61] Longitudinal studies have established that early childhood intervention benefits individuals (social competency, increased education achievement and earning), governments (reduced welfare) and the broader society (reduced crime).[64-66] Subsequently, there is increasing pressure for governments to support children and families during this time to improve outcomes for individual children, families and society.[46]

Children and families most in need of early intervention services are the least likely to access them. Research shows children from CALD families, Aboriginal and Torres Strait Islander families, and/or families of low socioeconomic status experience more difficulties accessing early intervention services.[53,67] Priority is placed on providing equitable services that effectively screen children more vulnerable to developmental delays, with research suggesting preschools and supported playgroups as ideal models for early identification and referral pathways of vulnerable children to early intervention services.[62,68]

1.5 Child Development Service

The Child Development Service (CDS) of Perth, Western Australia is a publicly funded medical and allied health early intervention agency providing services for children with developmental delay and their families across the Perth metropolitan region. Population growth and the high proportion of West Australian children with developmental delay and disability have increased demand for early intervention services. Over the past ten years, the number of children aged zero to 17 years in Western Australia has increased by 18.5 percent to 576,366, with the biggest increase of 28.5 percent occurring in the age group of zero to eight years.[69] Since 2010 demand for CDS services has increased by 19 percent, with over 19,600 children registered for services and approximately 1500 new referrals received each month.[5] Consequently, it has been necessary for the CDS to operate with a waitlist for some services, which is at risk of increasing unless alternative approaches to service delivery are adopted. Waiting lists are a challenge faced by early intervention services nationally and internationally.[70-72] Given the vast amount of literature on neuroplasticity in children, any delay in service provision risks missing the critical time period where children are likely to make the most progress in their development.[70,71,73]

In 2013/2014 the CDS undertook a quality improvement study to examine current service delivery from the perspectives of staff and consumers and compared this to best practice as outlined in the literature with the goal of identifying key aspects for service reform.[74] One of the most consistent findings was the need for the CDS to become more responsive to families when first referred.[74] Parents reported heightened anxiety and stress when first referred, and discussed the importance of shorter waiting times, access to timely information about the service and their child’s needs, and the ability to network with other parents experiencing similar concerns.[74] The concept of a therapeutic playgroup was proposed by both CDS consumers and staff as a model of early contact for parents and caregivers to provide timely access to information, deliver support and guidance from a professional and facilitate parent networking.[75,76]

1.6 Playgroups

Playgroups are used throughout the Australian community with over sixty percent of Australian children aged four to five years having attended a playgroup at least once.[77] This community-based early childhood model is endorsed by the Australian government[1,78] and aims to increase community connections, enhance parenting and provide opportunities to promote children's social, emotional and physical development.[79-81] Playgroups are shown to benefit parent, child and communities by improving caregiver wellbeing and support networks, children's development and school readiness and community engagement.[1,82] Early parenthood is a time many parents seek social connections with their communities[83] to buffer the isolation and loneliness often experienced by new parents.[81] In the context of increasing community fragmentation and less varied formal and informal family supports,[84,85] playgroups provide an important platform to develop social networks and relationships.[86] Despite play being essential in promoting children's social, emotional, cognitive and physical development,[87] today's children engage in less play than previous generations[88] and children with disabilities often require additional support to develop play skills.[89] Consequently, there is increasing interest in models such as playgroups that provide opportunities for children to engage in structured and unstructured play in the presence of a caregiver to help guide and support play and social skills and foster parent and child play.

The playgroup model takes different forms comprising community playgroups, supported playgroups and therapeutic playgroups. Communuity playgroups are parent led and universal groups open to all children and families. Supported and therapeutic playgroups differ from community playgroups targeting, families and children with specific needs or vulnerabilities such as CALD backgrounds.[79] Therapeutic playgroups target children and families with specific risk factors or identified developmental delays and/or disabilities.[81] Playgroups are perceived as an accessible and 'safe' method for families to access information from trusted and respected sources, including facilitators and other parents.[90,91] Consequently, they are increasingly recognised as a 'soft entry' point to monitor developmental concerns and enable timely referrals to early intervention for vulnerable families often missed or who experience difficulties accessing services.[52,92,93] However, despite the wide implementation of playgroups there is consensus that playgroups lack empirical research evaluating their effectiveness.[94]

1.7 Statement of the Problem

The combination of an increasing population[69] and high rates of developmental vulnerability[49] has increased the demand for early intervention services resulting in waiting lists for some services. There is strong evidence to suggest that responsive and flexible services will improve children's long term physical and mental health and wellbeing, which has significant social and financial implications for Australian society.[95] Longer waiting times for paediatric services are associated with higher parental stress,[96] delay in diagnosis[97] and declining psychosocial wellbeing of children.[70] Parents value shorter waiting lists and timely access to services and information about their child's development.[98-100] Timely intervention takes advantage of children's brain plasticity and provides support to parents, reducing parental stress and enabling them to better support their child's development.[73,95] Consequently there is an increasing need to investigate alternative approaches and models of service delivery that are more effective in meeting the needs of children and families when first referred to a service.[101] Research shows increasing resources alone will not resolve waiting lists, but instead a comprehensive analysis is needed to examine how to best use existing resources more efficiently.[102,103]

The playgroup model was suggested by CDS consumers and clinicians as a preferred early contact model for children and families when first referred to the CDS.[75,76] Whilst the importance of intervening early to support vulnerable children and parents in enhancing health and wellbeing, and preventing development delay is well known,[104,105] empirical playgroup research is limited. Therefore, further research is required to evaluate playgroups,[4,82] particularly as an early contact model. Varying playgroup models, components and definitions have hindered playgroup evaluation, so research is required to provide a common definition or 'blueprint' of evidence-based playgroups to enable evidence-based playgroup implementation and evaluation.[82,93,106] Consequently, there is a need to systematically define and develop a therapeutic playgroup model and evaluate this model to determine if this is an effective service option for children with developmental delays and their families.

1.8 Significance

This consumer and stakeholder driven study will determine if playgroups are effective in improving parent and child outcomes when first referred to the CDS. The premise of this project came out of previous CDS research that identified key recommendations for CDS clinical reform.[74] Guided by a knowledge translation framework, the research is clinically relevant to the CDS and is expected to result in increased consumer satisfaction with CDS service delivery. The benefits of consumer and community engagement in research are well established,[107] increasing research relevance, outcomes and implementation.[108,109] It is anticipated that providing playgroups as an early contact option for parents will reduce the level of stress they experience following their child being identified as having concerns about their development, and increase their confidence in supporting their child's development. If shown to be effective, the outcome will address the issue of growing waiting lists and may potentially positively impact the approximately 20,000 children and families accessing the CDS each year.[110] These findings have direct implications for the CDS and many other early intervention organisations that are operating with waiting lists and need to consider alternative models of delivering services to enable vulnerable children and families to access services in a timely manner.[111] The incorporation of knowledge translation strategies at each stage of research methodology enhances research translation to practice, facilitating CDS adoption and implementation of the playgroup if shown to be effective and relevant in meeting the needs of children and families.

In a research context defined by inconsistent playgroup definitions and a lack of empirical studies on playgroup efficacy[4] study outcomes have immediate implications for children across Western Australia and Australia. Findings will contribute to our understanding of the role of playgroups in facilitating child and parent outcomes for children at risk of developmental delay and provides the first evidenced protocol for how to develop and deliver effective playgroups. Accordingly, this research could be used nationally and internationally by other service providers to meet the needs of children with developmental delays and their families. In regional and remote Australian communities, where access to therapy services is limited,[112] this model has the potential to provide families with timely and regular developmental support within their local community, a model for which researchers and policy makers have long advocated.[113] In addition to this, given the frequency of playgroups and the considerable government investment in playgroups within the Australian community[77] an evidence-based playgroup program is anticipated to gather nationwide interest.

1.9 Chapter Synopsis

The overall aim of the doctorate is to develop and evaluate a therapeutic playgroup for children with developmental delay and their families. It examines if this intervention is more effective than standard care in addressing the needs of children and families when first referred to an early intervention service. Study methodology was designed using the application of the KTA framework[8] in conjunction with the MRC-DECI framework[9]. The KTA conceptual framework[8] served as the overarching framework to guide the creation and application of playgroup knowledge to the CDS context. This facilitated knowledge partnerships with CDS consumers, professionals and policy makers at each research stage to ensure the developed playgroup intervention was acceptable and relevant to the needs of the CDS and consumers, increasing the likelihood of playgroup implementation. The MRC-DECI framework[9] underpinned playgroup development and evaluation research methodology, ensuring this was a rigorous and systematic process.

This chapter synopsis provides a description of both frameworks, specifying how thesis chapters and papers relate to each framework. Figure 1.1 maps thesis stages to the KTA framework[8] and Figure 1.2 maps thesis stages to the MRC-DECI framework.[9] The summary of research aims and methodology for each paper and the corresponding KTA and MRC-DECI stages are outlined in Table 1.1.

1.9.1 Knowledge to Action Framework

The KTA framework[8] comprises of two stages; knowledge creation and action. These stages are described as fluid and can overlap and influence each other, occurring simultaneously or sequentially. Knowledge creation is conceptualised as a funnel, with knowledge becoming increasingly refined and tailored to the needs of the knowledge users. This includes three stages: i) knowledge inquiry - primary studies and research; ii) knowledge synthesis - the accumulation and analysis of existing knowledge; and iii) knowledge tools and products - the refining of knowledge to provide succinct and user-friendly knowledge formats for dissemination and application. To effectively tailor knowledge creation, the needs of knowledge users should be incorporated in each stage.[8] This funnelling of knowledge can create knowledge products and tools to effectively guide clinical practice and decision making.[114]

The action cycle encompasses the activities needed to facilitate knowledge implementation. Key phases of this cycle include: i) identifying the problem to address; ii) identifying, reviewing and selecting knowledge to address the problem; iii) adapting knowledge to the local context; iv) assessing barriers to knowledge use; v) selecting, tailoring and implementing intervention; vi) monitoring knowledge use; vii) evaluating outcomes; and viii) sustaining ongoing knowledge use. These phases are flexible and dynamic, they may be conducted simultaneously and can impact on knowledge creation.[8]

This thesis applied the KTA framework in the creation of evidence-based therapeutic playgroup knowledge, synthesising playgroup evidence and developing a playgroup protocol relevant to the needs of children with developmental delay and their families. This project was conceived by earlier CDS research[74] that identified playgroups as a potential solution for the problem of waiting lists and the need for services to become more responsive to families when first referred. In this thesis the knowledge creation and action cycle were conducted concurrently, ensuring knowledge was tailored to the CDS and the developed playgroup intervention was trialled, evaluated and refined to improve outcomes and be contextually relevant for children with developmental delays.

Fundamental to the KTA process is collaborating and partnering with key stakeholders including consumers, health professionals and policy makers.[8,115] This consumer and service driven study was overseen and coordinated by a collaborative research team comprising of representatives from the CDS and academic institutes increasing research relevance and service ownership, whilst ensuring knowledge translation strategies were embedded in each stage of development. Consumers, health professionals and policy makers were key contributors to each stage of the playgroup development and evaluation. The KTA framework and corresponding thesis stages are displayed in Figure 1.1.

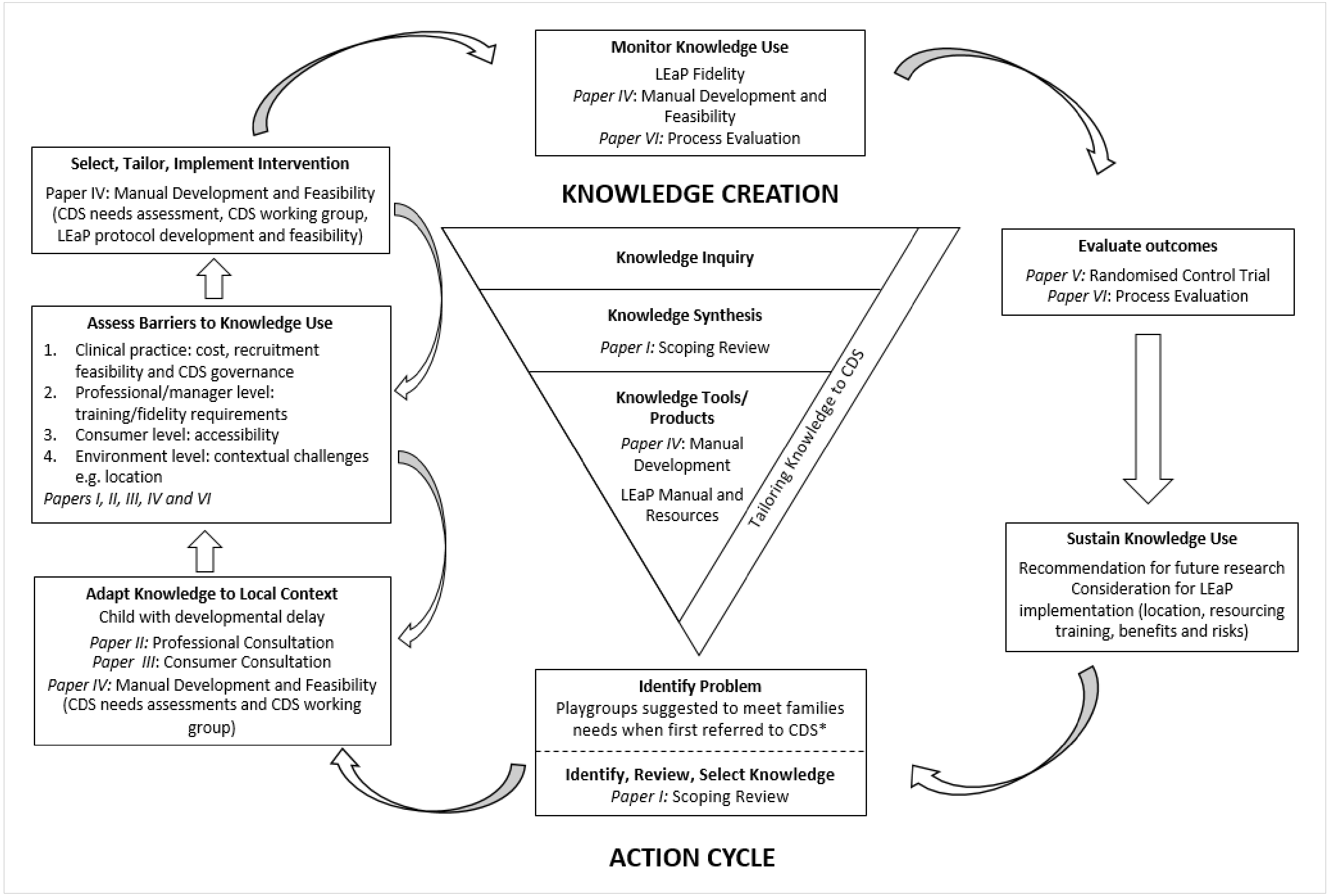


Figure 1.1 **Thesis methodology mapped to the Knowledge to Action Framework**[8]

1.9.2 Medical Research Council Framework

The Medical Research Councils' (MRC-DECI) framework for the development and evaluation of complex interventions[9] complemented the KTA framework,[8] guiding the development and evaluation of the therapeutic playgroup. The term 'complex intervention' describes an intervention that requires multiple and interacting components to make it effective, creating a level of complexity when attempting to identify these varying components or 'active ingredients' and evaluating the wide range of potential outcomes that result from the intervention.[116] Given the complex nature of playgroups and the absence of established playgroup definitions and practice principles[4,106] this framework was most suitable to guarantee the systematic development and evaluation of playgroups, ensuring the playgroup was theoretically founded and that the process by which it was effective was ascertained.[117]

The MRC-DECI framework[9] is widely used within the paediatric and developmental sciences.[118-120] Initially developed in 2000 the model has undergone revisions with the most recent MRC-DECI framework consisting of four phases: development; assessing feasibility; evaluation; and implementation.[9] The study is mapped according to the MRC-DECI framework and phases as outlined in Figure 1.2. Table 1.1 provides an overview of methods used across each research phase.

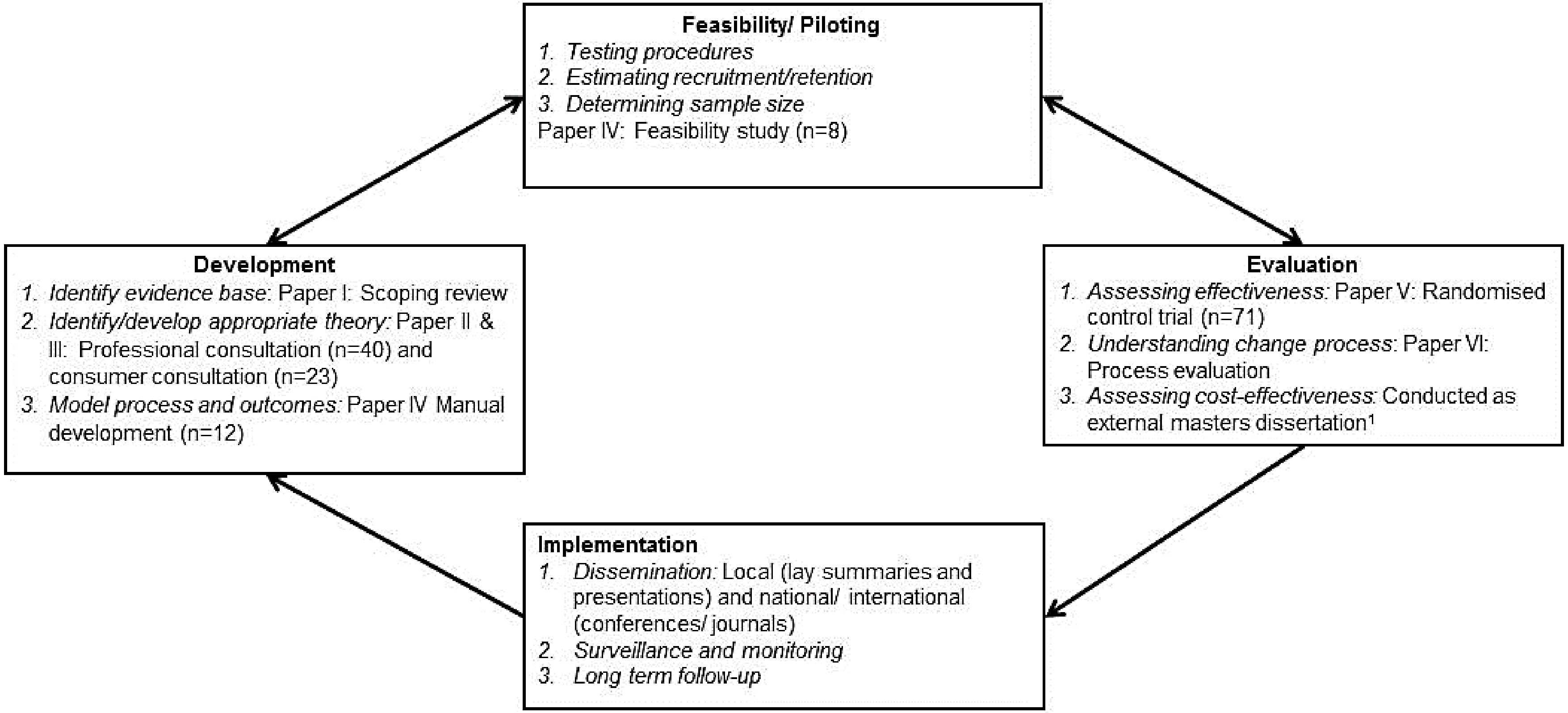


Figure adapted from the Medical Research Council Framework[2]

[1] Davidson E. *An economic evaluation of the use of therapeutic playgroups for children with developmental delay* [Masters Dissertation]. Perth, Western Australia: School of Public Health, Curtin University; 2018.

[2] Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ*. 2008;337.

Figure 1.2 Methodology mapped to the Medical Research Council Framework[9]

Table 1.1 Overview of methods used

	Paper I	Paper II	Paper III	Paper IV	Paper V	Paper VI
Study Aim	To identify the 'active ingredients' of playgroups from the literature	To identify the definition and 'active ingredients' of playgroups from perspectives of early intervention professionals	To identify the 'active ingredients' of playgroups from the perspective of parents	Develop and test the feasibility of the LEaP playgroup	To evaluate the efficacy of the LEaP playgroup on parent, child and service outcomes	To identify key intervention components and processes that impacted on LEaP outcomes
KTA framework stage	*Knowledge Creation:* Knowledge synthesis *Action Cycle:* Identify, review and select knowledge; and assess barriers to knowledge use	*Action Cycle*: Adapt knowledge to local context; and assess barriers to knowledge use	*Action Cycle*: Adapt knowledge to local context; and assess barriers to knowledge use	*Knowledge Creation:* Knowledge tools/products *Action Cycle*: Adapt knowledge to local context; assess barriers to knowledge use; select, tailor and implement intervention; and monitor knowledge use	*Action Cycle*: Evaluate outcomes	*Action Cycle*: Assess barriers to knowledge use; monitor knowledge use; and evaluate outcomes
MRC framework phase	Phase I: Development	Phase I: Development	Phase I: Development	Phase I: Development Phase II: Feasibility/ Piloting	Phase III: Evaluation	Phase III: Evaluation
Study design	Scoping literature review	Focus group methodology	Interpretive phenomenology	Manual development and feasibility testing	Two-armed randomised control trial	Mixed method process evaluation

	Paper I	Paper II	Paper III	Paper IV	Paper V	Paper VI
Sample	36 articles: journal articles (n=26), government reports (n=6), non-government reports (n=3), and unpublished thesis (n=1)	40 professionals and community workers with experience facilitating supported or therapeutic playgroups for children with developmental delay and/or disability	23 parents of children with developmental delay and/or disability with experience attending a supported or therapeutic playgroup	Step 1: Manual development LEaP working group: professionals (n=10) and caregivers (n=2) Step 2: Feasibility testing Children (n=8) with delays in communication and at least one more developmental domain (27.25 months SD 3.3 months; 6 males), and their parents (n=9) Professionals facilitating playgroup (n=2)	71 children with developmental delays in communication and at least one more developmental domain (28.76 months SD 5.4 months; 56 males); and their parents (n=72)	Parents of children with developmental delay that attended the LEaP playgroup intervention (n=30) Professionals that facilitated LEaP playgroups (n=4)
Data collection	Database search of Embase, CINAHL, MEDLINE, PsychInfo, ERIC, Scopus, Informit, Mednar, Google Scholar, Libraries of Australia and Trove	Focus groups (8) (n=40)	Focus groups (3) (n=16) Interviews (n=7)	Efficacy testing (pre-test post-test design): Baseline (0 weeks) and follow up (10 weeks) Parent scores on PSI-4 SF, TOPSE, SF-12 and FSS; and parent and child rated COPM, GAS and CDI Focus groups (n=5) and interviews (n=3)	Timing: baseline, 12 weeks post-baseline; and 28 weeks post-baseline Measures: Parent scores on PSI-4 SF, TOPSE, SF-12 and FSS; parent and child rated COPM, GAS and CDI	Focus groups (5) (n=24) Interviews (n=7) Questionnaire (n=15) Recruitment, attendance rates and LEaP fidelity

	Paper I	Paper II	Paper III	Paper IV	Paper V	Paper VI
				Data informed feasibility focus areas:[114] acceptability; demand, implementation; practicality; adaptation; integration and expansion		
Data analysis	Qualitative data: Meta-ethnography Quantitative data: Descriptive statistics	Open coding[115]	Colaizzi's[116] method of qualitative data analysis	Quantitative data: Non-parametric Wilcoxon signed-rank test with an alpha level of 0.05 Qualitative data: Open coding	Linear mixed model regression Descriptive statistics	Qualitative data: Framework Method[115,117] Quantitative data: Descriptive statistics

LEaP: Learn, Engage and Play Playgroup: KTA: Knowledge to Action Framework[8]; MRC: Medical Research Council Framework[9]; SD: standard deviation; PSI-4 SF: Parenting Stress Index-Short Form[118]; TOPSE: The Tool to Measure Parenting Self-Efficacy[119]; SF-12: The Medical Outcome Study Short Form Health Survey[120]; FSS: Family Support Scale[121]; COPM: Canadian Occupational Performance Measure[122]; GAS: Goal Attainment Scale; CDI: MacArthur-Bates Communicative Developmental Inventories[123]

1.9.2.1 Phase I Development

The development phase seeks to identify the key components and theory of the complex intervention by: i) reviewing existing intervention evidence base; ii) identifying appropriate theory; and iii) modelling process and outcomes.[17]

i. To *identify the evidence base* of playgroups a scoping review of therapeutic and supported playgroup literature was conducted. This is outlined in paper I (Chapter 2) and served to identify the key components of engaging and effective playgroups from current literature.
ii. To *identify and develop appropriate playgroup theory* two qualitative studies were conducted to identify the 'active ingredients' of therapeutic and supported playgroups from the perspective of professionals and caregivers. These studies form paper II and III and are outlined in Chapters 3 and 4.
iii. The *modelling process and outcomes* stage was undertaken in paper IV when findings from the first three papers were triangulated to identify overarching playgroup theory and practice principles. The Learn, Engage and Play (LEaP) playgroup was then developed based on these findings and in conjunction with a working group of CDS caregivers (consumers) (n=2) and professionals (n=10). Proposed outcomes of the LEaP playgroup were identified based on playgroup theory and LEaP content. This is outlined in Chapter 5.

Consistent with the KTA framework, the development phase synthesises knowledge and develops new knowledge products and tools in the form of the LEaP manual and resources. The corresponding action cycles include 'identifying and reviewing knowledge'; 'adapting knowledge to the CDS context'; 'assessing potential barriers to knowledge implementation'; and 'tailoring and implementing knowledge to the CDS context'.

The research objectives and aims of Phase I included:

Objective 1: Conduct a scoping review to examine playgroup literature and identify the 'active ingredients' of supported and therapeutic playgroups. The specific aims were to:

1) Identify the ‘active ingredients’ of supported and therapeutic playgroups found to be beneficial for children at risk of or with identified developmental delay and/or disability and their families.
2) Employ a motivational framework[131] to identify playgroup components and processes that enhance children and parents’ affective, cognitive and behavioural engagement when attending supported and therapeutic playgroups.

Objective 2: Explore the definition and ‘active ingredients’ of therapeutic playgroups for children with developmental delay and/or disability and their families from the perspectives of professionals. The specific aims were to:

1) Establish a definition of therapeutic playgroups.
2) Identify the ‘active ingredients’ of therapeutic playgroups for children with developmental delay and/or disability and their families.
3) Identify the perceived benefits of playgroups for children with developmental delay and/or disability and their families.

Objective 3: Explore the ‘active ingredients’ of supported and therapeutic playgroups from the perspectives of parents attending a playgroup with a child with a developmental delay and/or disability. The aim was to:

1) Identify the key component of playgroups that increase parental engagement and perceived effectiveness of playgroups.

Objective 4: Develop the Learn, Engage and Play (LEaP) playgroup for children with developmental delays and their families. The specific aims were to:

1) To triangulate findings from earlier research papers to identify overarching playgroups’ theory and practice principles.
2) To develop the LEaP protocol in conjunction with CDS working group.

1.9.2.2 Phase II Feasibility and Piloting

The feasibility and piloting phase seeks to assess preliminary intervention acceptability.[116] This includes piloting the intervention to monitor and evaluate intervention delivery, compliance, recruitment and retention.[9] A combination of quantitative and qualitative methodology is recommended to gather data to enable better understanding of potential barriers or reasons for variation in participation or outcomes.[109]

i. The feasibility of the LEaP playgroup was evaluated in paper IV (Chapter 5). Adopting a pre-test post-test design, qualitative and quantitative data were collected from caregivers (n=9), children (n=8) and LEaP playgroup facilitators (n=2). These were evaluated against Bowen and colleagues'[121] feasibility focus areas of acceptability; demand; implementation; practicality; adaptation; integration and expansion. Findings were then used to inform manual revisions in preparation for more rigorous LEaP evaluation.

The feasibility and piloting stage correspond to 'assessing potential barriers to knowledge implementation' and 'monitoring knowledge implementation' of the action cycle on the KTA framework.

The research objectives and aims of Phase II included:

Objective 5: To conduct a pilot study to assess LEaP feasibility with the specific aims to:

1) To evaluate the feasibility of the LEaP study against Bowen and colleagues[121] feasibility focus areas.
2) To provide recommendations for LEaP manual revisions.

1.9.2.3 Phase III Evaluation

The evaluation phase seeks to rigorously evaluate the effectiveness of the intervention and includes: i) assessing effectiveness; ii) understanding process; and iii) assessing cost-effectiveness.[116]

i. The MRC-DECI guidelines[9] advocate that *accessing effectiveness* be conducted using a randomised study design to reduce potential selection bias. As per these guidelines, LEaP playgroup *effectiveness* was evaluated using a single-blind two-armed randomised control trial (RCT) (n=71). This study evaluated the effectiveness of LEaP plus standard care compared to standard care alone on parent, child and service outcomes and forms paper V as outlined in Chapter 6.

ii. Conducting a process evaluation is considered a key step in *understanding the process* of intervention implementation and which components made the intervention successful or unsuccessful.[9,116] A process evaluation of the LEaP intervention was conducted as per the MRC-DECI's guidelines[18] to examine implementation, influencing contextual factors and to identify mediating components that impacted LEaP outcomes. This study involved parents (n=30) and professionals (n=4) and formed paper VI as outlined in Chapter 7.

iii. As part of the process evaluation in paper VI the *cost-effectiveness* of LEaP was considered, however this was beyond the scope of this doctorate and conducted as a separate masters dissertation project.[19] Instead a cost-comparison was conducted in this doctorate measuring the cost of LEaP delivery compared with standard CDS interventions.

The evaluation phase fulfils three stages of the KTA framework action cycle. The RCT 'evaluates outcomes' and the process evaluation 'assesses barriers to knowledge use', 'monitors knowledge use' and 'evaluates outcomes.'

The research objectives and aims of Phase III included:

Objective 6: To evaluate the effectiveness of the LEaP playgroup for children with developmental delays and their families. The aim was to:

1) Evaluate the efficacy of LEaP plus standard care compared to standard care alone in improving parent and child outcomes.

Objective 7: To evaluate the implementation of LEaP and to ascertain mediating factors that may have influenced RCT outcomes. The specific aims were to:

1) To examine the usability, implementation, and mediating factors and barriers of LEaP within an early intervention service.
2) To explore the perceived effectiveness of LEaP from the perspective of parents and facilitators.

1.9.2.4 Phase IV Implementation

The implementation stage of the MRC-DECI framework[9] focuses on disseminating findings, implementing intervention and long-term monitoring.[17] Considering the substantial research to practice gap this is an important stage for effective interventions. Within the context of this doctorate findings were disseminated locally, nationally and internationally through lay summaries in the form of infographics, internal CDS presentations, national and international conference presentations and journal publications. The infographics for each study are located within the corresponding chapter and the list of presentations and associated abstracts are in the 'Appendices' section. Intervention implementation and long-term monitoring were beyond the scope of this doctorate however the synthesis of study findings and potential implications of these locally, nationally and internationally are discussed against the KTA framework in Chapter 8.

1.10 Ethics

This study was granted ethics approval from Curtin University Human Research Ethics Committee (HR228/2015) and Perth Children's Hospital Human Research Ethics Committee (2015181).

Chapter 2 Paper I: Scoping Review of Playgroup Literature

Foreword

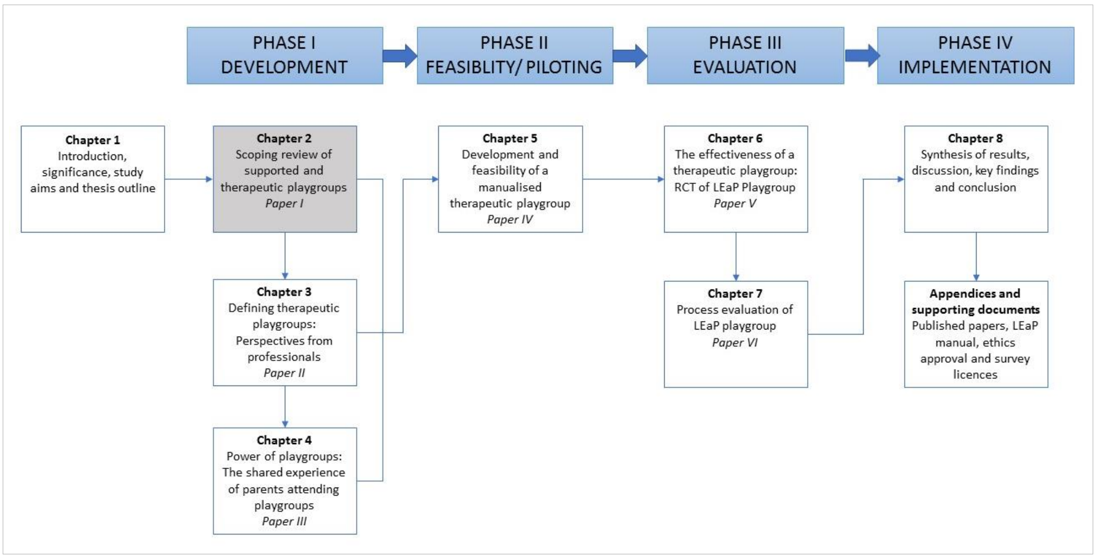
This chapter outlines the aims, methods and findings from a scoping review of supported and therapeutic playgroup literature. In a research context defined by inconsistent playgroup definitions and practice principles the scoping review aimed to begin mapping the 'active ingredients' of therapeutic and supported playgroups for children and families from the literature. The review focused on literature pertaining to playgroups for children at risk of or with identified developmental delay and/or disability, increasing the relevance of findings to the CDS and other early intervention services. In the KTA framework this is a key component of knowledge synthesis (knowledge creation) and forms the second and third stage of the action cycle (identifying and reviewing playgroup knowledge; and assessing barriers to playgroup use).[8]

Findings confirmed playgroups are a multifaceted and complex intervention that requires interacting affective, cognitive and behavioural components to be considered efficacious for children and families. The review also highlighted the lack of empirical research supporting playgroup effectiveness and concluded more research is required to clearly articulate the playgroup intervention to enable playgroups to be systematically implemented and evaluated.

Paper I study methodology

Study	Sample	Data Collection	Data Analysis	KTA Framework Stage
Scoping literature review	A total of 36 articles: Journal articles (n=26), government reports (n=6), non-government reports (n=3), and unpublished thesis (n=1)	Database search of Embase, CINAHL, MEDLINE, PsychInfo, ERIC, Scopus, Informit, Mednar, Google Scholar, Libraries of Australia and Trove	Qualitative data: Meta-ethnography Quantitative data: Descriptive statistics	*Knowledge Creation:* Knowledge synthesis *Action Cycle:* Identify, review and select knowledge; and assess barriers to knowledge use

Paper I mapped to thesis chapters



The scoping review has been published in the *Scandinavian Journal of Occupational Therapy*, impact factor 1.316.

Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22. doi:10.1080/11038128.2018.1498919

PAPER I: WHAT MAKES PLAYGROUPS THERAPEUTIC? A SCOPING REVIEW TO IDENTIFY THE ACTIVE INGREDIENTS OF THERAPEUTIC AND SUPPORTED PLAYGROUPS.

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2.1 Abstract

Background: Supported and therapeutic playgroups aim to support and strengthen vulnerable children and families by increasing parenting capacity, parent-child interaction, enhancing child outcomes and promoting community networks. This review aimed to comprehensively scope the literature to identify the 'active ingredients' of supported and therapeutic playgroups.

Method: A systematic search of grey and scholarly literature was conducted using Medline, PyschINFO, EMBASE, ERIC, CINAHL, MedNar, Informit, Scopus, Libraries of Australia and Trove. Articles were included if they: i) defined playgroup as a group of children and actively involved caregivers; ii) described a therapeutic playgroup or supported playgroup model; iii) targeted children prior to school age; and iv) measured the impact of playgroups. A total of 36 articles met the inclusion criteria. Qualitative data were synthesised using a meta-ethnographic approach with findings charted against a conceptual model of engagement. Quantitative data were synthesised using descriptive statistics.

Results: The findings identified that emotional, practical and informational components of playgroups strongly reflect family-centred practice, self-efficacy theory and peer-support principles.

Conclusion: Therapeutic and supported playgroups are complex interventions, with numerous interacting components that make them beneficial for children and families. This review is the first to identify the 'active ingredients' of playgroups with findings informing the design of future playgroups for vulnerable children and families.

Keywords: playgroups, therapeutic playgroups, engagement, family-centred practice, and peer support.

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Acknowledgements

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2.2 Introduction

The playgroup model has been an integral part of the Australian early childhood community for over 40 years, with over 200,000 families attending playgroups each week (1, 2). Playgroups are community-based groups that parents and their preschool aged children attend to socialise and play (3). Playgroups aim to enhance parenting capacity and skills, promote and enhance children's social, emotional and physical development and increase families' social networks and community connections (4-6).

Playgroups are family-centred and can be categorised broadly to include community playgroups, supported playgroups and therapeutic playgroups. Community playgroups are universal services aimed at all children and families, generally organised by local communities and independently run by parents (7). Supported playgroups are led by a qualified facilitator and target communities and families with specific vulnerabilities or needs (4, 8). Therapeutic playgroups, also referred to as intensive playgroups, are supported playgroups that aim to provide a higher level of support to caregivers of children with developmental delay and/or disability, providing targeted information, and a range of services and therapies (6).

Playgroups have strong community and policy support, and are associated with improved outcomes for children, caregivers, and the broader community (7, 9, 10). The benefits of play for child development are widely recognised (4) and playgroups provide opportunities for children to engage in a range of structured and unstructured play in the presence of caregivers (5). Supported play experiences are particularly important for children with delays and disabilities who require more support and guidance to develop their play skills (11). Therefore, it's not surprising that therapeutic playgroups are increasingly recognised as a 'soft entry point' for vulnerable families accessing early intervention services for their children at risk of disability (7, 12).

The playgroup model has been an approach of interest to occupational therapy given its ability to promote both child and community development (13, 14). The importance of play for child development, parent-child relationships, and attachment is well recognised within occupational therapy literature (15, 16) and playgroups provide a unique opportunity to support children's engagement in play. Playgroups are community-based models that aim to enhance community engagement and occupational therapists have a unique role in promoting community development working towards community health and wellbeing (17). Developing and expanding the evidence-base for play-based approaches has the potential to improve the effectiveness of these approaches.

Playgroups have been associated with gains in children's behavioural, cognitive and language development and contribute to school readiness (5, 18). A longitudinal study of a nationally representative sample of Australian families and children found playgroup attendance for disadvantaged families was associated with significantly higher learning competence for all children (1). Caregivers attending playgroups experience increased social networks and peer support, and improved parent-child relationships and parenting skills (5, 19-21). Noted benefits to the community include greater community engagement; increased awareness of community services and integration to other services such as schools and therapeutic settings (4, 5, 22).

While the playgroup model is intuitively underpinned by support from the fields of child development and the social sciences, there is a paucity of rigorous research evaluating the effectiveness of playgroups in the Australian and international context (1, 3, 23). This is particularly critical given a funding context of economic rationalism and the reliance of supported playgroups on government funding (1, 3, 24). Researchers state inconsistent playgroup definitions, models and practice principles have impeded playgroup implementation and evaluation, calling for a common definition of playgroup components to strengthen the evidence base for playgroup effectiveness (7, 13, 25). Understanding the active ingredients of playgroups will support the development of evidence-based interventions and effectiveness research (26). This is consistent with the Medical Research Councils' (27) guidelines for developing and evaluating complex interventions and considered a critical step in establishing evidence-based playgroups. A systematic review attempted to do this, but given this was a secondary aim, only superficial information was presented and authors concluded further research was required to identify principles of effective playgroups (9). More recently, Commerford and Robinson (7) documented the principles of high-quality playgroups, but this was a government report and not underpinned by systematic review methodology. Hence, there is a need to build on these preliminary findings and examine the literature with the primary aim of identifying the 'active ingredients’ of playgroups for children and families. Accordingly, the specific aims of this review were a) to systematically examine literature pertaining to therapeutic and supported playgroups to identify the ‘active ingredients’ of playgroups found to be beneficial for children and families; b) employ the motivational framework (28) to enable further understanding of how children and parents engage in playgroups.

2.3 Method

A scoping review methodology was chosen as the most appropriate approach to meet the aims of this review given the evidential limitations in the range and rigor of playgroup research. This approach enabled examination of the range and extent of playgroup research, refining the line of inquiry, and identifying research gaps (29). This review adopted the principles and techniques of scoping methodology developed by Arksey and O’Malley (30) and refined by Levac, Colquhoun and O’Brien (29), employing a six phase process consisting of: i) identifying the research question; ii) identifying relevant studies; iii) study selection, iv) charting the data; v) collating, summarising and reporting the results; and vi) consultation with key stakeholders (29, 30). Although uncharacteristic for a scoping review, a quality assessment of the literature was conducted as recommended by Levac (31) and Daudt (32). Ethical approval for consultation with key stakeholders was received from Princess Margaret Hospital Ethics Committee (2015181) and Curtin University Ethics Committee (HR228/2015).

Identifying the research question

This scoping review aimed to address two questions: firstly, ‘What are the ‘active ingredients’ of playgroups found to be beneficial for children who are at risk of or have identified developmental delay/disability and their families?’; and, secondly, ‘What process underpins the engagement of children and parents in supported and/or therapeutic playgroups at the affective, cognitive and behavioural levels?’ Ultimately the aim of this review was to expand the evidence-base for supported and therapeutic playgroups, informing playgroup practice and policy, and facilitating rigorous evaluative research. In the context of this review playgroup was operationally defined as supported and/or therapeutic playgroups and caregivers referred to parent and/or other caregivers attending a playgroup with a child.

Identifying relevant studies

Grey and scholarly literature was searched using electronic databases EMBASE, CINAHL, MEDLINE, PyscInfo, ERIC, Scopus, Australian Health Databases (Informit), MedNar, Google Scholar, Libraries of Australia and Trove. Search terms focused on two concepts: i) supported and/or therapeutic playgroup; and ii) children with developmental delay, disability or vulnerability. Search terms were truncated, adjusted and exploded with assistance of university health librarians. References were manually searched to identify additional relevant articles. Citation searching was also conducted using Scopus and Web of Science. Search terms are outlined in Table 2.1.

Table 2.1 Scoping review search terms

Playgroups	Relevance to early intervention
Playgroup*/ play group, support* playgroup*/ support* play group*, inclusive play group*, inclusive playgroup*, community playgroup*/ community play group*, development* play group*/ development* playgroup*, therap* play group*/therap* playgroup*,	early child* intervention* early intervention*, development* delay* development* disability*

Study selection

As per scoping methodology developing the inclusion and exclusion criteria for this review was an iterative process and was established by the research team after familiarisation with the literature (29). Articles were included if they: i) defined playgroup as a group of children and caregivers where the caregiver was actively involved; ii) described a therapeutic or supported playgroup model; iii) targeted children prior to school (five years or younger) and; iv) evaluated the impact of attending a playgroup on child, parent, service and/or community outcomes. Given playgroups have limited empirical evidence for their effectiveness this review expanded its search terms to examine playgroups shown to be beneficial for families rather than limit findings to studies that demonstrated playgroup effectiveness. Articles were excluded if they: i) described a community playgroup model; ii) were run for children six years and older; iii) did not have parents present in the playgroup; iv) were published prior to 1990; and v) were not a journal article, government/non-government report or thesis. While systematic reviews were excluded the reference lists of three reviews were scanned with relevant articles included in the present review. The initial database search resulted in 7319 articles, and an additional 68 identified through manual scans of reference lists. Two authors independently screened titles, abstracts and full texts to determine if studies met inclusion criteria. The online software program Covidence (33) was used to manage references and the study selection process. A total of 339 studies were accepted on title, 170 on abstract and a total of 36 articles met criteria after full text screening. The PRISMA diagram (34) outlines this process (Figure 2.1).

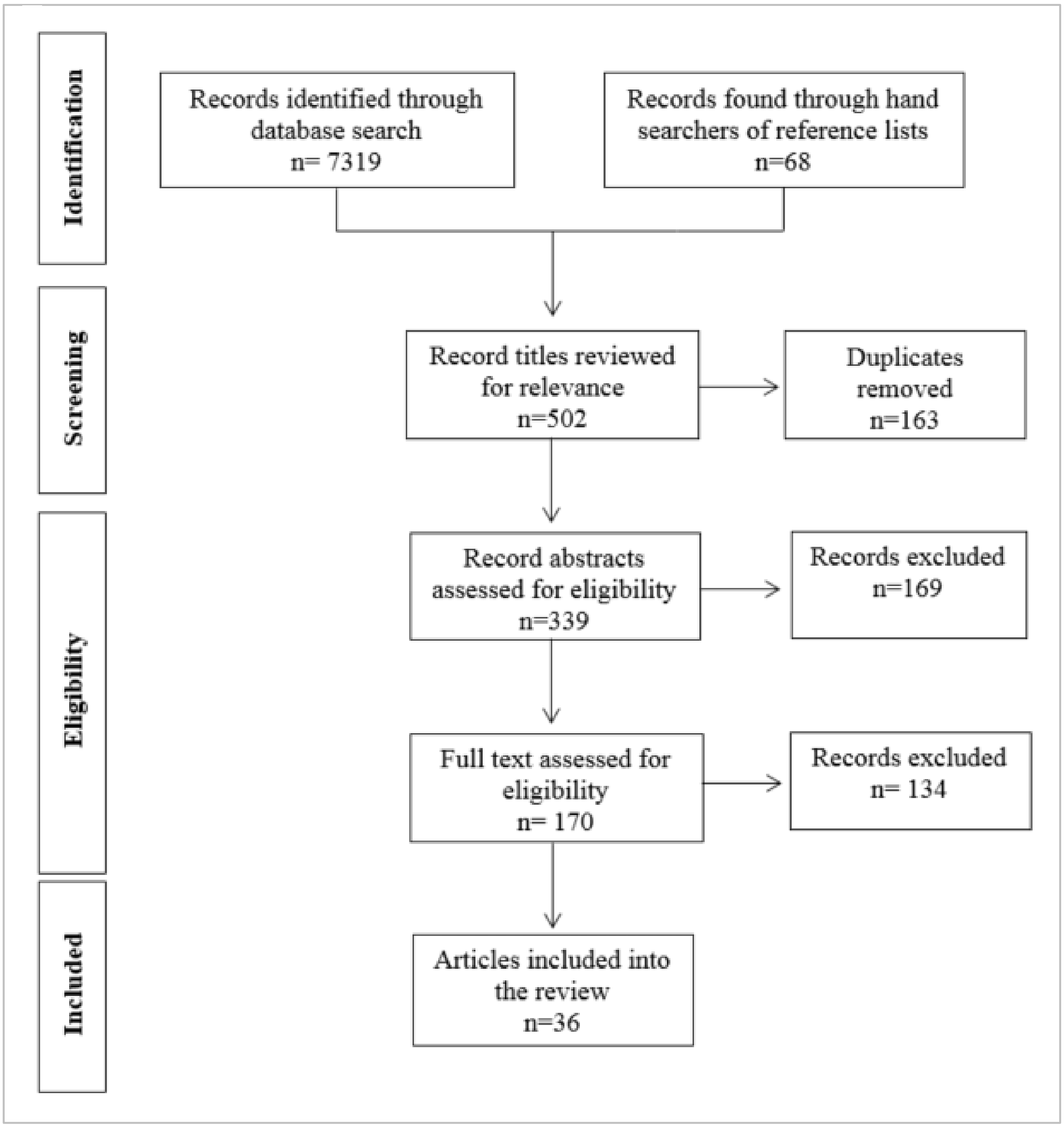


Figure 2.1 Flowchart of study selection process

Charting the data

Descriptive data was recorded and charted using a data charting form. Recorded information included author, year of publication, type of publication, country, study population, study aims, study design, intervention, outcome measures, results, and quality of evidence. Qualitative data was charted using a thematic framework.

To assess methodological quality of articles the Consolidated Criteria for Reporting Qualitative Research (COREQ) (35) and the Down and Black's measure (36) were used. The Joanna Briggs Institute hierarchy of scientific evidence for effectiveness and evidence for meaningfulness was used to rate the level of each article (37). Scoring on the Down and Black's measure (36) was adapted to account for lower level studies by changing the statistical power calculation question from a 1 to 5 rating to a yes/no response as was done by Sohanpal and colleagues (38). As recommended by Syed and Nelson (39) one researcher served as the master coder assessing quality and coding findings for all studies and a second researcher randomly selected 10 studies to assess and code findings to ensure reliability.

Collating, summarising, and reporting the results

Review findings are summarised and described in the results section. Due to the variety of methods and results included in the review a meta-analytical analysis of empirical studies was not possible. Descriptive statistics characterised all quantitative studies.

Synthesis of qualitative findings adopted a meta-ethnography approach as described by Noblit and colleagues (40) undertaking multiple readings of identified articles, developing an understanding of key concepts. Reciprocal translational analysis subsequently compared key themes and concepts to translate findings across papers. A refutational synthesis examined similarities and contradictions between studies, identifying and developing new and novel themes, and elements impacting playgroup engagement. A line-of-synthesis approach informed the overall interpretation of findings and key themes. This review followed Dixon-Wood and colleagues (41) recommendation, integrating themes into a coherent theoretical framework. Given client engagement is critical to achieving clinical outcomes (42) an engagement framework was used to identify playgroup components that optimise engagement and consequently enhance outcomes for children, families and communities. Accordingly, themes and key findings identified via data synthesis were charted against King and colleagues (28) conceptual model of client engagement (42). This framework proposes client engagement is a multifaceted and dynamic process influenced by therapist and client factors and comprises three overarching components; affective, cognitive and behavioural involvement. Affective involvement is the emotional connection to the intervention and therapeutic process; cognitive involvement is the perception of the effectiveness and need for an intervention; and, behavioural involvement is active participation and confidence in carrying out the intervention (28). The corresponding therapist principles of engagement include providing hope and support, providing coherence and ensuring manageability. The corresponding client processes of engagement are receptiveness, willingness and self-efficacy. The motivational framework proposes that interventions incorporating these therapist principles and client processes produce an optimal client state of being hopeful, having a conviction about the intervention process and goals, and having confidence to achieve intervention goals (28). Key themes or 'active ingredients' of playgroups were mapped in relation to therapists' principles of client engagement, motivating engagement processes (client change processes), and outcomes in relation to optimal client states (28). Subthemes emerged from the data further explaining client engagement. All qualitative data and linking to the motivational framework were managed using NVIVO Version 11 (43).

A quality assessment of articles was undertaken, ascertaining the level of evidence related to specific playgroup elements, highlighting pertinent considerations when both developing and evaluating playgroups.

Consultation

Consultation is recognised as an important step in increasing methodological rigour and offering perspectives on scoping results (29, 30). Stakeholders consisting of parents (n=6), allied health and educational professionals (n=37), and community playgroup representatives (n=4) were consulted via focus groups and interviews to give perspectives on scoping review findings. All focus groups and interviews were audio recorded and transcribed verbatim.

2.4 Results

Study design

Included studies comprised of 26 journal articles, six government reports, three non-government reports and one unpublished doctoral thesis. Nine studies were mixed methods (23, 44-49), 20 were qualitative (4, 21, 50-62) and seven were quantitative (63-65). Articles were published between 1997 and 2018. A total of 29 studies were conducted in Australia, two in the United Kingdom, one in New Zealand, and four in the United States of America.

Population

Playgroups targeted a range of groups including: i) children and families disadvantaged due to social or economic circumstances including low socioeconomic status, geographical isolation, parental mental health issues and/or parental alcohol and drug abuse (44, 54, 55, 58, 59, 66-69); ii) children and families with an established or suspected developmental delay or disability (4, 50-52, 63); iii) refugee or immigrant families (21, 54, 62, 70-72); and iv) Australian Aboriginal and Torres Strait Islander families (48, 49, 73). A total of 11 playgroups targeted two or more of the above population groups (8, 21, 23, 44-47, 57, 64, 74, 75). Table 2.2 – Table 2.4 provide an overview of included studies and summarises their main findings.

Table 2.2 Quantitative studies

		Population					Data collected						
Author (year) country	**Publication and Study Design**	**Vulnerable**	**Delay/Disability**	**CALD**	**Aboriginal**	**Multiple**	**Child**	**Caregiver**	**Facilitator**	**Other**	**Participants**	**JBI Level of Effectiveness**	**Quantitative Findings**
Fabrizi, Ito & Winston (13) USA	Journal article Pre-test post-test repeated measures		•				•	•			N=8 (caregiver -child dyads)	Level 2d- pre-test post-test	Increase in child playfulness from Time point 2 to 4 (p=001).
Fabrizi & Hubbel (14) USA	Journal article Quasi-experimental trial		•				•	•			N=36 (caregiver–child dyads)	Level 2d-pre-test post-test	Child playfulness in all playgroups showed significant increase pre-test to post-test (p=.029) Occupational therapy led playgroup was more effective than the developmental playgroup control group (p=.023).
Hackworth et al (67) Australia	Journal article Cluster randomised trial	•					•	•			N=939 (Toddler Trial) N=757 (Infant Trial)	Level 1c- RCT	**Results only reported from Toddler Trial* At 32-weeks parents attending smalltalk group-only compared to standard demonstrated greater improvements in home learning and activities (ES = 0.17; 95% CI 0.01, 0.38) and verbal responsivity (ES = 0.16; 95% CI 0.01, 0.36).

Author (year) country	Publication and Study Design	Population					Data collected				Participants	JBI Level of Effectiveness	Quantitative Findings
		Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Child	Caregiver	Facilitator	Other			
Nicholson, Berthelsen, Abad, Williams & Bradley (64) Australia	Journal article Repeated-measured					●		●			N=358 (caregivers)	Level 2d- pre-test post-test	Improvement in all groups in activities with the child (p=.002), parental irritability (p=.028), parental mental health (p=.001), child social play skills (p=.000) and child communication skills (p=.000). Significant improvement in parent engagement, sensitivity and acceptance, and child responsiveness, interest and social participation (p=0.000). Higher playgroup dose (6 session or more) rated higher in child social interaction compared to low playgroup dose (p=.032). High parental satisfaction with playgroup (79.8%) and facilitators (97.2%).
Nicholson, Berthelsen, Williams & Abad (74) Australia	Journal article Pre-test post-test					●		●			N=850 (caregivers)	Level 2d- pre-test post-test	Significant improvements in child behaviours: child responsiveness, child interest and child sociability (p<0.005). Significant improvements in parent measures: parent sensitivity, parent engagement and parent acceptance (p<0.005).

Author (year) country	Publication and Study Design	Population					Data collected				Participants	JBI Level of Effectiveness	Quantitative Findings
		Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Child	Caregiver	Facilitator	Other			
Williams, Berthelsen, Nicholson, Walker & Abad (65) Australia	Journal article Repeated-measured		●					●	●		N=201 (mother-child dyads)	Level 2d- pre-test post-test	Significant improvement in: child engagement (p<.000); sensitivity to child(p<.000), acceptance of the child (p<.000); child interest and participation (p<.000); child responsiveness (p<.000); and social participation (p<.000). 98.4% of parents reported playgroups increased child development knowledge, 99% stated it expanded play strategies, 99.5% indicated it facilitated socialisation with other parents. Attendance of 6 or more sessions had 5.5 times higher chance to have better outcomes.
Williams, Berthelsen, Viviani, & Nicholson (73) Australia	Journal article Longitudinal study				●		●	●			N=622 (families)	Level 3e observation study without a control group	Parents that attended playgroup at one or both time points reported higher levels of self-reported home learning activities (p<.05) when children were 4 years of age. Parents that attended playgroup across both time points had higher levels of health service use (p<.05) and higher scores for seeking parental advice (p<.05) when children were 4 years of age.

*Results reported from Toddler Trail of study only, Infant Trail findings were excluded because intervention was not delivered in supported playgroup format.

Table 2.3 Qualitative studies

		Population					Perspective					Qualitative Findings					
												Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Effectiveness	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Appl, Fahl-Gooler & McCollum (50) USA	Journal articles Phenomenology		●				●			N=12 (caregivers)	Level 3	●	●	●	●	●	●
Appl, Farra & Smith (51) USA	Journal article Case study		●				●	●		N=9 (3 facilitators and 6 caregivers)	Level 3	●	●	●	●	●	●
Archard & Archard (72) New Zealand	Journal article Qualitative Focus groups and interview			●			●			N=5 (5 families)	Level 3	●	●				●
Barros, Kitson & Midgley (52) UK	Journal article Phenomenology		●				●			N=7 (caregivers)	Level 3	●	●	●	●	●	●

		Population					Perspective					Qualitative Findings					
												Affective		Behavioural		Cognitive	
Author (year) country	**Publication and Study Design**	**Vulnerable**	**Delay/Disability**	**CALD**	**Aboriginal**	**Multiple**	**Caregiver**	**Facilitator**	**Other**	**Participants**	**JBI Level of Effectiveness**	**Hope/Support/ hopeful stance**	**Receptiveness**	**Manageability**	**Self-efficacy/ Confidence**	**Coherence**	**Willingness/ conviction**
Byrne, Bedford, Richter & Bammer (69) Australia	Journal article Qualitative Interview	•					•			N=15 (caregivers)	Level 3	•	•	•	•		•
Cummings & Wong (4) Australia	Government report Grounded Theory		•					•		Not reported	Level 3	•	•	•	•	•	•
Department of Education and Early Childhood Development (53) Australia	Government report Qualitative Anecdotal reporting and interview					•	•	•	•	21 sites (participants not specified) 7 stakeholders	Level 3	•	•	•	•	•	•
Jackson (54) Australia	Journal article Case study			•			•	•		N=16 (5 caregivers, 9 children and 2 facilitators)	Level 3	•	•	•	•	•	•

		Population					Perspective					Qualitative Findings					
												Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Effectiveness	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Jackson (20) Australia	Journal article Multiple-case study	●					●	●	●	N=25 (19 caregivers, 2 school principals and 4)	Level 3	●	●	●	●	●	●
Jackson (56) Australia	Journal article Multiple-case study	●					●	●	●	N=20 (15 caregivers, 2 school principals and 3 facilitators)	Level 3	●	●	●	●	●	
Knaus & Warren (57) Australia	Journal article Ethnography					●	●	●	●	N=34 (30 caregivers, 1 facilitator and 3 school staff)	Level 3	●	●	●	●	●	●
La Rosa & Guilfoyle (71) Australia	Journal article Phenomenology			●			●	●		N=9 (mothers)	Level 3	●	●		●		●
McLean, Edwards, Evangelou, & Lambert (76) Australia	Journal article Focus group and survey	●					●			N=50 (caregivers)	Level 3	●	●		●		●

												Qualitative Findings					
		Population					Perspective					Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Effectiveness	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
McEwin, Stagnitti, & Andrews (58) Australia	Journal article Qualitative descriptive study	●					●	●		N=14 (12 caregivers and 2 facilitators)	Level 3	●	●	●	●	●	●
McLean, Edwards, Colliver, & Schaper (59) Australia	Journal article Focus groups Inductive and deductive analysis	●					●	●	●	N=71 (11 pre-service teachers, 10 school staff and 50 caregivers)	Level 3	●		●	●	●	●
Needham & Jackson (60) UK & Australia	Journal article Multiple-case study comparison	●					●	●		Examined two articles involving parents and facilitators but did not state participant number	Level 3	●	●	●	●	●	●
New, Guilfoyle & Harman (70) Australia	Journal article Phenomenology			●			●	●	●	N=11 (8 mothers, 2 playgroup workers and 1 teacher)	Level 3	●	●	●	●		●

												Qualitative Findings					
		Population					Perspective					Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Effectiveness	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Seibold (68) Australia	Journal article Participatory Action Research	●								N=6 (mothers)	Level 3	●		●	●		●
Oke, Stanley & Theobald (21) Australia	NGO Report Qualitative Interviews and focus groups					●	●	●		N=34 (22 caregivers and 12 service providers)	Level 3	●	●	●	●	●	●
Warr, Mann, Forbes, & Turner (62) Australia	Journal article Qualitative Semi structured interviews			●				●		N=14 (7 parent-facilitators, 4 community-facilitators and 3 coordinators)	Level 3	●	●	●	●		●

Table 2.4 Mixed methods studies

													Qualitative Findings					
		Population					Perspective						Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Meaning-fulness	Quantitative Findings	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Abad & Williams (44) Australia	Journal article Surveys, clinical observations, organisational feedback, and administration records.					•	•	•	•	Not specified	Level 2	Parent report playgroup made them; closer to child (70%) and they translated behavioural strategies to home (87%) High parental satisfaction (100%)	•		•	•	•	•
ARTD Consultants Phase 2 (45) Australia	Government Report Interviews, survey, focus groups and document reviews					•	•	•	•	5 regional managers; 1,348 caregivers; number of facilitators not stated	Level 2	Data related to sample group not outcomes	•	•	•	•	•	•
ARTD Consultants Final (46) Australia	NGO report Case studies; focus groups and surveys					•	•	•	•	Not specified	Level 2	Data related to sample group not outcomes	•	•	•	•	•	•

		Population					Perspective						Qualitative Findings					
													Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Meaning-fulness	Quantitative Findings	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Berthelsen, Williams, Abad, Vogel & Nicholson (23) Australia	NGO report Interviews and survey					●	●	●		N=126 (118 caregivers and 8 facilitators)	Level 2	Higher playgroup attendance compared to lower attendance had better understanding of child development (p=.014); and family engagement (p=.000).	●	●	●	●	●	●
Department of Education and Early Childhood Development (53) Australia	Government report Survey and interview					●	●	●		N=73 (61 caregivers and 12 facilitators)	Level 2	Playgroup attendance had no significant difference on social networks and support systems.	●	●	●	●	●	●

		Population					Perspective						Qualitative Findings					
													Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Meaning-fulness	Quantitative Findings	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Knaus, Warren, & Blaxell (66) Australia	Journal Article Interviews, questionnaires, and checklists	●					●			N=33 (caregivers)	Level 2	Children that attended playgroup had higher mean scores in emotional and social development; initiating interactions; self-regulation, cooperation, concentration, and appeared more comfortable in school environment, (p values not reported).	●					●

													Qualitative Findings					
		Population					Perspective						Affective		Behavioural		Cognitive	
Author (year) country	Publication and Study Design	Vulnerable	Delay/Disability	CALD	Aboriginal	Multiple	Caregiver	Facilitator	Other	Participants	JBI Level of Meaning-fulness	Quantitative Findings	Hope/Support/ hopeful stance	Receptiveness	Manageability	Self-efficacy/ Confidence	Coherence	Willingness/ conviction
Johnston & Sullivan (48) Australia	NGO Report Interviews, focus groups, site observations and review of written material and statistical data.				●		●	●	●	N=37 (7 facilitators, 12 service providers, 18 advisory members) Parent numbers not recorded	Level 2	Reported 14/24 program outcomes met, 3/24 not met and 6/24 require improvement to be met.	●	●	●	●	●	●
Shulver (49) Australia	Doctorate Longitudinal multiples cohort cross-sequential design Interviews Grounded theory				●		●	●		Qualitative N=16 (mothers) Quantitative data from LSAC study (77) N= 5000 children	Level 2	Caregivers attending playgroup had higher health ratings (p<.001) and more positive views of their parenting (p<0.05) than those who did not. Carers with limited informal support networks were 40% more likely to attend playgroups (p<.001).	●	●	●	●	●	●

													Qualitative Findings					
		Population					Perspective						Affective		Behavioural		Cognitive	
Author (year) country	**Publication and Study Design**	**Vulnerable**	**Delay/Disability**	**CALD**	**Aboriginal**	**Multiple**	**Caregiver**	**Facilitator**	**Other**	**Participants**	**JBI Level of Meaning-fulness**	**Quantitative Findings**	**Hope/Support/ hopeful stance**	**Receptiveness**	**Manageability**	**Self-efficacy/ Confidence**	**Coherence**	**Willingness/ conviction**
Williams, Berthelsen, Viviani, & Nicholson (75) Australia	Government report Four phase study; systematic review; effectiveness study; multi-site case study and secondary analysis of longitudinal data					●	●	●	●	Effectiveness study: N=246 (34 facilitators and 212 families) Multi-site: 8 playgroups Secondary analysis: N=622 (children)	Level 2	*Parents attending playgroup reported children significantly improved social skills (p=.007) and receptive communication skills (p<.001).	●	●	●	●		●

*Only report findings from Phase B of study, other phases have been published in other studies.

Playgroup model

The playgroup models evaluated differed significantly across studies in their dosage, duration, size, location, structure and facilitator qualifications with some studies omitting any details in relation to the playgroup model (21, 47, 53, 62, 70, 71). Typically playgroups ran once weekly for two hours (4, 49, 54, 55, 57, 59, 60, 76), were delivered to a group of eight to ten families (50, 52, 64, 65, 78) and were conducted in a variety of settings including schools (57, 59, 66, 72), community centres (4, 45, 55, 65), shopping centres (58) and universities (50). Some playgroups were held fortnightly (48) whilst others ran up to three times a week (45, 57), ranging in duration from eight weeks (55) to five years (56). Group size ranged from seven dyads (4) to 30 dyads (55). Four studies evaluated the same playgroup model, titled the ‘Sing and Grow’ playgroup model (44, 64, 65, 74).

Playgroup activities and routines were described in twenty articles, including common elements of play-based indoor and outdoor activities, group music and singing, story time, snack time, free play and farewell activities (4, 44, 45, 49, 50, 54-60, 63-65, 79). Studies that reported on playgroup facilitators indicated playgroups typically had two facilitators (52, 54-56, 58), but facilitators training requirements and qualification levels varied and included music therapists (44, 51, 64), allied health professionals (4, 46, 50-52, 63) educational professionals (45, 55, 56, 76) and child care workers with child development training (58). Some articles failed to report any information on playgroup coordinator qualifications (21, 47, 53, 70, 72).

Quality assessment of articles

All studies meeting the inclusion criteria were included regardless of methodological quality capturing findings across both peer reviewed and grey literature and reflecting the lack of higher order rigorous playgroups research (3).

As has been acknowledged in previous playgroup literature reviews (9, 10), all included studies had common methodological limitations. Scores for quantitative studies according to Downs and Black (36) quality scale ranged from 2 to 27 (out of 27) with a median of 11 points, indicating the methodological limitations of many of the studies. Common limitations included: lack of a control group; convenience or purposeful sampling; lack of stated intervention protocol and treatment fidelity measures; limited use of valid and reliable outcome measures (44, 45, 47, 48); and limited acknowledgement of confounding variables in analysis and discussion (23, 44, 45, 47-49, 64, 65, 78).

Across qualitative articles there was limited discussion of trustworthiness. Information on participant recruitment, data collection and data analysis was frequently limited or incomplete. Sample sizes were generally small with data on total number of participants (4, 46, 60) or subgroup samples missing (44, 45, 48); no studies discussed data saturation, only three returned transcripts to participants for checking (4, 49, 50) and only two studies reported member checking was conducted (52, 70).

Quantitative findings

Given the methodological quality of the quantitative data a meta-analysis was not possible and instead a narrative review was undertaken. Quantitative findings are outlined in Table 2.2 and Table 2.3.

Outcome measures can be broadly categorised to include parent, child, and community outcomes. Reliability and validity of measures varied making it difficult to compare findings across studies. Parent outcomes were the most frequently assessed, including parental mental health (49, 64, 65, 73), self-efficacy (64, 65), parental warmth and responsiveness (64, 65, 67), parent-child interaction (14, 67), and social support (49). Child outcomes included child behaviour (64-66), play (14, 65), and child development (65, 73). Community outcomes included health service use (49, 73) and community trustworthiness (73). Studies also measured playgroup participation (23, 44, 46, 49, 75).

Most studies comprised pre-post testing (44, 64, 65, 74), only five studies used comparison groups (14, 49, 66, 67, 73). Two studies drew data from larger longitudinal studies (49, 73), comparing outcomes of families who had attended playgroup to those who had not. Another study compared outcomes of children who had attended a supported playgroup prior to kindergarten to those who had not (66). In two studies one or both comparison groups were alternative forms of supported playgroups (e.g. playgroup plus home visiting) making it difficult to determine the effectiveness of supported playgroups (14, 67). One study compared different types of vulnerable groups receiving playgroup, for example children with disability compared to young parents (64), and another measured differences across playgroup implementation sites (74).

Many studies provided descriptive survey information only, with limited data analysis (44, 46). Studies reporting intervention effectiveness as demonstrated by changes in outcome measures indicated the playgroup had statistically significant impacts on parent and child outcomes. Parents attending playgroup had significantly higher health ratings (49), home learning and activities and verbal responsivity to their children (67). Child playfulness was measured in two studies and was also shown to significantly improve after playgroup (13, 14).

Parent-reported measures indicated playgroup attendance significantly improved parent and child outcomes. Parents' outcomes included improved parental irritability, parental mental health, activities with the child (64), and higher levels of home learning activities, health service use and parental advice seeking (73). Compared to parents who did not attend playgroup, parents attending playgroup had significantly fewer self-reported mental health symptoms and viewed their parenting more positively (49). Parents also reported significant improvements in child outcomes including communication and social skills (64, 65, 75).

Clinician observational measures were frequently used, revealing significant improvements in parent and child outcomes following playgroup however, these were likely impacted by observer bias and as such results should be interpreted with caution (65). Statistically significant improvement was reported for parent sensitivity, parent acceptance, parent engagement, child responsiveness, child interest and child social participation (64). Parenting behaviours including sensitivity to child, effective engagement of the child, and acceptance of the child (65), and child behaviours including child responsiveness, child interest and child sociability (74) all significantly improved after playgroup attendance.

The therapeutic dosage of playgroup was examined in three studies with results indicating attending six or more sessions was associated with over five times greater odds of achieving better outcomes for children and families (65). Families attending six or more sessions compared to those attending less than six sessions had a significantly better understanding of child development; better family engagement (23); and significantly higher child social interactions (64). Berthelsen and colleagues (23) found that high playgroup attenders reported significantly higher satisfaction with their playgroup facilitators than low attenders (23).

Themes

Qualitative findings are presented according to King and colleagues' (28) conceptual model of motivation under the engagement components of affective, cognitive and behavioural involvement and corresponding therapist principles and client processes. Further qualitative analysis revealed subthemes specific to therapist principles and client processes as outlined in Figure 2.2. Articles that contributed to themes are presented in Table 2.3 and Table 2.4. The definitions of the conceptual framework themes and subthemes are outlined in Table 2.5 and a summary of corresponding quotes are displayed in Table 2.6.

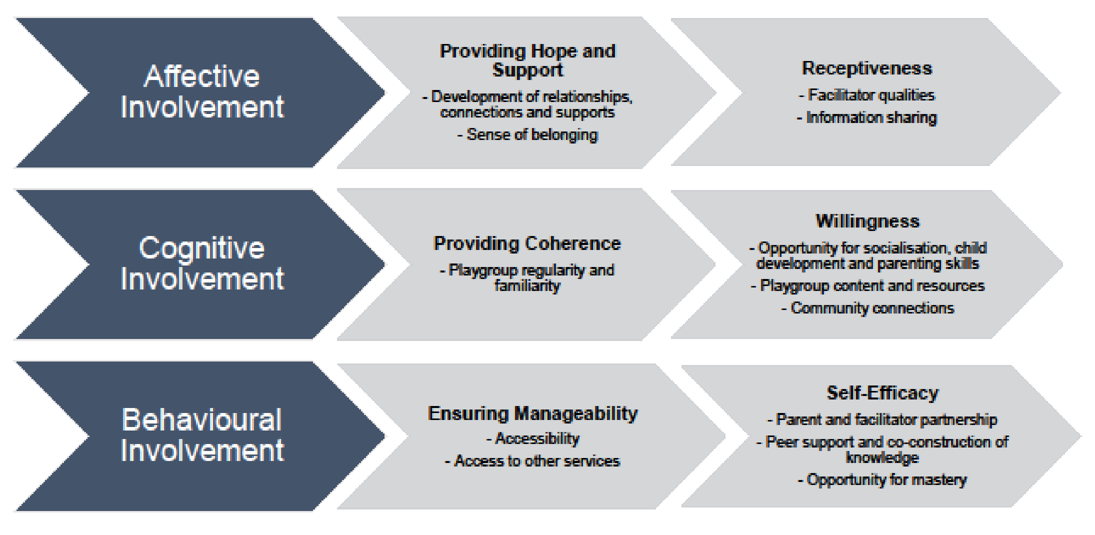


Figure 2.2 **Summary of qualitative themes**

Table 2.5 Framework definition and coding of themes

Findings	Definition
Framework	The three overarching facets of King and colleagues (28) engagement model: affective, behavioural and cognitive engagement
Theme	The subcomponents of King and colleagues (28) engagement model
Subtheme	Themes that emerged from the data further explaining client engagement

Table 2.6 Summary of themes and quotes

Framework	Theme	Subtheme	Quotes
Affective Involvement	Hope and support	Relationships	"Playgroup attendance had enabled parents to meet and talk with other parents" (23, p11).
		Sense of belonging	"Parents, facilitators and principals all shared similar views that the playgroups provided a non-threatening environment in which personal histories could be shared. Parents spoke at length about being able to come to a place where they could 'be themselves and chat' and about the value of making new friends and sharing common experiences related to raising children" (55, p31).
	Receptiveness	Facilitator qualities	"Playgroup staff were portrayed as available, approachable, and trustworthy, and their assistance with emotional and practical difficulties was profound and greatly appreciated by the mothers" (70, p60).
		Information sharing	"Access to regular support and the advice of other parents, as well as the support and information provided by visiting professionals, such as speech therapists and occupational therapists, may have also alleviated the need for professional services outside of playgroup" (47, p24).

Framework	Theme	Subtheme	Quotes
Cognitive Involvement	Coherence	Playgroup regularity and familiarity	“We’ve actually tried a couple of playgroups, but for one reason or another I just didn’t like them … I like the one we go to now, it’s got a bit more structure and it’s more focused, sort of, focused play, do you know what I mean? Like the others you’d go and the kids would just run amok for two hours whilst the parents sat there drinking coffee and that was it” (Mother, non-Aboriginal, 28, single, 1 child)” (49, p253).
	Conviction and willingness	Social support	“My son has global developmental delay – I wanted to meet mums in the same position and to learn more about his disability; also he needed to meet other children” (45, p36).
		Child development	“When parents were asked about their reasons for bringing their children to playgroup, without exception children’s socialisation was stated as the reason for participation. Parents viewed providing opportunities for their children to mix with other children as important, especially if their child had no other siblings” (60, p169).
		Parenting skills	“Teresa had a specific concern with her daughter that she was looking for help with: ‘I started coming to playgroup because my daughter was not drinking and I came to get extra support and help with this problem’” (49, p218).
		Playgroup format and content	“Almost all of the parents commented on how much their children enjoyed this space, having their own favourite toys or particular activities that they would return to time and time again. The fact that there was space for the children to move around was especially important for families living in very cramped housing conditions, and several remarked on how much their children ‘loved’ coming” (52, p284).
		Community engagement	“The newly arrived parents tended to focus on the idea that playgroups were a way to facilitate contact with the wider community and improve English skills” (21, p14).

Framework	Theme	Subtheme	Quotes
Behavioural Involvement	Ensuring manageability	Accessibility	“Parents cited the proximity and closeness of the playgroup to where they lived; being able to drop their older children at school and then go to playgroup was seen as an advantage for many families. A parent for example explained that the supported playgroup ‘has the school in common, other playgroups just have the suburb in common” (80, p29).
		Access to other services	“This playgroup has something special, because they get other services to attend. The speech therapist was great. I am always curious about his progress… he’s 15 months and not talking so it was great to speak to the speech therapist. I have also received information on childcare, immunisation, and the dentist” (58, p79).
	Self-efficacy and confidence	Facilitator and parent partnership	“Parents appreciated being listened to, and throughout the study they described how important it had been for them to develop relationships with the facilitators based on mutual respect, understanding and care. Parents benefited greatly from this type of support, which enhanced their ability to provide nurturing care to their children” (55, p33).
		Peer support and co-construction of knowledge	“Parents were valued for their capacities to parent, and were provided with informal, social spaces where they could share their experiences. This led to the co-construction of knowledge and added to their skill and confidence as parents” (56, p84).
		Opportunity for mastery	“When asked to provide ideas on how supported playgroups could best be supported to transition to parent-run groups, facilitators focused on allowing parents to take on roles in stages and giving them opportunities to practise those roles, providing skills and boosting confidence, giving group members practical strategies and providing ongoing support” (23, p21).

Affective Involvement

King and colleagues propose that affective involvement relates to families' emotional involvement with the therapist and the therapeutic process. It is influenced by therapists providing hope and support and clients being receptive to the intervention (28).

Therapist Principle: Providing hope and support

Twenty-nine studies identified playgroups as providing hope and support to families, facilitating the development of social relationships and connections in an environment where parents felt comfortable sharing their experiences and accessing needed support (4, 21, 23, 44-56, 58-60, 62, 65, 69, 70, 72, 80).

Theme: Development of relationships, connections and supports

Twenty-nine articles reported that playgroups provide opportunities for caregivers to socialise and develop relationships. This was perceived to contribute to parental confidence (23, 47, 55, 57), parental well-being (56), sense of belonging (45) and reduced social isolation (46, 47, 49, 54-56, 62, 70). Parental social support was a motivator for attending and engaging in playgroups. Across studies, families sought six key relationships from playgroups: parent to parent, parent to facilitator; parent to community services; parent to child; child to child; and family to culture.

The importance of playgroups in providing opportunities to develop relationships and social networks between families was described in 29 articles. Meeting families similar to their own (45, 48, 53, 58, 70) was perceived to increase social networks and reduce isolation and loneliness (21, 23, 45-47, 54, 55, 57, 60, 62, 65, 70), and facilitate the development of long term friendships (47). Challenges in developing social connections arose when parents felt they differed from others in regard to cultural background or gender (21, 45, 48, 52, 62), children's developmental abilities (50, 58) or if parents felt socially excluded in the group (21, 23).

Caregivers sought regular access to facilitators to build relationships and seek information on parenting, child development and community resources (45-47, 49, 52, 58, 60, 69, 70, 76). Relationships with facilitators were enhanced when parents felt listened to and perceived facilitators to be friendly, supportive, genuine, non-judgemental, respectful (23, 52, 53, 55, 56, 70), actively worked to enhance relationships between participants (23, 53-55, 57) and if they were from the same cultural background or local community as the participants (48). Relationships between families and their local communities were described in 20 articles with playgroups assisting families transition from home to school environments (45, 46, 50, 54, 57, 59, 66, 70, 76), to feel connected to their local community (70, 71) and increase knowledge of and access to relevant community organisations and local services (23, 45, 46, 58, 60, 70, 75). Parent and child relationships were identified in 11 articles with parents reporting playgroups provided opportunities for parents and children to attend together and for parents to learn about their child's abilities and interests (45, 46, 50, 52, 65), focus on interacting and playing with their child (45, 46, 54, 58, 69, 75, 76), and develop a strong relationship with their child (45, 58, 68). The social opportunities provided by playgroups for children to interact with other children and develop peer relationships was recognised in six articles, with parents reporting this as a positive experience for children to learn new skills from other children in a new and stimulating environment (21, 45, 49, 52, 54, 57). Finally, six articles indicated that playgroups provided opportunities for families to learn about new cultures (52, 72) enabling immigrant families to integrate into their local community (71, 72), and providing opportunities to connect with their own culture and cultural groups (21, 70).

Theme: Sense of belonging

Across included studies playgroups fostered a sense of belonging with 21 articles identifying group dynamics within playgroups facilitated connectedness between participants improving parental and child wellbeing, parental self-esteem and confidence whilst reducing parental stress (55, 56, 70). A sense of belonging was achieved by creating an informal and non-judgmental social environment that was welcoming (46, 56-58), accepting (50, 53, 55, 56) and where the sharing of ideas was encouraged (21, 49, 50, 52, 54, 70, 72) and criticisms discouraged (51, 55, 56). Parents' sense of belonging was enhanced by grouping families of similar backgrounds together (45, 46, 70), having medium sized groups (46, 51), and providing a range of developmental activities to increase child enjoyment and engagement (48, 49, 54, 59, 60).

Client process: Receptiveness

Elements of playgroups that most strongly impacted on families' receptiveness were the facilitator's professional and interpersonal skills and the method and format by which information was presented within playgroups.

Theme: Facilitator qualities

The importance of facilitators' technical and interpersonal skills was described in 23 articles. One of the major challenges of running beneficial playgroups however was the recruitment and retention of qualified facilitators (20, 23, 46, 48, 52, 60).

For playgroups to be beneficial they required qualified and experienced facilitators who provided information and supported families' needs; were flexible and adaptable; and managed group dynamics by resolving conflicts to ensure all participants felt comfortable (9, 45, 48, 56, 75). Parents also valued facilitators with a good knowledge of child development, parent-child interactions; parenting strategies (45, 49, 52, 53, 56, 69, 72, 76) and community services and referral processes (9, 23, 49, 56, 62, 75) that could provide practical advice and assistance (23, 46, 70, 71). Facilitators who came from the same cultural or linguistic background as families were perceived as important by both parents and facilitators (48, 49, 53).

The facilitator's interpersonal skills were key and included having strong communication skills, an individualised approach (53), being approachable (49, 70), non-judgmental (9, 10, 45, 53, 75), friendly and welcoming (46, 57), trustworthy (9, 10, 49, 56, 62, 70, 76), respectful (55), strengths based (4, 48, 50, 56), and culturally appropriate (9, 46). These qualities were valued by parents and reported to increase their ability to nurture their children (55). In contrast, facilitators who parents perceived as being critical, lacking understanding of family circumstances or 'singled parents out' were described as excluding for families (52).

Theme: Information sharing

Parents wanted access to formal and informal information about local services including community services and activities, schools and therapy services (45, 46, 48, 55, 58); parenting skills (21, 46, 47, 52, 54); child development; and parent-child interaction (23, 46, 47, 49, 50, 55, 65). Parents gained this knowledge and information through discussion with other parents (21, 45-47, 52, 53, 62, 70, 76), the playgroup facilitator (46, 49, 55, 58) and from visiting health professionals such as speech pathologists (47, 58).

Cognitive Involvement

Cognitive engagement as conceptualised in this review relates to parents' perception of playgroup relevance and coherence (28) and will be explained in terms of playgroup coherence, and families' conviction and belief.

Therapist principle: Providing coherence

Caregivers valued playgroups that were structured and held in a predictable and familiar setting where parents and children knew what to expect (21, 45, 49, 52-54, 58-60). Some studies reported that the consistency in routines and structure increased children's sense of safety and parents' feeling of organisation and control (57), improved developmental outcomes (53) and served to prepare children for more formal preschool settings (57, 59). Parents also valued their children being regularly exposed to a diverse range of stimulating and novel indoor and outdoor activities they ordinarily would not have experienced, increasing their learning and developmental opportunities (45, 47, 49, 59, 60).

Playgroup regularity was valued with both parents and facilitators reporting holding playgroups at a consistent time and place enabled parents to regularly access support from other parents, facilitators and other staff (47, 58, 70). This consistency provided a sense of certainty to the week particularly for more vulnerable families (46).

Client process: Willingness

A key element of beneficial playgroups was the participants' belief that playgroups were relevant and effective in meeting their needs. Playgroup participation resulted in high levels of parent satisfaction (44) with almost all parents stating they would attend playgroups again or recommend playgroups to other parents (64). Common convictions held by families attending playgroup were that playgroups provided opportunities to meet and socialise with other families; increase child development and socialisation; improve parenting skills and knowledge; provide a range of resources and activities; and enhance community connections.

Parent socialisation was a recurrent theme with many parents citing this as their primary reason for attending playgroup, followed closely by opportunities to foster child development and socialisation (21, 23, 45-50, 52, 54, 56, 57, 60, 62, 65, 66, 70, 71). Findings from 16 studies indicated that parents initially began attending playgroups for the benefit of their children. Parents viewed playgroups as an important way to increase their children's socialisation and development of social skills (21, 23, 45-47, 49, 50, 59, 60, 72, 75, 76), exposing them to a range of developmentally stimulating play opportunities and activities (45-49, 52, 59, 69, 75, 81) and preparing them for the transition to formalised schooling (21, 23, 45, 48, 52, 59, 66, 70, 76). Parent-child interaction and parenting skills were other key motivators for parents attending playgroups, with parents indicating they valued learning about their child's interests, abilities and strengths (49, 50, 59, 60); having opportunities to play, interact and have fun with their child (21, 23, 45, 50); and to develop parenting skills and knowledge to support their child's development (23, 45, 46, 52, 55, 58, 60, 68, 70).

Playgroup content, routines and resources were also key motivators for attendance, with 16 studies highlighting that parents and children looked forward to playgroup because children had the opportunity to experience new activities and toys and the playgroup structure, routine and content continued to support and encourage child development and parental learning (23, 45-49, 52-54, 58-60, 66, 69, 75). One study identified that parents were dissatisfied with the physical setting of playgroup, perceiving it to be too small, too crowded and not well secured (58). Finally, families reported attending playgroup to connect with their community and learn about available community supports and agencies (21, 23, 47, 54, 59).

Behavioural Involvement

Behavioural engagement is defined as an individual's active involvement and participation in the therapy and their confidence in their ability to implement the intervention (28). The two themes relating to behavioural engagement identified in this review were ensuring manageability, and parental self-efficacy to engage in playgroups.

Therapist principle: Ensuring manageability

Across the included articles, the manageability, or the ease with which families were able to attend playgroups was important. Elements that increased playgroup manageability were the physical location and accessibility of the venue and the families' ability to access other services through the playgroup.

Theme: Accessibility

Across the studies, findings revealed that venue, transport, and cost impacted playgroup accessibility. Playgroup venues needed to be centrally located and in close proximity to participants' housing or within walking distance to public transport and of minimal cost (45, 48, 53, 57, 58, 62). Playgroups located on school grounds increased families' access to the playgroup, the school and to their local community (46, 57-59). The availability of appropriate funding and venues for playgroups were significant challenges in running playgroups (23, 46, 48, 52, 53, 62), and engagement was further compromised by individual families' complexity and capacity to attend playgroups (23, 46, 62).

Theme: Ease of access to other services and disciplines

Playgroups were referred to as a 'one-stop shop or 'circle of care' approach offering a range of services and providing practical and emotional support as needed. This was essential in providing families with relevant information and referrals to appropriate community services and access to multidisciplinary support (21, 23, 45, 46, 48, 49, 58, 59, 62, 68-70, 75) in a safe and non-judgmental environment (21, 46, 47, 54-56, 58, 60). The co-location of playgroups with schools and community services added to the 'circle of care' and eased the transition from home to school and more formalised learning (21, 58, 59, 70).

Client process: Self-efficacy

Playgroups participation was perceived to positively impact on parental and child confidence, skills, and relationships (23, 64, 65). Playgroup elements that appeared to foster skill development and confidence were identified as parent and facilitator partnership, peer support and co-construction of knowledge, and opportunities for mastery.

Theme: Parent and facilitator partnerships

Facilitator and parent partnerships were important in developing parenting skills and encouraging child development. Facilitators who modelled skills were perceived to increase parent confidence (4, 44, 46, 48, 52-57, 62, 75) in contrast, facilitators who directly taught or intervened with parents, undermined parental confidence (4, 52). Facilitator and parent partnerships were characterised by shared decision making and goal setting (4, 47, 53, 56, 75); recognising parental expertise and experiences (4, 55); providing positive feedback on parenting strategies and child development (23, 44, 45, 53, 54, 57); scaffolding playgroup activities and parent-child interaction (44, 57); and providing relevant information (46, 49, 55). These partnership qualities assisted parents in becoming more confident (46), and more aware of child development (51) and facilitated parent-child interaction (57).

Theme: Peer support and co-construction of knowledge

The importance of peer learning and support in enhancing parental confidence was strongly reflected (55, 56, 60) with 23 articles identifying the power of co-constructing knowledge and skills through the interaction between parents and children. Peer modelling was an important component of this, including opportunities for children to learn from other children (21, 48, 50, 55, 58) and parents to learn from other parents (45, 54, 55, 58). Parent interactions within playgroups was perceived to increase parental knowledge, skills and confidence as parents were able to share ideas and solutions and jointly problem solve issues (46-49, 53, 55-58, 62, 69-71). Studies also identified the mutuality and reciprocity of peer support and knowledge in playgroups as both the receiving and provision of support increased parents' confidence in their own parenting skills (47, 56).

Theme: Opportunity for mastery. Providing parents and children with opportunities to practise and master new skills emerged in 18 articles as an element of playgroups that increased confidence. For parents, the opportunity to play and engage with their child increased parent-child interaction and developed new parenting skills (44, 46, 58, 60, 70). Talking with other parents and observing other children in playgroup was also recognised to improve parents' sense of confidence in their parenting skills (55). For children, confidence and skills increased as a result of having opportunities to socialise with other children (21, 44, 52), exposure to a range of developmental play activities (45, 49, 55, 59), engaging in interest and play-based problem solving and having multiple opportunities to practise new skills (48, 54).

Consultation findings

Findings from stakeholders' consultation revealed participants strongly agreed with the findings stating engagement themes and subthemes reflected their experiences and beliefs about attending and/or facilitating a therapeutic or supported playgroup. This is demonstrated by the following clinician and parent quotes;

> *I think that is a great summary, it sounds exactly like what I would say is really important. I would agree with all of that.* (Clinician)
>
> *That is pretty accurate and just what I have said so I think that is good.* (Parent)

2.5 Discussion

Current research suggests therapeutic and supported playgroups have beneficial outcomes for both parents and children (23, 56, 64, 65) confirming findings from other systematic reviews of playgroup literature (9, 10). This scoping review highlights the lack of empirical playgroup research and therefore caution must be taken when interpreting results. However, this review offers a unique perspective, exploring and mapping the 'active ingredients' of supported and therapeutic playgroups, understanding which is key in facilitating evaluative playgroup research (75). Findings indicate successful playgroups require a complex interplay of components to meet the emotional, practical, and informational needs of families confirming playgroups as a complex intervention. Findings also reveal the 'active ingredients' (27) of playgroups found to be beneficial for children who are at risk or have identified developmental delay/disability and their families reflect the core elements of peer support, family-centred practice and self-efficacy theory.

Peer support emerged as one of the key elements of playgroups, distinguishing playgroups most strongly from other models of early intervention. The benefits of social support are well established particularly during the transition to early parenthood (82) and specifically when a child has a disability or delay (83). Social support positively impacts on parental wellbeing (83), motivation, empowerment, parent-child interactions (84) community connectedness and sense of belonging whilst reducing social isolation and loneliness (83-85). This review identified that playgroups foster the development of peer support by enabling families to connect socially and emotionally with similar families, to learn new skills and gain information whilst supporting and sharing their own knowledge and expertise with other families. The desire of parents to connect with others and share their experiences and situation was strongly reflected in broader literature, underpinned by the belief that they understood each other and working to reduce feelings of isolation (83-85). Other studies also found that sharing stories, advice and problem solving in partnership with other parents was an important source of information and learning new skills (84, 85) serving to validate parents' own parenting skills and expertise, increasing parents' self-worth (83, 84). This review highlighted that the core element of peer support is an important factor for families engaging in playgroups and is perceived to optimise outcomes for children and families.

Many of the elements of beneficial playgroups were closely aligned with family-centred practice. This finding is consistent with the fact that family-centred practice is widely recognised as best practice in the field of early intervention services (86-88). Dunst and colleagues' model of family-centred practice comprises of participatory practices, relational practices and staff technical skills and expertise (89). In this review the role of the facilitator emerged as a key aspect of playgroups strongly reflecting Dunst and colleagues' (89) model. Parent and facilitator partnership was frequently reported as important and comprised of shared decision making, information provision, modelling, recognition of parental expertise and active involvement of parents and children within playgroups. The notion of relational and technical skills was reflected with parents valuing qualified, experienced and knowledgeable facilitators who were non-judgmental, approachable, respectful, strengths based and genuinely respected and valued parents and their expertise. Other integral elements of family-centred practice (90-94) that emerged from the findings include the provision of information and the coordination of care with parents attending playgroups to gain information on topics such as child development and parenting skills, and to access agencies and services. The broader early intervention literature indicates the implementation of family-centred practice can be difficult (95-97). One of the noted challenges in running playgroups was adequate facilitator training and expertise highlighting the importance of facilitator training and support in ensuring facilitators have the skills to manage playgroups and engage families in a family-centred approach. Given occupational therapists specialise in early intervention, with expertise in child development and learning, they are well placed to facilitate and effectively run therapeutic and supported playgroups. This family-centred model is particularly suited to occupational therapy interventions targeting vulnerable children and their families.

Playgroup characteristics that increased parental and child self-efficacy and confidence also closely reflected Bandura's (98) predictors of self-efficacy. Playgroups facilitated peer persuasion, mastery and modelling, all key indicators of self-efficacy (98). Mastery is proposed to be the most effective and strongest source of self-efficacy enhancement (99, 100) with playgroup activities and structures embedding elements of mastery. Playgroups also support modelling from facilitators and parents with research suggesting that observing others succeed increases motivation to succeed (101). Social persuasion is most effective in a group context (102-104) with playgroups providing a source of social persuasion with caregivers commonly sharing and problem-solving issues, contributing to increased parental confidence and skills. Given that self-efficacy has a direct influence on behaviour, motivation (105, 106), and ability to cope with new situations (107, 108), it is not surprising that predictors of self-efficacy were identified as integral element of playgroups. These findings do however point to the importance of ensuring these elements are systematically embedded into playgroup models.

This review found limited information clearly defining and describing a supported and/or therapeutic playgroup model. This is significant given describing this model is the first step in the systematic implementation and evaluation of playgroups. Fixsen and colleagues (109) in their implementation of evidence-based program framework identified that defining a treatment program is the first step in implementation. Therefore, while this review has begun the process of identifying the core components of playgroup intervention, there is a clear need for further research to identify and describe a therapeutic playgroup model, so this approach can be implemented, evaluated and replicated across settings, enabling knowledge translation and implementation of evidence-based practice.

Limitations of this review include the lack of available high-quality studies for inclusion which is a common limitation in this field (3, 9). The review revealed many underpowered studies pointing to a need for future research to include meta-analyses approaches to accelerate data aggregation; and collaborations which enable multicentre data collection. Of the 36 articles included only 26 were peer reviewed journal articles many with methodological limitations suggesting caution in the drawing of inferences from these results. There was also wide variation in playgroup characteristics and limited assessment of intervention fidelity, making it difficult to determine hierarchically the most important elements of supported and therapeutic playgroups. Given the paucity of rigorous research it is difficult to draw conclusions in relation to the effectiveness of therapeutic playgroups. Accordingly, it is recommended that future playgroup research employ sensitive outcome measures capable of monitoring progress and assessment of the effectiveness of playgroups in achieving their stated aims.

2.6 Conclusion

The findings of this review indicate the combination of the facilitator, participant and structural characteristics within playgroups increase parent and child engagement and make them beneficial in improving outcomes for children and families. This review highlights the complex nature of playgroups identifying their ‘active ingredients’ which reflect the broader early intervention literature drawing strong parallels to family-centred practice and self-efficacy theory. However, what makes playgroup unique in early intervention service delivery models is the ‘active ingredient’ of peer support and learning. The importance of peer support, particularly for families of children with developmental delays and disabilities, is well recognised but is not always embedded into early intervention. Based on these findings key recommendations for running therapeutic and supported playgroups include employing skilled and experienced facilitators, supporting parents’ access to other families with similar experiences, and providing diverse opportunities for child and parental learning and skill development.

This review has demonstrated that playgroups have lower-level evidence or inconclusive evidence supporting their effectiveness. It has also highlighted the need for clearer descriptions of playgroup interventions. There was limited information describing playgroup interventions, challenging their implementation, evaluation, and replication. This review confirms the need for more robust qualitative and quantitative studies of playgroups that continue to explore the lived experience of participants, further refining understanding of their ‘active ingredients’ and their impact on child development, particularly on populations of children with developmental delays and disabilities. It also identified the need for further clinically based research to ensure complex interventions such as playgroups are evidence-based and improve outcomes for children and families.

2.7 References

1. Hancock K, Lawrence D, Mitrou F, Zarb D, Berthelsen D, Nicholson J, et al. The association between playgroup participation, learning competence and social-emotional wellbeing for children aged four-five years in Australia. Aust J Early Child. 2012;37(2):72-81.
2. Playgroup Australia. Annual Report. Queensland, Australia; 2013.
3. Dadich A, Spooner C. Evaluating playgroups: An examination of issues and options. Aust Community Psychol. 2008;20(1).
4. Cumming T, Wong S. SDN PlayLinks: Dimensions of a Relationships-Based Services. Sydney, Australia: SDN Children's Services Inc; 2008.
5. Centre for Community Child Health. Early Intervention Parenting Project: Improving access to playgroups for all families project: Final report. Melbourne, Victoria: Centre for Community Child Health, Royal Children's Hospital; 2003.
6. Children and Early Childhood Development. Supported Playgroups and Parent Groups: Program guidelines. Melbourne, Victoria: Office for Children and Early Childhood Development; 2008.
7. Commerford J, Robinson E. Supported playgroups for parents and children: The evidence for their benefits. Melbourne, Victoria: Australian Institute of Family Studies; 2016.
8. Department of Education and Early Childhood Development. Practice principles for planning supported playgroups: Supported Playgroups and Parent Groups Initiative (SPPI). Melbourne, Victoria: Office for Children and Portfolio Coordination, Department of Education and Early Childhood Development; 2011.
9. Williams K, Bertheksen D, Nicholson J, Viviani M. Systematic literature review: Research on Supported Playgroups. Brisbane, Australia: Queensland University of Technology; 2015.
10. Lakhani A, Macfarlane K. Playgroups offering health and well-being support for families: A systematic review. Fam Community Health. 2015;38(2):180-94.
11. Brodin J. Diversity of aspects of play in children with profound and multiple disabilities. Early Child Dev Care. 2005;175(2):105-16.
12. Early Childhood Intervention Australia. National guidelines: Best practice in early childhood intervention. Sydney NSW: Early Childhood Intervention Australia; 2016.
13. Fabrizi S. Measuring the effectiveness of occupational therapist–led playgroups in early intervention. Am J Occup Ther. 2016; 70(4_Supplement_1): 1.

14. Fabrizi S, Hubbell K. The role of occupational therapy in promoting playfulness, parent competence, and social participation in early childhood playgroups: A pretest posttest design. J Occup Ther Sch Early Interv. 2017;10(4):346-65.
15. Ginsburg KR. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. Pediatrics. 2007;119(1):182-91.
16. Lynch H, Prellwitz M, Schulze C, Moore A. The state of play in children's occupational therapy: A comparison between Ireland, Sweden and Switzerland. Br J Occup Ther. 2018;81(1):42-50.
17. Leclair LL. Re-examining concepts of occupation and occupation-based models: Occupational therapy and community development. Can J Occup Ther. 2010;77(1):15-21.
18. Chen D, Hanline MF, Friedman CT. From playgroup to preschool: Facilitating early integration experiences. Child Care Health Dev. 1989;15(4):283-95.
19. French G. Valuing community playgroups: Lessons for practice and policy. Dublin, Ireland: The Katharine Howard Foundation; 2005.
20. Jackson D. What is really happening for parents and children in supported playgroups? Every Child. 2011;17(4):32-3.
21. Oke N, Stanley J, Theobald J. The inclusive role of playgroups in Greater Dandenong. Stronger Families and Communities Strategy and the Playgroup Program; 2007.
22. Gray M, McMahon L, Maxwell S, Maugher J, Davies L, Williams S. Families in playgroups. Reading, UK: Pre-School Playgroups Association; 1982.
23. Berthelsen D, Williams K, Abad V, Voge L, Nicholson J. The parents at playgroup research report: Engaging families in supported playgroups. Queensland, Australia: Queensland University of Technology; 2012.
24. Maddison S, Hamilton C. Non-government organisations. In: Hamilton C, Maddison S, editors. Silencing dissent: How the Australian government is controlling public opinion and stifling debate. Crows Nest, NSW: Allen & Unwin; 2007. p. 78-100.
25. Pourliakas A, Sartore G-M, Macvean M, Devine B. Supported playgroups for children from birth to five years. Prepared for The Benevolent Society. Victoria: Parenting Research Centre; 2016.
26. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: The new Medical Research Council guidance. Int J Nurs Stud. 2013;50(5):587-592.

27. Medical Research Council. A framework for the development and evaluation of RCTs for complex interventions to improve health. London: Medical Research Council; 2000.

28. King G, Currie M, Petersen P. Child and parent engagement in the mental health intervention process: A motivational framework. Child Adoles Ment Health. 2014;19(1):2-8.

29. Levac D, Colquhoun H, O'Brien K. Scoping studies: Advancing the methodology. Implement Sci. 2010;5(1):69.

30. Arksey H, O'Malley L. Scoping studies: Towards a methodological framework. Int J Soc Res Methodol. 2005;8(1):19-32.

31. Levac D, Rivard L, Missiuna C. Defining the active ingredients of interactive computer play interventions for children with neuromotor impairments: A scoping review. Res Dev Disabil. 2012;33(1):214-23.

32. Daudt HM, van Mossel C, Scott S. Enhancing the scoping study methodology: A large, inter-professional team's experience with Arksey and O'Malley's framework. BMC Med Res Methodol. 2013;13(1):48.

33. Veritas Health Innovation. Covidence systematic review software. Melbourne, Australia 2015.

34. Liberati A, Altman D, Tetzlaff J, Mulrow C, Gotzsche P, Ioannidis J, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: Explanation and elaboration. Ann Intern Med. 2009;151(4):W-65-W-94.

35. Tong A, Sainsbusy P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. Inter J Qual Health C. 2007;19(6):349–57.

36. Downs S, Black N. The feasibility of creating a checklist for the assessment of the methodological quality both of randomised and non-randomised studies of health care interventions. J Epidemiol Community Health. 1998;52:377-84.

37. Joanna Briggs Institute. The JBI Approach: Levels of Evidence, 2016 [Available from: http://joannabriggs.org/jbi-approach.html].

38. Sohanpal R, Hooper R, Hames R, Priebe S, Taylor S. Reporting participation rates in studies of non-pharmacological interventions for patients with chronic obstructive pulmonary disease: A systematic review. Syst Rev. 2012;1(1):66.

39. Syed M, Nelson SC. Guidelines for establishing reliability when coding narrative data. Emerg Adulthood. 2015;3(6):375-87.

40. Noblit GW, Hare RD. Meta-ethnography: Synthesizing qualitative studies California, United States of America: SAGE; 1988.

41. Dixon-Woods M, Cavers D, Agarwal S, Annandale E, Arthur A, Harvey J, et al. Conducting a critical interpretive synthesis of the literature on access to healthcare by vulnerable groups. BMC Med Res Methodol. 2006;6(1):35.

42. McKay MM, Bannon WM, Jr. Engaging families in child mental health services. Child Adolesc Psychiatr Clin N Am. 2004;13(4):905-21, vii.

43. QSR International Pty Ltd. (2012). NVivo qualitative data analysis Software (Version 11 ed). London, UK. QSR International Pty Ltd.

44. Abad V, Williams KE. Early intervention music therapy: Reporting on a 3-year project to address needs with at-risk families. Music Ther Perspect. 2007;25(1):52-8.

45. ARTD Consultants. Supported playgroups: Evaluation - phase 2. Sydney, NSW: Communities Division of the NSW Department of Community Services; 2008.

46. ARTD Consultants. Evaluation of the Playgroup Program: Final report. Brunswick, Victoria: Department of Families, Housing, Community Services Indigenous Affairs; 2008.

47. Department of Education and Early Childhood Development. Supported Playgroups and Parent Groups Initiative (SPPI) Outcomes Evaluation. Victoria, Australia: Department of Education and Early Childhood Development; 2012.

48. Johnston L, Sullivan K. Evaluation of UnitingCare Burnside’s Orana Supported Playgroups Program. Sydney: Uniting Care Burnside; 2004.

49. Shulver W. Parenting groups as sources of social capital: Their patterns of use and outcomes for Aboriginal and non-Aboriginal mothers of young children (doctoral thesis). Flinders University, School of Social and Policy Studies. 2012.

50. Appl DJ, Fahl-Gooler F, McCollum JA. Inclusive parent-child play groups: How comfortable are parents of children with disabilities in the groups? Infant-Toddler Interv. 1997;7(4):235-49.

51. Appl DJ, Farrar KL, Smith KG. Learning family-centered practices through a parent-child playgroup practicum. Infants Young Child*.* 2012;25(3):232-43.

52. Barros M, Kitson A, Midgley N. A qualitative study of the experience of parents attending a psychoanalytically informed parent–toddler group. Early Child Dev Care. 2008;178(3):273-88.

53. Department of Education and Early Childhood Development. Supported Playgroups and Parent Groups Initiative (SPPI) process evaluation. Melbourne, Australia: Department of Education and Early Childhood Development; 2011.

54. Jackson D. Playgroups as protective environments for refugee children at risk of trauma. Aust J Early Child. 2006;31:1-6.

55. Jackson D. What's really going on?: Parents' views of parent support in three Australian supported playgroups. Aust J Early Child. 2011;36(4):29-37.

56. Jackson D. Creating a place to ‘be’: Unpacking the facilitation role in three supported playgroups in Australia. Eur Early Child Educ. 2013;21(1):77-93.

57. Knaus M, Warren J. A supported playgroup located on school grounds: Developing family relationships within a school environment to support children’s transition to school. NZ Res Early Child Educ J. 2015;18:20- 36.

58. McEwin S, Stagnitti K, Andrews F. The efficacy of co-locating a supported playgroup in a shopping centre. Comm Child Fam Aus. 2015;9(1):69-85.

59. McLean K, Edwards S, Colliver Y, Schaper C. Supported playgroups in schools: What matters for caregivers and their children? Aust J Early Child. 2014;39(4):73-80.

60. Needham M, Jackson D. Stay and play or play and chat: Comparing roles and purposes in case studies of English and Australian supported playgroups. Eur Early Child Educ. 2012;20(2):163-76.

61. New R. African refugee mothers’ experiences of their children’s school readiness, and the role of supported playgroup: School of Psychology and Social Science; 2012.

62. Warr D, Mann R, Forbes D, Turner C. Once you've built some trust: Using playgroups to promote children's health and wellbeing for families from migrant backgrounds. Aust J Early Child. 2013;38(1):41-8.

63. Fabrizi S, Ito M, Winston K. Effect of occupational therapy-led playgroups in early intervention on child playfulness and caregiver responsiveness: A repeated-measures design. Am J Occup Ther. 2016;70(2):1-9.

64. Nicholson JM, Berthelsen D, Abad V, Williams K, Bradley J. Impact of music therapy to promote positive parenting and child development. J Health Psychol. 2008;13(2):226-38.

65. Williams KE, Berthelsen D, Nicholson JM, Walker S, Abad V. The effectiveness of a short-term group music therapy intervention for parents who have a child with a disability. J Music Ther. 2012;49(1):23-44.

66. Knaus M, Warren J, Blaxell R. Smoothing the way: Investigating the role of a supported playgroup located at a school. Aust J Early Child. 2016;41(2):59-68.

67. Hackworth NJ, Berthelsen D, Matthews J, Westrupp EM, Cann W, Ukoumunne OC, et al. Impact of a brief group intervention to enhance parenting and the home learning environment for children aged 6-36 Months: A cluster randomised controlled trial. Prev Sci. 2017;18(3):337-49.

68. Seibold C. Qualitative research and professional practice - Evaluation of the Hy Vong Moi (New Hope) Program. Qual Res J. 2008;8(2):59-71.

69. Byrne JT, Bedford H, Richter KP, Bammer G. They should have them all over the place: A health program for children of illicit drug users. Subst Use Misuse. 2000;35(10):1405.

70. New R, Guilfoyle A, Harman B. Children's school readiness: The experiences of African refugee women in a supported playgroup. Aust J Early Child. 2015;40 (1):55-62.

71. La Rosa A, Guilfoyle A. Maternal humanitarian entrants' "me time": How social support works in a facilitated playgroup. Int J Health Wellness Soc. 2013;3(1):43-56.

72. Archard S, Archard S. Voices of playgroup: Connecting pedagogy and understandings. Early Child Folio. 2016;20(1).

73. Williams KE, Berthelsen D, Viviani M, Nicholson JM. Participation of Australian Aboriginal and Torres Strait Islander families in a parent support programme: Longitudinal associations between playgroup attendance and child, parent and community outcomes. Child Care Health Dev. 2017;43(3):441-50.

74. Nicholson J, Berthelsen D, Williams K, Abad V. National study of an early parenting intervention: Implementation differences on parent and child outcomes. Prev Sci. 2010;11(4):360-70.

75. Williams K, Berthelsen D, Viviani M, Nicholson J. Queensland supported playgroup evaluation: Final Report. Queensland: Queensland Department of Education and Training; 2016.

76. McLean K, Edwards S, Evangelou M, Lambert P. Supported playgroups in schools: Bonding and bridging family knowledge about transition to formal schooling. Camb J Educ. 2018;48(2):157-75.

77. Sanson A, Nicholson J, Ungerer J, Zubrick S, Wilson K, Ainley J, et al. Introducing the Longitudinal Study of Australian Children, LSAC: Discussion Paper no. 1. Melbourne: AIFS; 2002.

78. Fabrizi SE. Measuring the playfulness of children with special needs in occupational therapist led, caregiver-included community playgroups (doctoral thesis): Nova, South Eastern University; 2014.

79. Allen SF. Parents' perceptions of intervention practices in home visiting programs. Infants Young Child. 2007;20(3):266-81.

80. Knaus M, Warren J. 'I love coming to playgroup': How playgroups support and assist in developing family and school relationships. Every Child. 2013;19(3):14-5.

81. Harman B, Guilfoyle A, O’Connor M. Why mothers attend playgroup. Aust J Early Child.2014;39(4):131-7.

82. Vincent C, Ball S, Braun A. Between the estate and the state: Struggling to be a ‘good’ mother. Br J Soc Edu. 2010;31(2):123-38.

83. Kerr SM, McIntosh JB. Coping when a child has a disability: Exploring the impact of parent-to- parent support. Child Care Health Dev. 2000;26(4):309-22.

84. Shilling V, Morris C, Thompson-coon J, Ukoumunne O, Rogers M, Logan S. Peer support for parents of children with chronic disabling conditions: A systematic review of quantitative and qualitative studies. Dev Med Child Neurol. 2013; 55(7); 602-9.

85. Ainbinder JG, Blanchard LW, Singer GH, Sullivan ME, Powers LK, Marquis JG, et al. A qualitative study of Parent to Parent support for parents of children with special needs: Consortium to evaluate Parent to Parent. J Pediatr Psychol. 1998;23(2):99-109.

86. KPMG. Reviewing the evidence on the effectiveness of early childhood intervention. Canberra, ACT: Dept. of Families, Housing, Community Services and Indigenous Affairs; 2011.

87. Moore T, Larkin H. More than my child's disability: A study of family-centred practices and family experiences of Scope early childhood intervention services and supports. Glenroy, Vic: Specialist Services Division, Scope (Vic) Ltd.; 2004. Report No: 0957879989.

88. Rosenbaum P, King S, Law M, King G, Evans J. Family-centred service. Phys Occ Ther Pediatr. 1998;18(1):1-20.

89. Dunst C, Trivette C. Empowerment, effective helpgiving practices and family-centered care. Pediatr Nurs. 1996;22(4):334-7.

90. Carlson G, Armitstead C, Rodger S, Liddle G. Parents' experiences of the provision of community-based family support and therapy services utilizing the strengths approach and natural learning environments. J Appl Res Intellect Disabil. 2010;23(6):560-72.

91. Davis K, Gavidia-Payne S. The impact of child, family, and professional support characteristics on the quality of life in families of young children with disabilities. J Intellect Dev Dis. 2009;34(2):153-62.

92. Klein S, Wynn K, Ray L, Demeriez L, LaBerge P, Pei J, et al. Information sharing during diagnostic assessments: What is relevant for parents? Phys Occup Ther Pediatr. 2011;31(2):120-32.

93. MacKean GL, Thurston WE, Scott CM. Bridging the divide between families and health professionals' perspectives on family-centred care. Health Expect. 2005;8(1):74-85.

94. King S, Rosenbaum P, King G. Parents' perceptions of caregiving: Development and validation of a measure of processes. Dev Med Child Neurol. 1996;38(9):757-72.

95. Dunst C, Trivette C, Hamby D. Meta-analysis of family-centered helpgiving practices research. Ment Retard Dev Disabil Res Rev. 2007;13(4):370-8.

96. Edwards M, Millard P, Praskac LA, Wisniewski PA. Occupational therapy and early intervention: A family-centred approach. Occup Thera Int. 2003;10(4):239-52.

97. Kingsley K, Mailloux Z. Evidence for the effectiveness of different service delivery models in early intervention services. Am J Occup Ther. 2013;67(4):431-6.

98. Bandura A. Self- efficacy: Toward a unifying theory of behavioral change. Psychol Rev. 1977;84(2):191-215.

99. Passmore A. A measure of perceptions of generalised self-efficacy adapted for adolescents. OTJR. 2004;24(4):1-7.

100. Bandura A. Self-efficacy: Towards a unifying theory of behavioural change. Psychol Rev. 1977;84(2):191-215.

101. Bandura A. Self-efficacy in changing societies. Cambridge; New York: Cambridge University Press; 1995.

102. Lorig KR, Holman HR. Self-management education: History, definition, outcomes, and mechanisms. Ann Behav Med. 2003;26(1):1-7.

103. Lorig K. Self-management education: More than a nice extra. Med Care. 2003;41(6):699-701.

104. Jerant A, Friederichs-Fitzwater Mv, Moore M. Patient's perceived barriers to active self-management of chronic conditions. Patient Educ Couns. 2005;57:300-7.

105. McAuley E, Lox C, Duncan T. Long-term maintenance of exercise, self-efficacy, and psychological change in older adults. J Gerontol. 1993;48 (4):218-24.

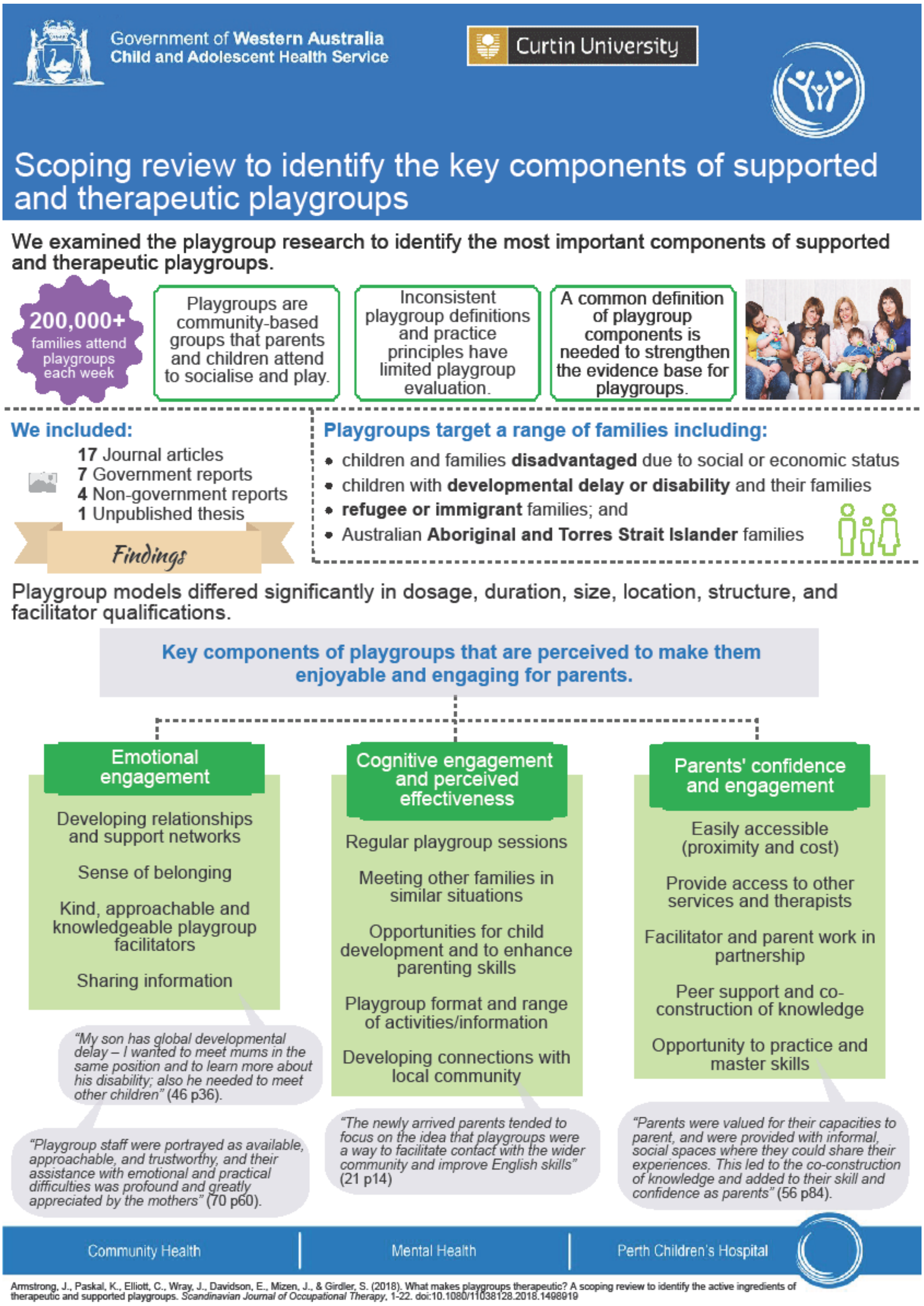
106. Lorig K, Sobel D, Stewart A, Brown B, Bandura A, Ritter P, et al. Evidence suggesting that a chronic disease self-management program can improve health status while reducing hospitalization: A randomised trial. Med Care. 1999;37(1):5-14.

107. Benight C, Bandura A. Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. Behav Res Ther. 2004;42:1129-48.

108. Bourbeau J, Nault D, Dang-Tan T. Self-management and behaviour modification in COPD. Patient Educ Couns. 2004;52:271-7.

109. Fixsen D, Blase K, Metz A, van Dyke M. Statewide implementation of evidence-based programs. Except Child. 2013;79(2):213-30.

2.8 Scoping Review Infographic



Government of **Western Australia**
Child and Adolescent Health Service

Curtin University

Scoping review to identify the key components of supported and therapeutic playgroups

We examined the playgroup research to identify the most important components of supported and therapeutic playgroups.

200,000+ families attend playgroups each week

Playgroups are community-based groups that parents and children attend to socialise and play.

Inconsistent playgroup definitions and practice principles have limited playgroup evaluation.

A common definition of playgroup components is needed to strengthen the evidence base for playgroups.

We included:

17 Journal articles
7 Government reports
4 Non-government reports
1 Unpublished thesis

Playgroups target a range of families including:

- children and families **disadvantaged** due to social or economic status
- children with **developmental delay or disability** and their families
- **refugee or immigrant** families; and
- Australian **Aboriginal and Torres Strait Islander** families

Findings

Playgroup models differed significantly in dosage, duration, size, location, structure, and facilitator qualifications.

Key components of playgroups that are perceived to make them enjoyable and engaging for parents.

Emotional engagement

Developing relationships and support networks

Sense of belonging

Kind, approachable and knowledgeable playgroup facilitators

Sharing information

"My son has global developmental delay – I wanted to meet mums in the same position and to learn more about his disability; also he needed to meet other children" (46 p36).

"Playgroup staff were portrayed as available, approachable, and trustworthy, and their assistance with emotional and practical difficulties was profound and greatly appreciated by the mothers" (70 p60).

Cognitive engagement and perceived effectiveness

Regular playgroup sessions

Meeting other families in similar situations

Opportunities for child development and to enhance parenting skills

Playgroup format and range of activities/information

Developing connections with local community

"The newly arrived parents tended to focus on the idea that playgroups were a way to facilitate contact with the wider community and improve English skills" (21 p14)

Parents' confidence and engagement

Easily accessible (proximity and cost)

Provide access to other services and therapists

Facilitator and parent work in partnership

Peer support and co-construction of knowledge

Opportunity to practice and master skills

"Parents were valued for their capacities to parent, and were provided with informal, social spaces where they could share their experiences. This led to the co-construction of knowledge and added to their skill and confidence as parents" (56 p84).

Community Health | Mental Health | Perth Children's Hospital

Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22. doi:10.1080/11038128.2018.1498919

Chapter 3 Paper II: Defining Therapeutic Playgroups from the Perspectives of Early Intervention Professionals

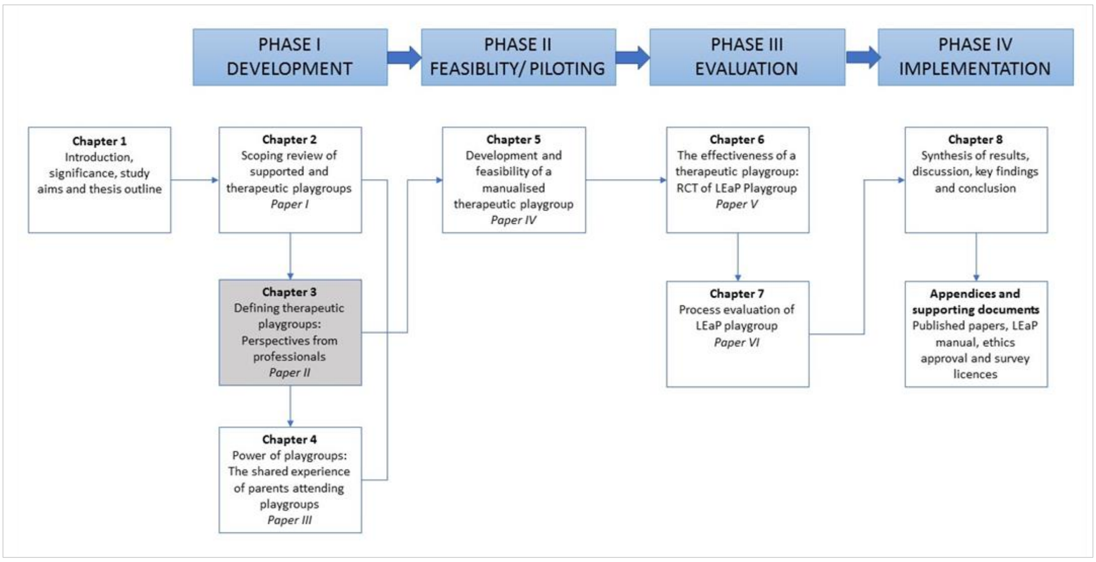
Foreword

Chapter 3 documents the 'active ingredients' of therapeutic playgroups from the perspective of professionals. This chapter aims to contribute to the understanding of playgroup practice principles and definition, building on scoping review findings and gathering qualitative data from professionals with experience facilitating supported and therapeutic playgroups for children with developmental delay and/or disability. In the KTA framework[8] this forms the third and fourth stage of the action cycle (adapting knowledge to local context; and assessing barriers to playgroup use). The findings provide a definition of therapeutic playgroups, highlighting the complex interplay of facilitator, participant and structural characteristics of this intervention model.

Paper II study methodology

Study Aim	Study Design	Sample	Data Collection and Analysis	KTA Framework Stage
To identify the definition and 'active ingredients' of playgroups from perspectives of early intervention professionals	Focus group methodology	40 professionals and community workers with experience facilitating supported or therapeutic playgroups for children with developmental delay and/or disability	Focus groups (8): Open coding	*Action Cycle*: Adapt knowledge to local context; and assess barriers to knowledge use

Paper II mapped to thesis chapters



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PAPER II: DEFINING THERAPEUTIC PLAYGROUPS: KEY PRINCIPLES OF THERAPEUTIC PLAYGROUPS FROM THE PERSPECTIVE OF PROFESSIONALS

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3.1 Abstract

Objective: Therapeutic playgroups provide a unique service for children with developmental delays and disabilities and their families, delivering tailored play-based therapy while facilitating parent support and community connections. Despite the prevalence of playgroups within the disability sector there is a paucity of research defining the key principles of therapeutic playgroups and their perceived benefits. Taking the perspectives of early intervention professionals this study sought to provide a definition of therapeutic playgroups and identify the 'active ingredients' of therapeutic playgroups for children with developmental delays and disabilities.

Method: Focus group methodology was used to gather perspectives of 40 professionals with experience facilitating playgroups for children with developmental delays and disabilities and their families.

Results: Findings highlighted the complex nature of therapeutic playgroups which require an interplay of five 'active ingredients' to be perceived as beneficial: facilitator and participant characteristics; playgroup structural characteristics, information provision, administration and logistical considerations.

Conclusion: Therapeutic playgroups have distinct practice principles that distinguish them from other playgroups and therapeutic models for children with delays and disabilities and their families. This paper provides a definition of therapeutic playgroups, outlining the core practice principles for therapeutic playgroups, an essential step in developing and evaluating the effectiveness of therapeutic playgroups.

Keywords: playgroups, therapeutic playgroups, qualitative research, preschool children, and family functioning and support.

3.2 Introduction

The playgroup model has been extensively used within the Australian context for over 40 years (Playgroup Australia, 2015) with reports estimated over sixty percent of Australian children have attended playgroup (Hancock et al., 2012). The model also widely used across the United Kingdom, Ireland and New Zealand (Williams et al., 2018). It comprises of caregivers and their preschool aged children gathering to engage and socialise in play-based learning, whilst providing an opportunity for caregivers to meet other families, and build social and community connections (Jackson, 2013; McEwin, Stagnitti, & Andrews, 2015; Warr, Mann, Forbes, & Turner, 2013). Playgroups are embedded within the prevention and early intervention framework aiming to promote child learning and development, support parenting skills, and increase families' social and community connections (Department of Education and Early Childhood Development, 2012; Williams, Bertheksen, Nicholson, & Viviani, 2015). Research suggests playgroups are beneficial for children and parents, improving children's social emotional, cognitive and physical development (Sneddon & Haynes, 2003) and enhancing caregivers' social support networks, sense of wellbeing and parenting confidence (Dadich & Spooner, 2008; Jackson, 2013; Knaus & Warren, 2015).

Within the Australian context, there are various playgroup models which can be broadly categorised as community playgroups, supported playgroups and therapeutic playgroups. Community playgroups are a community initiative available to all families, with playgroup responsibilities shared between parents. Supported playgroups target disadvantaged and vulnerable families or communities and are facilitated by a qualified worker responsible for providing relevant information and coordinating activities (McEwin et al., 2015). Therapeutic playgroups are designed for children with multiple vulnerabilities or risk factors and their families, also referred to as intensive supported playgroups; they aim to provide therapeutic information and strategies within the playgroup context (Children and Early Childhood Development, 2008). However, these playgroup definitions are not consistent and distinguishing factors between supported and therapeutic playgroups need further clarification. A recent systematic review and scoping review of supported and therapeutic playgroups concluded the absence of consistent playgroup definitions and practice principles has hindered empirical playgroup research, stating a shared definition and conceptual model of playgroups needs to be developed to advance playgroup evaluation and efficacy (Armstrong et al., 2018; Williams, Berthelsen, Viviani, & Nicholson, 2018).

The role of playgroups in the disability and early intervention sector is receiving increasing attention; with early intervention best practice guidelines identifying playgroups as a valuable ‘soft entry’ point for vulnerable and at risk families accessing early intervention services (Commerford & Robinson, 2016; Early Childhood Intervention Australia, 2016). The importance of intervening early for children at risk of disability is well recognised, yet as few as 10 percent of children with development delays access these services (Rosenberg, Zhang, & Robinson, 2008). Parents of children with autism and other disabilities experience high levels of stress (Baker-Ericzén, Brookman-Frazee, & Stahmer, 2005; Hayes & Watson, 2013) and social isolation (Woodgate, Ateah, & Secco, 2008) particularly early in their diagnostic journey. Playgroups are perceived as less daunting and more engaging than traditional therapeutic services (Jackson, 2013), and uniquely focus on building peer support among parents of children with a disability during early intervention (Armstrong et al., in press) a well-recognised, but inconsistently addressed need within early intervention services (Kerr & McIntosh, 2000). Considering social support serves as a protective factor in reducing stress in parents of children with disability (Boyd, 2002; Weiss, 2002), exploring models that foster social support is integral in the early intervention sector.

In Australia, over 20 percent of all children experience a developmental delay (Australian Government, 2019) and over seven percent of children have a diagnosed disability (Australian Bureau of Statistics, 2012). Given the rising rates of childhood disability, particularly in neurodevelopmental conditions such as autism and developmental disabilities (Houtrow, Larson, Olson, Newacheck, & Halfon, 2014), there is a growing need for effective and relevant early intervention programs. While there is increasing recognition of the role of playgroups in early intervention, there is limited investigation of their efficacy (Dadich & Spooner, 2008; Hancock et al., 2012). This has been attributed to the variability of playgroup models, definitions and practices, and the subsequent absence of clear set of ‘active ingredients’ or core components for implementing playgroups (Commerford & Robinson, 2016; Pourliakas, Sartore, Macvean, & Devine, 2016; Williams et al., 2018). Prior to playgroup implementation and rigorous evaluation, it is important to identify and articulate the ‘active ingredients’ or the core components of playgroups leading to positive outcomes for families and children (Dadich & Spooner, 2008; Hancock et al., 2012). This is recognised as the first step in developing and implementing evidenced based interventions (Craig et al., 2013; Fixsen, Blase, Naoom, & Wallace, 2009).

While a recent scoping review commenced this process, identifying the ‘active ingredients’ of supported and therapeutic playgroups described in the literature to date (Armstrong et al., 2018), given the complexity of the playgroup model further research is needed to examine the core components of this approach (Craig et al., 2013). Following the Medical Research Council’s (Craig et al., 2013) framework for the development of complex interventions this study sought to extend previous research to define key playgroup components and contribute to a more explicit theory of change from the perspectives of professionals with experience facilitating supported and therapeutic playgroups. The goals of the study were to: i) establish a clear definition of therapeutic playgroups; ii) identify the ‘active ingredients’ of therapeutic playgroups for children with developmental delays and disabilities and their families; and iii) identify the perceived benefits of playgroups from the perspective of professionals.

3.3 Methods

Participants

Participants were recruited through community services and a government funded early intervention service, called the Child Development Service. They were required to have a minimum of one-year experience facilitating supported and/or therapeutic playgroups for children at risk of or with identified developmental delays and disabilities. Recruitment flyers were sent via email to playgroup associations and affiliated networks, a paediatric occupational therapist special interest group and to all Child Development Service employees. A total of 40 professionals participated, inclusive of allied health and psychosocial clinicians, a therapy assistant, teachers, an education assistant; and community support workers. Participant’s characteristics are outlined in Table 3.1. All participants were female and had a minimum of 5 years professional experience. Sixty-five percent of participant were employed in the Child Development Services, and occupational therapists made up the largest proportion of professional disciplines (*n*=15). One participant reported being an occupational therapist and teacher; and two participants reported being a speech pathologist and teacher. All participants lived and worked within the Perth metropolitan area, Western Australia.

Table 3.1 Participant characteristics

Participants	n	%
Gender		
Female	40	100
Male	0	0
Profession		
Occupational therapists	15	37.5
Speech pathologists	5	12.5
Physiotherapists	3	7.5
Social workers	3	7.5
Clinical psychologists	2	5
Therapy assistant	1	2.5
Child health nurse	1	2.5
Teacher	3	7.5
Education assistant	1	2.5
Community support workers	3	7.5
Occupational therapist and teacher	2	5
Speech pathologist and teacher	1	2.5
Employment		
Child Development Service (public funded EI service)	26	65
Aboriginal Health Team	2	5
Language Development Centres (Education Department)	2	5
Government School	1	2.5
Private School	2	5
Playgroup Organisation	3	7.5
Non-government EI services	1	2.5
Local government community service	3	7.5

Note: EI=early intervention

Procedure

Focus groups were the primary data collection strategy with one individual interview conducted with a participant who was unable to attend a scheduled focus group. Eight focus groups were held, ranging in size from two to seven participants. Five focus groups comprised of Child Development Service employees only, with the remaining three including professionals from the community and private sector. Discussions were directed by an interview guide, comprising of semi-structured questions aimed at eliciting a definition of therapeutic playgroups and the key participant, facilitator, and intervention characteristics of therapeutic playgroups perceived to benefit children and families (see Table 3.2). The interview guide was underpinned by King and colleagues' conceptual model of client engagement (King, Currie, & Petersen, 2014). This was selected given the emphasis on engagement in achieving client outcomes (McKay & Bannon, 2004), assuming that increased parent and child engagement at playgroup would be associated with optimal benefits. The first author facilitated discussions, with a second researcher recording field notes. Focus groups were held at community centres and the Child Development Service facilities, ranging in duration from 50 minutes to two hours.

Table 3.2 Focus group questions

1. How would you describe a therapeutic playgroup?
    i. How does a therapeutic playgroup differ to a community or supported playgroup?
    ii. How does a therapeutic playgroup differ to a typical therapeutic group?
2. Do you think therapeutic playgroups are worthwhile or beneficial, if so why?
3. Would you recommend therapeutic playgroups to families and why?
4. If you walked into a therapeutic playgroup how could you tell it was successful?
    i. What outcomes and changes would you see in the parent, child or service?
5. What is critical to making a playgroup successful?
    i. Are there key characteristics of the intervention/playgroup itself that make it successful?
    ii. Are there key characteristics of the facilitator that make it successful?
    iii. Are there key characteristics of the families that make it successful?
    iv. Any other aspects?
6. What contributes to playgroups being unsuccessful and/or unenjoyable?
7. What recommendations would you give someone designing a therapeutic playgroup for children with developmental delays and their families?

Study design

A qualitative approach employing focus group methodology obtained the perspectives of professionals with experience facilitating supported or therapeutic playgroups for children at risk of and/or with identified developmental delays or disabilities and their families. Qualitative research is gaining increasing recognition particularly in the field of developmental disability as an approach facilitating a deeper understanding of human experiences and phenomenon that cannot be captured using quantitative approaches (Bölte, 2014). Focus group methodology was chosen, given its utility in gathering multiple opinions simultaneously and its common use in informing health program development and program evaluation (Taylor & Kielhofner, 2006). Focus groups provide the opportunity for participants to validate and contest information within the group, deepening understanding of the topic and clarifying themes (Lane, McKenna, Ryan, & Fleming, 2001). Given the limited empirical research on playgroups, focus group methodology was deemed suitable in identifying and clarifying the 'active ingredients' of therapeutic playgroups from the perspectives of early intervention professionals.

Data analysis

All discussions were audiotaped with consent and transcribed verbatim. Field notes were recorded, transcribed verbatim, and compared to discussion transcriptions. Data management was assisted via NVivo 11 (QSR International Pty Ltd, 2012). Data analysis followed the conventions of open coding as described by Strauss and Corbin (Strauss, 1998), and involved reading the transcripts to identify and code significant statements which formed the raw data for analysis. Emerging codes were compared and contrasted against previous codes, which were then categorised into broader categories that underpinned the subsequent themes (Crotty, 1996). The first author coded data with codes assessed by an independent qualitative research expert to ensure agreement. Procedural rigour was ensured by bracketing presuppositions, member checking, maintaining an audit trail, and collecting data until saturation was reached (Crotty, 1996; Shenton, 2004). Member checking was conducted by sending a summary of themes and playgroup definition to all participants, asking participants to indicate if they agreed or disagreed with findings. A total of six responded, reporting to agree with themes and definition.

3.4 Results

Therapeutic playgroup definition

In defining therapeutic playgroups, professionals consistently highlighted their role in targeting the needs of children with a developmental delay or disability. Therapeutic playgroups provided parents with access to multidisciplinary support and the expertise of qualified facilitators who worked in partnership with parents, providing them with therapeutic information and support relating to child developmental concerns and priorities. Therapeutic playgroups were underpinned by routines and consistent structure, emphasising parent-child relationships whilst facilitating parent peer relationships and supporting parents to learn new skills to support their child's development through play.

Active ingredients of therapeutic playgroups

Participants' definition of therapeutic playgroups highlighted the complexity of therapeutic playgroups with data revealing five core elements; facilitator characteristics, family characteristics, structural components, information provision, and playgroup logistics and administration. These elements and corresponding subthemes are summarised in Table 3.3.

Table 3.3 Active ingredients of therapeutic playgroups identified by professionals

Operational Definition	Quote
Facilitator characteristics Facilitator skills perceived to enhance playgroup engagement	
Relational skills Interpersonal skills and attitude	"Parents love it when you like their child and the child responds well to you, if you can get a connection with the child then the parent trusts you more." (Focus group 2, participant 9, occupational therapist)
Technical skills Qualifications, training and experience	"[A facilitator] that's a bit of a generalist, with knowledge of all areas of child development, particularly parent-child interaction and social emotional development, that's really essential in [therapeutic] playgroups." (Focus group 2, participant 8, speech pathologist)
Partnership skills Joint decision making, collaboration and coaching	"A [therapeutic] playgroup is a family partnership, where it is empowering parents, and it is recognising the parents as a partner and walking beside them in their journey is the way I see it, and I think that is an essence that is underlying the difference between therapeutic playgroups and other types of groups." (Focus group 6, participant 1, teacher)
Teamwork skills Access to multidisciplinary professionals	"It's that ability to work collaboratively with the rest of the team, with [other therapists]; it is as much about being able to work with that [broader] team as it is to be a partner to those parents." (Focus group 6, participant 4, speech pathologist and teacher)

Family characteristics Characteristics of families attending playgroups perceived to impact on playgroup engagement	
Parental expectations Clarifying and meeting parental expectations	"I think there is a structure and expectation that someone else with some expertise will be there to provide some input of a therapeutic kind." (Focus group 2, participant 7, clinical psychologist)
Shared experiences Common experience of parenting a child with a developmental delay or disability	"There was this common recognition within the group that they just knew and people like that they are within a group and they can recognise that another person may be struggling in a certain area and perhaps they have experienced the same sort of things themselves and they make that connection." (Focus group 2, participant 2, child health nurse)
Parent led Parents take a lead in supporting and facilitating children's play	"I think in a therapeutic playgroup there is more of parents taking the lead and parents are valued for that, rather than feeling disempowered." (Interview 1, occupational therapist)
Playgroup structural characteristics Playgroup structural components perceived to define and distinguish playgroups from other models	
Consistent routine Regular playgroup routine repeated each session	"I think part of it is the formatting of the playgroup, so you have the snack time, you have the fruit play, you have some group play, so it very much follows that playgroup routine." (Focus group 4, participant 4, occupational therapist)
Natural learning opportunities Learning opportunities are embedded into naturally occurring activities and routines (e.g. mealtimes and dressing)	"It's much more meaningful, I suppose that is what you also want to be getting out of a therapeutic playgroup versus therapy, functional things that you can work into your day to day." (Focus group 7, participant 1, occupational therapist)
Physical resources Range of indoor and outdoor physical resources and amenities (e.g. kitchen)	"There is a range of things we can work on in a therapeutic playgroup. There is a much bigger range, compared to a therapy group which is targeted to something specific." (Focus group 3, participant 6, speech pathologist and teacher)
Peer modelling and learning Opportunities for modelling between children and parents	"I find the support and advise they [parents] give each other can be quite good." (Focus group 6, participant 1, teacher)
Inclusive Inclusion of siblings and extended family members	"It's nice for their extended family to see kids in a setting as well, extended family don't necessarily spend time at the home." (Focus group 5, participant 1, social worker)
Interagency coordination Collaboration with other services and agencies to facilitate family's transition and/or referrals to relevant services	"It's a nice way to support families and then support their transition to more mainstream playgroups." (Focus group 4, participant 2, social worker)

Information provision	
Content and format of information delivery	"Some weeks we did a more formal talk and the other facilitator would do an activity with the children, the majority of the time it was with the children and [the facilitators] were just joining in conversations and giving advice in a really informal way." (Focus group 2, participant 8, speech pathologist)
Playgroup administration and logistics	
Staff to family ratios, adequate administration time and physical accessibility	"Probably being easy to access so like, you know, on transport links, I think you are more likely to get participation when it is closer to the family as well, in terms of location wise, ease of access, parking I think is really important." (Interview 1, occupational therapist)

Facilitator characteristics

'Facilitator' refers to a playgroup leader running and coordinating playgroup sessions. Playgroups generally had one or two facilitators, this could include a combination of two therapists, a therapist and a therapy assistant, and/or community trained professionals or staff. The importance of consistent facilitators with good relational, technical and partnerships skills, and the ability to work collaboratively within a broader multidisciplinary team and with community agencies was emphasised across groups.

Relational skills

Relational skills refer to the facilitator's interpersonal skills and general attitude towards families and children. Strong relationships between facilitators, and parents and children engendered a comfortable and productive environment, enabling maximum benefit from the playgroup approach:

> *I think it has a lot to do with the relationship that you have with the parent.*
> (Focus group 3, participant 6, speech pathologist and teacher)

Effective relationships depended on the facilitator's capacity to be welcoming and warm, respectful of individual differences and non-judgemental. Effective facilitators listened actively, were empathetic and maintained confidentiality:

> *In terms of the person's skills, they need to be approachable and friendly.*
> (Focus group 3, participant 7, occupational therapist)

An attitude of playfulness, a positive regard for children and the ability to effectively engage with children were key in developing strong relationships between parents and facilitators.

Technical skills

Technical skills refer to a facilitator's qualifications, training, professional skills and experience. A factor differentiating therapeutic playgroups from supported and community playgroups was the expertise and qualifications of the facilitators, with the expectation that facilitators in therapeutic playgroups had a therapeutic background with discipline specific and generic health professional skills and were able to provide information and advice on child development concerns. Specific skills included grading and adapting activities to meet children's developmental needs, embedding parent goals into play opportunities, and increasing parents' knowledge of developmental issues and relevant community organisations. Generic health professional skills included an overall knowledge of child development and understanding of both the psychosocial and biological perspective of child development and delays. Effective facilitators also adopted a strengths-based approach, and effectively managed group dynamics, including negotiating and resolving conflicts within the group:

> *Facilitators have to manage group dynamics so that the other parents remain feeling welcome and that it's still everybody's place.* (Focus group 5, participant 2, speech pathologist)

Managing the multiple competing demands of playgroups required facilitators to have strong behavioural management, time management skills, organisational skills, and flexibility to adapt to changing group needs.

Partnership skills

Partnership skills refer to the facilitator's ability to work in partnership to collaborate with and coach parents to support joint decision making. Facilitators with strong partnership skills fostered collaborative relationships with parents, helping them to recognise their own expertise, and set goals for themselves and their children and supporting their achievement through coaching and modelling:

> *Coaching was so heavily embedded into what [the facilitators] were doing the whole time, everything that was going on was focused on play, but also coaching parents to appreciate that play is the medium through which children learn.* (Focus group 5, participant 4, occupational therapist)

The development of partnerships between therapists and parents was highlighted as a distinguishing feature of therapeutic playgroups.

Teamwork skills

Teamwork skills refer to the facilitator’s ability to work with other professionals and teams to support family’s access to other disciplines as needed. Teamwork, between both co-facilitators of playgroups, and facilitators and other health professionals external to the group, underpinned effective playgroups. Participants felt playgroup facilitators needed access to other disciplines to obtain specialist information and to support referrals to services as needed:

> *If the facilitator is really good at supporting, promoting and bringing the (multidisciplinary) team together it makes a therapeutic playgroup work better.* (Focus group 7, participant 1, occupational therapist)

Family characteristics

Professionals reported there were specific characteristics of families attending playgroups they perceived impacted on playgroup engagement. Professionals described parental expectations, group homogeneity and active parent engagement as integral factors of therapeutic playgroups.

Parental expectations

Clarifying and meeting parental expectations motivated parents’ attendance and engagement in sessions. Professionals reported parents came to playgroup expecting to access personalised information and assistance from a range of health professionals, to meet and develop relationships with other parents and to build their confidence in supporting their child’s development:

> *I think with a therapeutic playgroup parents want to get something out of it in terms of something therapeutic, otherwise they would just go to the community playgroup.* (Focus group 2, participant 8, speech pathologist)

Shared experience

The shared experience of parenting a child with developmental delays or disabilities emerged as an important theme in engendering a sense of belonging in parents and children. Professionals reiterated that families attending therapeutic playgroups often did not feel comfortable attending mainstream community playgroups; feeling ostracised and judged because of their child's differences and by other parents lacking understanding of their child and circumstances.

Therapeutic playgroups provided parents with opportunities to meet and develop relationships with parents in similar situations. Facilitators highlighting similarities between participants, worked towards building a sense of shared experience and feelings of 'sameness', helping parents to feel understood, validated and accepted. This fostered families' sense of belonging, maximising their level of comfort, providing opportunities for social support and reducing parents' sense of isolation:

> *When participants have the same sort of common issue, it helps them participate, attend and be involved, you know, I have a similar problem to your problem and I can identify with that, we are going through the same journey at the same time.* (Focus group 2, participant 2, child health nurse)

In contrast, children and/or parents who were significantly different from other group members, such as children with greater delay or behavioural challenges, were described as struggling to 'fit in', and at times disrupting group dynamics or experiencing the playgroup negatively:

> *I think you would have to be quite careful about putting in one family with a child that is so different to the others; I have seen some parents get quite upset when their child is very, very different.* (Focus group 3, participant 6, speech pathologist and teacher)

Parent led

Inherent to therapeutic playgroups was the leading role parents played. In comparison to traditional therapeutic approaches, playgroups were underpinned by the expectation that parents take responsibility for creating opportunities and supporting their child's play:

> *It's different to a therapy group isn't it, because the parents have a bigger role, we don't need to tell them to work with their child when they come to a playgroup, they know that's what they do.* (Focus group 3, participant 6, speech pathologist and teacher)

Within therapeutic playgroups parents assumed an active role in facilitating their children's play, with the facilitators' role to set up a range of developmentally appropriate activities, providing support and information to parents as needed rather than dictating what activities children should engage in. Therapeutic playgroups required parents to engage with their child, following their lead and support their exploration within the playgroup setting, rather than just overseeing their child's play. Professionals felt this responsibility helped to empower parents and build stronger parent-child relationships.

Playgroup characteristics

Professionals reported the unique structure and content of therapeutic playgroups underpinned their success, distinguishing them from other intervention models. Important structural elements included consistency of routine, naturalistic learning opportunities, physical resources, peer learning and modelling, being inclusive of the whole family and interagency collaboration.

Consistent routine

While therapeutic playgroups were viewed as less prescriptive than traditional therapy, their success was underpinned by consistency in the playgroup routine. The weekly routine generally followed a schedule involving a welcome song, mat time, snack time, activity sessions, free play and a farewell song and activity. Allowing time for parents to socialise and connect with each other, rather than focusing solely on parent-child relationships and child development was also important:

> *You make sure you have an extended tea-time or break time of some description for the parents, and with the idea that parents are facilitated to sit together and enjoy each other's company and interact with each other.* (Focus group 5, participant 5, physiotherapist)

The consistent routine was perceived to benefit both children and parents. It provided children with opportunities to practise new skills whilst preparing them for more formalised learning routines. For parents it provided consistency and predictability, increasing their confidence in participating in group activities.

Natural learning opportunities

Natural learning opportunities refer to using children's everyday activities and routines to learn and develop new skills, for example using dressing to learn manipulation skills or mealtimes to practise language skills. In comparison to traditional therapy models, therapeutic playgroups provided more opportunities to access a wider range of activities and strategies in a naturalistic setting. Natural learning opportunities were embedded throughout the playgroup routine during snack time, activity transitions, dressing, toileting, and unstructured play and socialisation. These learning opportunities allowed facilitators to demonstrate how developmental strategies could be embedded at home and in the community. Observing children across a range of play activities supported the identification of developmental challenges that may have been overlooked in more traditional therapeutic (clinic based) settings, resulting in earlier identification and referral to appropriate disciplines or agencies:

> *The benefits of being in the playgroup is that it is a very different situation to that one-on-one setting with the therapist and it is an opportunity to generalise those skills and often you will see different issues perhaps arise because of the group setting.* (Focus group 7, participant 4, speech pathologist and teacher)

Physical resources

Physical resources including the physical space available for playgroups, the available toys and equipment, and playgroups activities were of importance. Playgroups required access to both indoor and outdoor areas, with outdoor areas supporting the self-regulation and maintenance of attention in children with developmental challenges:

> *Having the physical space, if the child is just not there or they are getting overwhelmed, in a playgroup situation there's usually somewhere they can go and the parent can follow their lead to a quieter place or less challenging place.* (Focus group 4, participant 5, speech pathologist)

Learning opportunities were facilitated by access to developmentally appropriate activities and well-maintained equipment, encouraging children to engage in gross motor and fine motor play, musical play and pretend play. Natural learning opportunities were made possible by access to appropriate facilities including toilets, a kitchen and appropriately sized table and chairs.

Peer modelling and learning

Therapeutic playgroups provided opportunities for modelling and peer learning between both parents and children. Peer learning was integral in therapeutic playgroups, in their bringing together of parents with similar backgrounds, encouraging a sharing of resources, knowledge and parenting strategies. Modelling and peer learning within playgroups were facilitated by the structure of the playgroup routine, the diversity in parents' experiences, the skills of the facilitator and the inclusion of typically developing siblings. Modelling was enhanced when families had a range of abilities and experiences, with parents familiar with the routine able to model these to new families and children. The structure of playgroup sessions, combining whole group activities with opportunities for free play, provided structured and unstructured opportunities for therapists to model to parents, parents to model to other parents, and for children to model new skills to other children:

> *I think that is one difference [between playgroup and] a traditional therapy group, the power of peer pressure, if you like, for the children, like some of the parents say, "Oh he never sits" but by the end of the group they are sitting and sharing and maybe eating some of the fruit, so it is also about those, the role of socialisation probably that playgroups offers that therapy groups have less emphasis on.* (Focus group 4, participant 4, occupational therapist)

Inclusive of the whole family

The inclusive ethos of playgroups, encouraging the attendance of siblings and extended family, made it easier for parents to attend and provided opportunities to educate the child's extended family:

> *Parents wanted to bring grandparents as well as extended family members, so you got to meet them and they could interact in this environment with the child and parent, so that was a really good thing.* (Focus group 5, participant 1, social worker)

Interagency coordination

Distinguishing therapeutic playgroups from other forms of playgroup was their inherent focus on connecting families with community services and increasing families' knowledge and awareness of available community services and resources. This built families' skills and confidence in accessing and/or transitioning to other (mainstream) community groups such as local playgroups and library groups:

> *We are hoping our playgroup is a stepping stone towards a community playgroup, towards developing their confidence, developing their skills, developing their interest in playgroups to see the value of playgroups. So that they can follow that on and have that longer-term involvement in the community.* (Focus group 3, participant 3, physiotherapist)

Information provision

Providing information requested by parents and 'taking their lead' in terms of key topics covered within groups was a key feature of therapeutic playgroups. Participants felt that parents desired evidence-based information relating to child development, play, parent-child interaction and community resources. Key playgroup information topics were reported to include developmental norms, developmental challenges and strategies applicable in the home and community; the importance of play, the range of play options and how to play with their child. This information was perceived to support parents in their priorities and goals for their child:

> *Getting input from the participants, parents and children, as to what they want as well. Like, if they want speakers on certain topics or want a demonstration on a certain thing, so working out what they are interested in.* (Focus group 5, participant 1, social worker)

While participants preferred providing information to families informally and individually through conversations, maintaining the informal essence of the playgroup, structured talks and handouts catered to a range of parent learning styles and provided additional opportunities for informational sharing. Although managing the information provision was primarily the role of facilitators, there was agreement that information should be provided by a range of people including health professionals, other parents, and representatives from external community agencies.

Playgroup logistics and administration

Effectively managing the administrative and logistical aspects of therapeutic playgroup was integral, including staff to family ratios, referrals, selecting families, contingency planning, and playgroup accessibility. There was an inherent assumption that therapeutic playgroups were smaller in numbers than community playgroups, with groups comprising eight to ten families and a minimum of two facilitators. Large groups were perceived as unmanageable, and as increasing the potential to 'miss out' on individualised therapeutic interactions with facilitators. In contrast, groups with too few families impacted negatively on group dynamics, with limited opportunities for peer modelling and support. Playgroups required time from facilitators outside of the sessions, with the need for time allocated to preparation, set-up and pack-up, and following-up with participants:

> *Yes, I am constantly getting phone calls and emails, I feel like sometimes it is a full-time job for what it is. So, the contact hours seem small, however what goes on behind it is really large.* (Focus group 8, participant 2, teacher)

In composing groups, participants considered the similarity in children's developmental levels and family characteristics. Professionals developed contingency plans for dealing with issues that could not be immediately addressed within a playgroup session, including behavioural or mental health issues and crises related to either the child or family. Participants highlighted the need for strategies to exit families from the playgroup if required, linking them with more service options. Finally, playgroups needed to be accessible with minimal cost and centrally located, close to public transport.

Perceived benefits of therapeutic playgroups

Professionals reported they perceived therapeutic playgroups to be beneficial for both children and parents. For children, playgroups enabled the early identification of developmental issues, resulting in timely referral and intervention. Playgroups also encouraged children's socialisation, providing opportunities to learn new functional and developmental skills. Playgroups were perceived to be beneficial in building parents' social supports and networks, facilitating community links and improving parenting skills and confidence. Professionals emphasised the perceived social benefits of playgroups stating meeting other parents with similar experiences reduced isolation and increased social networking, community connections and feeling understood and accepted:

> *So much of what our parents get out of it is the networking and feeling understood by other parents because the children are all similar, they all have needs and all the parents have a similar journey and they say, compared to just a regular playgroup they often feel a little bit on the outer, or misunderstood.* (Focus group 6, participant 4)

Playgroups were reported to provide parents with opportunities to access specialised supports, address their priorities and develop confidence in their parenting skills and implement developmental strategies with their child:

> *We saw heaps of progress in regard to this (parenting skills) because I think we exposed them to techniques managing their (child's) behaviours that are more unique that generic parenting programs.* (Focus group 5, participant 4, speech pathologist and teacher)

Playgroups were also believed to foster connections with local communities by providing information on local services, presentations by community agency speakers and supporting families to transition to community groups, including community playgroups.

3.5 Discussion

Playgroups are widely implemented across the Australian society and increasingly promoted as a 'soft entry model' for children with developmental delays and disability (Dadich & Spooner, 2008; Jackson, 2013). However, research examining playgroups are limited by inconsistent definitions and practice principles, with researchers emphasising the need for explicit definitions and theory of change in order to systematically develop and evaluate this model. While research provides definitions of community and supported playgroup models (Commerford & Robinson, 2016; Cumming & Wong, 2008), this is the first study to distinguish therapeutic playgroups from these models (Armstrong et al., 2018; Williams et al., 2018). It revealed therapeutic playgroups are defined as playgroups targeting the needs of a specific population; typically, families with a child with developmental delays or disabilities. Within a therapeutic playgroup, parents can access multidisciplinary support and the expertise of qualified facilitators who work in partnership with parents to provide therapeutic information and support in relation to child developmental concerns and priorities. Therapeutic playgroups are underpinned by routine and a consistent structure, emphasising parent-child relationships, whilst simultaneously facilitating parental peer relationships and supporting parents to learn new skills to support their child's development through play. This definition extends the previously stated therapeutic playgroup definition (Children and Early Childhood Development, 2008), articulating key facilitator, participant and structural requirements of therapeutic playgroups as well as the target cohort. Although there are similarities to other playgroup models, including a consistent routine, emphasising parent to child and parent to parent relationships, and child play and development, therapeutic playgroups are distinguished by expert facilitators and homogeneity in family characteristics.

These findings demonstrate therapeutic playgroups are a complex intervention, underpinned by specific 'active ingredients' which make them beneficial for children and families. Based on findings, it is suggested therapeutic playgroup are underpinned by the theoretical frameworks of family-centred practice (Dunst & Trivette, 1996), natural learning theory (Dunst, Trivette, Humphries, Raab, & Roper, 2001) and peer support (Shilling et al., 2013). Table 3.4 outlines key principles of these models, corresponding playgroup themes and proposed outcomes.

Table 3.4 Proposed theoretical framework of therapeutic playgroups

	Theoretical framework		
	Family-centred practice *(Dunst & Trivette, 1996)*	**Natural learning theory** *(Dunst et al., 2001)*	**Peer support theory** *(Shilling et al., 2013)*
Finding	*Relational practices* *Technical skills and expertise* *Participatory practices*	*Context based* *Interest based* *Functional based*	*Shared social identity* *Learning from/ supporting others* *Personal growth*
Playgroup themes			
Facilitator characteristics	Relational skills Technical Skills Partnership skills Teamwork skills		
Family characteristics	Parental expectations Parent led		Shared experiences
Playgroup characteristics	Inclusive Interagency collaboration	Consistent routine Natural learning opportunities Physical resources	Peer modelling and learning
Information provision	Content and format of information delivery		
Proposed outcomes			
	Child outcomes Quality of life Parenting self-efficacy Parent-child relationships	Child outcomes	Social support Reduced parenting stress Belonging and acceptance Parent wellbeing

Family-centred practice is considered best practice within early intervention service delivery, being associated with reduced parental stress, improved parent satisfaction and positive child outcomes (Dunst, Trivette, & Hamby, 2007; Kingsley & Mailloux, 2013; Law et al., 2003; Moore & Larkin, 2005). This study demonstrated playgroup facilitators need strong relational, technical and partnership skills to work in collaboration with parents and a broader multidisciplinary team to achieve parents' desired goals and priorities. These reflect the core principles of family-centred practice as outlined by Dunst and Trivette's model (1996) which comprises of technical skills and expertise, participatory practices and relational practices. This link was identified in a recent playgroup scoping review (Armstrong et al., 2018) and a qualitative study into supported playgroups (Jackson, 2013). Both reported the facilitator's adoption of family-centred practice was a core element of playgroups, central to meeting parents' needs and facilitating parents' social relationships and peer support. This study however, revealed a distinction between supported and therapeutic playgroups related to the facilitators technical and partnership skills. While previous research has highlighted playgroup facilitators' should be trained and knowledgeable in relation to child development and relevant community services (Jackson, 2013), this study identified therapeutic playgroup facilitators should hold an allied health qualification supporting the delivery of tailored and specific therapeutic strategies for each child. In contrast to community and supported playgroups, professionals reported parents attending therapeutic playgroups expected to gain child specific knowledge and strategies from allied health clinicians. The need for tailored developmental information for parents of children with developmental delay is well documented, being associated with parent empowerment (Fordham, Gibson, & Bowes, 2012) and satisfaction (Ziviani, Feeney, & Khan, 2011), yet it remains one of the most commonly unmet parent needs in early intervention (Ziviani, Cuskelly, & Feeney, 2010). Further differentiating therapeutic playgroups from supported playgroups, is the expectation that facilitators work collaboratively and in partnership with parents, employing a parent coaching framework in promoting child development and achieving parental goals. This approach further gains support for research demonstrating that parent coaching approaches improve child outcomes (Scales, McEwen, & Murray, 2007), family quality of life (Hume, Bellini, & Pratt, 2005) and parent-child relationships (Oono, Honey, & McConachie, 2013).

The importance of facilitators adopting family-centred practice highlights the need for strong and specific facilitator training in this area. Research reveals that while there is wide recognition that family-centred practice is best practice in early intervention, its implementation is challenged by a significant gap between research and practice (Dunst et al., 2007; Edwards, Millard, Praskac, & Wisniewski, 2003; Kingsley & Mailloux, 2013; Law et al., 2005; Woods, Wilcox, Friedman, & Murch, 2011) and inadequate therapist training and supervision (Litchfield & MacDougall, 2002; Wilkins, Pollock, Rochon, & Law, 2001). Collectively, these findings highlight the importance of training and supervision of therapists facilitating playgroups to adopt family-centred practice.

The structural characteristics of playgroups emerged as an essential factor in playgroup success, facilitating natural learning and distinguishing playgroups from traditional models of group therapy. Findings revealed playgroups have a consistent routine, comprising of structured and unstructured play-based activities, music and singing, snack time and farewell activities, reflecting previous playgroup research (ARTD Consultants, 2008; McEwin et al., 2015). However, this study uniquely revealed the importance of this structure in facilitating natural learning opportunities often unavailable within traditional therapy groups. Natural learning is recognised as best practice within the early intervention literature, and a key component of family-centred practice (Hanft, 2000), and associated with positive child and parent outcomes (Dunst, Bruder, Trivette, & Hamby, 2006). Natural learning practice uses everyday family and community activities and routines as learning opportunities for children and parents, providing a context for children to engage in interest-based activities, with professionals supporting parents in promoting and facilitating their child's engagement in these activities (Dunst et al., 2001; Raab & Dunst, 2004). Natural environments are not restricted to specific places, but draw on a child and families' everyday activities, routines and experiences (Childress, 2004). Findings revealed the playgroup structure provided contextual based learning opportunities for both children and parents. Children freely choose their play, parents supported their children's play and professionals worked informally to support parents' to facilitate children's participation in natural learning opportunities. Similarly to the broader literature, professionals reported working collaboratively with parents to support children in practicing their skills within naturally occurring routines such a snack time, enhancing the ability of families to integrate these approaches more consistently within the home setting (Hanft, 2000). Research demonstrates working within a natural learning framework has beneficial outcomes on parenting confidence, wellbeing and perceived control, and child progress (Dunst et al., 2006) which reflect the perceived benefits of playgroups suggested in this study.

The centrality of peer support to the playgroup model was emphasised in study findings and suggested to enhance parents' sense of belonging and acceptance. Peer support was reportedly fostered by having families with shared experience, peer modelling and learning and the presence of skilled facilitators that highlighted the similarities between families and allocated time for parents to talk, share and connect.

These findings reflect key components of peer support theory (Shilling et al., 2013) including shared social identity and learning from and supporting others, with authors suggesting this will result in increased personal growth. This finding supports previous studies demonstrating playgroups provide an opportunity for families to socialise, develop friendships and connections, share knowledge, and give and receive emotional support, which collectively works towards reducing social isolation, engendering a sense of belonging and increasing parental wellbeing (Jackson, 2013; Lakhani & Macfarlane, 2015; Shulver, 2011; Williams et al., 2018). Given parents of children with disabilities are often more socially isolated than other parents (Boyd, 2002) the importance of facilitating social connection and supports is even more important (Siklos & Kerns, 2006). Parents of children with developmental disabilities experience higher levels of stress and social isolation, often feeling marginalised and misunderstood by the wider community (Solomon, Pistrang, & Barker, 2001; Woodgate et al., 2008) and consequently have a strong desire to meet and connect with other parents with similar experiences (Tracey, Johnston, Papps, & Mahmic, 2018). The shared experience of parenting a child with a disability makes other parents valuable and credible sources of information, enabling parents to feel they belong, are understood and accepted, reducing parental stress and increasing confidence (Solomon et al., 2001; Tracey et al., 2018). Given social support, particularly from peers, is a strong predictor of parenting stress and functioning for parents of children with development disabilities, (Boyd, 2002; Kerr & McIntosh, 2000; Shilling et al., 2013; Tomeny, 2017) there is increasing recognition of the need for therapy models to focus on facilitating parent support. Study findings suggest the playgroup model is therefore unique in the disability sector, given its potential to provide individual therapeutic strategies for parents and children, whilst fostering and enhancing the development of peer relationship and support amongst parents.

Limitations and future research

Despite attempts to recruit a range of professionals from varied service sectors, a high proportion of participants were employed in state funded early intervention services and comprised of occupational therapists. Recruitment was also restricted to Perth metropolitan regional area which limited professionals from rural and remote areas. Although member checking procedures were conducted, only six participants responded. Given these limitations it is recommend further validation of results is required with professionals from across Australia to ensure social acceptability and validity of study findings. It is suggested this could be conducted using surveys or the Delphi Method. This study was also limited to the perspective of 40 professionals and therefore only proposes playgroup principles, given consumer involvement in research is a key component of successful and effective intervention development and evaluation (Barber, Beresford, Boote, Cooper, & Faulkner, 2011; Sanders & Kirby, 2012) it is integral the consumer perspective is also gathered to inform on proposed playgroup practice principles. Nevertheless, adopting the MRC's (Craig et al., 2013) framework for development of complex interventions, study findings are still beneficial in proposing a definition and key practice principles of therapeutic playgroups which are supported by previous literature to contribute towards a more refined definition and practice model of playgroups. This study has therefore started the process of defining therapeutic playgroups, but further research is recommended to extend findings and identify core playgroups principles from the perspectives of parents and families who have experience attending therapeutic playgroups.

The authors have no conflict of interest to declare. Ethical approval for this study was obtained from Perth Children's Hospital Human Research Ethics Committee (2015181) and Curtin University Human Research Ethics Committee (HR228/2015) and all procedures were performed in accordance with the 1964 Helsinki declaration as amended. Informed consent was required from all participants.

Author contributions

JA: designed and executed study, collected data and assisted in analysing data, and wrote the manuscript. CE: collaborated in study design, participant recruitment, and editing the manuscript. JW, ED and JM: collaborated in participant recruitment, writing and editing the manuscript. SG: collaborated in study design, assisted in data analysis and collaborated in writing and editing the manuscript.

3.6 References

Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22. doi:10.1080/11038128.2018.1498919

ARTD Consultants. (2008). *Supported playgroups: Evaluation - phase 2*. Sydney, NSW: Communities Division of the NSW Department of Community Services.

Australian Bureau of Statistics. (2012). Children with a disability. Retrieved from https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features30Jun+2012#Children

Australian Government. (2019). *Australian Early Development Census national report 2018*. Canberra, Australia: Commonwealth of Australia.

Baker-Ericzén, M. J., Brookman-Frazee, L., & Stahmer, A. (2005). Stress levels and adaptability in parents of toddlers with and without autism spectrum disorders. *Research and Practice for Persons with Severe Disabilities, 30*(4), 194-204. doi:10.2511/rpsd.30.4.194

Barber, R., Beresford, P., Boote, J., Cooper, C., & Faulkner, A. (2011). Evaluating the impact of service user involvement on research: A prospective case study. *International Journal of Consumer Studies, 35*(6), 609-615. doi:10.1111/j.1470-6431.2011.01017.x

Bölte, S. (2014). The power of words: Is qualitative research as important as quantitative research in the study of autism? *Autism, 18*(2), 67-68. doi:10.1177/1362361313517367

Boyd, B. A. (2002). Examining the relationship between stress and lack of social support in mothers of children with autism. *Focus on Autism and Other Developmental Disabilities, 17*(4), 208-215. doi:10.1177/10883576020170040301

Children and Early Childhood Development. (2008). *Supported playgroups and parent groups: Program guidelines*. Melbourne, Victoria: Office for Children and Early Childhood Development, Victorian Government Department of Education and Early Childhood Development.

Childress, D. C. (2004). Special instruction and natural environments: Best practices in early intervention. *Infants and Young Children, 17*(2), 162-170.

Commerford, J., & Robinson, E. (2016). *Supported playgroups for parents and children: The evidence for their benefits*. Melbourne, Victoria: Australian Institute of Family Studies.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2013). Developing and evaluating complex interventions: The new Medical Research Council guidance. *International Journal of Nursing Studies, 50*(5), 587-592. doi:10.1016/j.ijnurstu.2012.09.010

Crotty, M. (1996). *Phenomenology and nursing research*. South Melbourne, Australia: Churchill Livingston.

Cumming, T., & Wong, S. (2008). *SDN PlayLinks: Dimensions of a relationships-based service*. Sydney: SDN Children's Services Inc.

Dadich, A., & Spooner, C. (2008). Evaluating playgroups: An examination of issues and options. *The Australian Community Psychologist, 20*(1), 95-104.

Department of Education and Early Childhood Development. (2012). *Supported Playgroups and Parent Groups Initiative (SPPI) Outcomes Evaluation*. Victoria: Department of Education and Early Childhood Development.

Dunst, C., Bruder, M., Trivette, C., & Hamby, D. (2006). Everyday activity settings, natural learning environments, and early intervention practices. *Journal of Policy and Practice in Intellectual Disabilities, 3*(1), 3-10. doi:10.1111/j.1741-1130.2006.00047.x

Dunst, C., & Trivette, C. (1996). Empowerment, effective helpgiving practices and family-centered care. *Pediatric Nursing, 22*(4), 334-337.

Dunst, C., Trivette, C., & Hamby, D. (2007). Meta-analysis of family-centered helpgiving practices research. *Mental Retardation and Developmental Disabilities Research Reviews, 13*(4), 370-378.

Dunst, C., Trivette, C., Humphries, T., Raab, M., & Roper, N. (2001). Contrasting approaches to natural learning environment interventions. *Infants and Young Children, 14*(2), 48-63.

Early Childhood Intervention Australia. (2016). *National guidelines: Best practice in early childhood intervention*. Sydney NSW: Early Childhood Intervention Australia.

Edwards, M., Millard, P., Praskac, L. A., & Wisniewski, P. A. (2003). Occupational therapy and early intervention: A family-centred approach. *Occupational Therapy International, 10*(4), 239-252.

Fixsen, D., Blase, K., Naoom, S., & Wallace, F. (2009). Core implementation components. *Research on Social Work Practice, 19*(5), 531-540. doi:10.1177/1049731509335549

Fordham, L., Gibson, F., & Bowes, J. (2012). Information and professional support: Key factors in the provision of family-centred early childhood intervention services. *Child: Care, Health and Development, 38*(5), 647-653. doi: 10.1111/j.1365-2214.2011.01324.x

Hancock, K., Lawrence, D., Mitrou, F., Zarb, D., Berthelsen, D., Nicholson, J., & Zubrick, S. (2012). The association between playgroup participation, learning competence and social-emotional wellbeing for children aged four-five years in Australia. *Australasian Journal of Early Childhood, 37*(2), 72-81.

Hanft, B. (2000). Therapy in natural environments: The means or end goal for early intervention? *Infants and Young Children, 12*(4), 1-13.

Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism and Developmental Disorders, 43*(3), 629-642. doi: 10.1007/s10803-012-1604-y

Houtrow, A. J., Larson, K., Olson, L. M., Newacheck, P. W., & Halfon, N. (2014). Changing trends of childhood disability, 2001–2011. *Pediatrics*. doi:10.1542/peds.2014-0594

Hume, K., Bellini, S., & Pratt, C. (2005). The usage and perceived outcomes of early intervention and early childhood programs for young children with autism spectrum disorder. *Topics in Early Childhood Special Education, 25*(4), 195-207.

Jackson, D. (2013). Creating a place to 'be': Unpacking the facilitation role in three supported playgroups in Australia. *European Early Childhood Education Research Journal, 21*(1), 77-93. doi:10.1080/1350293X.2012.760345

Kerr, S. M., & McIntosh, J. B. (2000). Coping when a child has a disability: Exploring the impact of parent-to-parent support. *Child: Care, Health and Development, 26*(4), 309-322. doi:10.1046/j.1365-2214.2000.00149.x

King, G., Currie, M., & Petersen, P. (2014). Child and parent engagement in the mental health intervention process: A motivational framework. *Child and Adolescent Mental Health, 19*(1), 2-8. doi:10.1111/camh.12015

Kingsley, K., & Mailloux, Z. (2013). Evidence for the effectiveness of different service delivery models in early intervention services. *American Journal of Occupational Therapy, 67*(4), 431-436. doi:10.5014/ajot.2013.006171

Knaus, M., & Warren, J. (2015). A supported playgroup located on school grounds: Developing family relationships within a school environment to support children's transition to school. *New Zealand Research in Early Childhood Education Journal, 18*, 20- 36.

Lakhani, A., & Macfarlane, K. (2015). Playgroups offering health and well-being support for families: A systematic review. *Family and Community Health, 38*(2), 180-194. doi:10.1097/fch.0000000000000070

Lane, P., McKenna, H., Ryan, A., & Fleming, P. (2001). Focus group methodology. *Nurse Researcher, 8*(3), 45-59.

Law, M., Hanna, S., King, G., Hurley, P., King, S., Kertoy, M., & Rosenbaum, P. (2003). Factors affecting family-centred service delivery for children with disabilities. *Child: Care, Health and Development, 29*(5), 357-366.

Law, M., Teplicky, R., King, S., King, G., Kertoy, M., Moning, T., . . . Burke-Gaffney, J. (2005). Family-centred service: Moving ideas into practice. *Child: Care, Health and Development, 31*(6), 633-642. doi:10.1111/j.1365-2214.2005.00568.x

Litchfield, R., & MacDougall, C. (2002). Professional issues for physiotherapists in family-centred and community-based settings. *Australian Journal of Physiotherapy, 48*(2), 105-112. doi: 10.1016/S0004-9514(14)60204-X

McEwin, S., Stagnitti, K., & Andrews, F. (2015). The efficacy of co-locating a supported playgroup in a shopping centre. *Communities, Children and Families Australia, 9*(1), 69-85.

McKay, M. M., & Bannon, W. M., Jr. (2004). Engaging families in child mental health services. *Child and Adolescent Psychiatric Clinics of North America, 13*(4), 905-921.

Moore, T. G., & Larkin, H. (2005). *More than my child's disability: A study of family-centred practices and family experiences of Scope early childhood intervention services and supports* (0957879989). Glenroy, Vic. Scope. Retrieved from http://dro.deakin.edu.au/view/DU:30010364

Oono, I. P., Honey, E. J., & McConachie, H. (2013). Parent-mediated early intervention for young children with autism spectrum disorders (ASD). *Cochrane Database of Systematic Reviews, 4*, CD009774. doi: 10.1002/14651858.CD009774

Playgroup Australia. (2015). *Annual Report 2015*. Queensland, Australia: Playgroup Australia Limited.

Pourliakas, A., Sartore, G.-M., Macvean, M., & Devine, B. (2016). *Supported playgroups for children from birth to five years*. Victoria, Australia: Parenting Resource Centre prepared for The Benevolent Society.

QSR International Pty Ltd. (2012). NVivo qualitative data analysis Software (Version 11 ed). London, UK. QSR International Pty Ltd.

Raab, M., & Dunst, C. (2004). Early intervention practitioner approaches to natural environment interventions. *Journal of Early Intervention, 27*(1), 15-26.

Rosenberg, S. A., Zhang, D., & Robinson, C. C. (2008). Prevalence of developmental delays and participation in early intervention services for young children. *Pediatrics, 121*(6), e1503-1509. doi: 10.1542/peds.2007-1680

Sanders, M. R., & Kirby, J. N. (2012). Consumer engagement and the development, evaluation, and dissemination of evidence-based parenting programs. *Behavioral Therapy, 43*(2), 236-250. doi:10.1016/j.beth.2011.01.005

Scales, L. H., McEwen, I. R., & Murray, C. (2007). Parents' perceived benefits of physical therapists' direct intervention compared with parental instruction in early intervention. *Pediatric Physical Therapy, 19*(3), 196-202.

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*(2), 63-75.

Shilling, V., Morris, C., Thompson-coon, J., Ukoumunne, O., Rogers, M., & Logan, S. (2013). Peer support for parents of children with chronic disabling conditions: A systematic review of quantitative and qualitative studies. *Developmental Medicine and Child Neurology, 55(7),* 602-609.

Shulver, W. (2011). Parenting groups as sources of social capital: Their pattern of use and outcomes for Aboriginal and non-Aboriginal mothers of young children (doctoral dissertation). Flinders University, Adelaide, South Australia. Retrieved from http://theses.flinders.edu.au/public/adt-SFU20111101.205019/

Siklos, S., & Kerns, K. (2006). Assessing need for social support in parents of children with autism and Down syndrome. *Journal of Autism and Developmental Disorders, 36*(7), 921-933. doi:10.1007/s10803-006-0129-7

Sneddon, J., & Haynes, K. (2003). *Early intervention parenting project: Improving access to playgroups for all families project*. Melbourne, Victoria: Royal Children's Hospital: Centre for Community Child Health. Retrieved from: http://www.playgroup.org.au/files/Early%20Intervention%20Parenting%20Project%20Report.pdf

Solomon, M., Pistrang, N., & Barker, C. (2001). The benefits of mutual support groups for parents of children with disabilities. *American Journal of Community Psychology, 29*(1), 113-132. doi:10.1023/A:1005253514140

Strauss, A. L. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed). Thousand Oaks: Sage Publications.

Taylor, R., & Kielhofner, G. (2006). Collecting data. In G. Kielhofner (Ed.), *Research in occupational therapy: Methods of inquiry for enhancing practice* (pp. 530-547). Philadelphia: F. A. Davis.

Tomeny, T. S. (2017). Parenting stress as an indirect pathway to mental health concerns among mothers of children with autism spectrum disorder. *Autism, 21*(7), 907-911. doi:10.1177/1362361316655322

Tracey, D., Johnston, C., Papps, F. A., & Mahmic, S. (2018). How do parents acquire information to support their child with a disability and navigate individualised funding schemes? *Journal of Research in Special Educational Needs, 18*(1), 25-35. doi:10.1111/1471-3802.12390

Warr, D., Mann, R., Forbes, D., & Turner, C. (2013). Once you've built some trust: Using playgroups to promote children's health and wellbeing for families from migrant backgrounds. *Australasian Journal of Early Childhood, 38*(1), 41-48.

Weiss, M. J. (2002). Hardiness and social support as predictors of stress in mothers of typical children, children with autism, and children with mental retardation. *Autism, 6*(1), 115-130. doi:10.1177/1362361302006001009

Wilkins, S., Pollock, N., Rochon, S., & Law, M. (2001). Implementing client-centred practice: Why is it so difficult to do? *Canadian Journal of Occupational Therapy, 68*(2), 70-79.

Williams, K., Bertheksen, D., Nicholson, J., & Viviani, M. (2015). *Systematic literature review: Research on supported playgroups*. Brisbane, Australia: Queensland University of Technology. Retrieved from: http://eprints.qut.edu.au/91439

Williams, K., Berthelsen, D., Viviani, M., & Nicholson, J. (2018). Facilitated parent-child groups as family support: A systematic literature review of supported playgroup studies. *Journal of Child and Family Studies, 27*(8), 2367-2383. doi:10.1007/s10826-018-1084-6

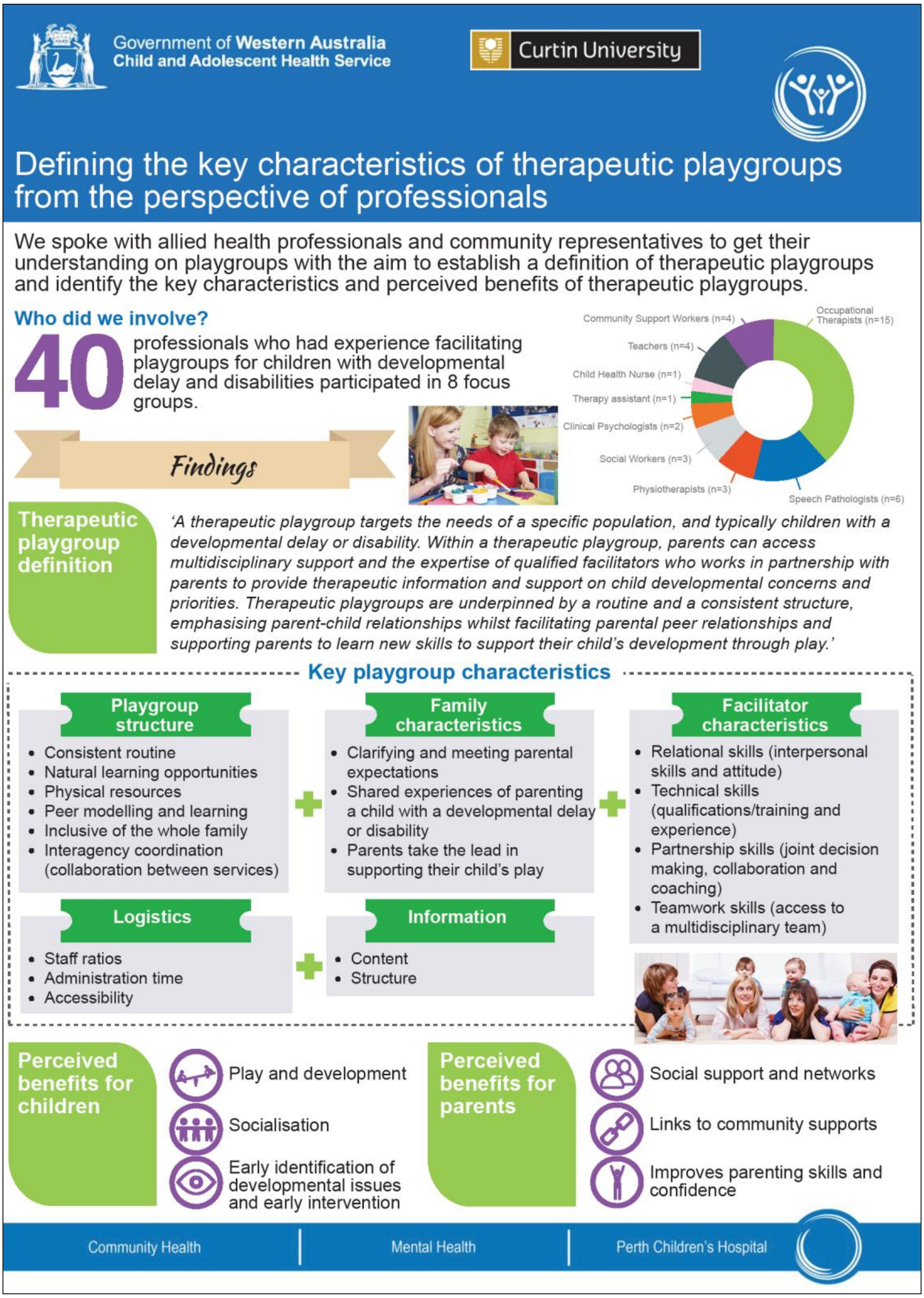
Woodgate, R. L., Ateah, C., & Secco, L. (2008). Living in a world of our own: The experience of parents who have a child with autism. *Qualitative Health Research, 18*(8), 1075-1083. doi:10.1177/1049732308320112

Woods, J. J., Wilcox, M. J., Friedman, M., & Murch, T. (2011). Collaborative consultation in natural environments: Strategies to enhance family-centered supports and services. *Language, Speech and Hearing Services in the Schools, 42*(3), 379-392. doi:10.1044/0161-1461(2011/10-0016)

Ziviani, J., Cuskelly, M., & Feeney, R. (2010). Parent satisfaction with early intervention services for children with physical disabilities: Internal consistency of the European Parent Satisfaction Scale about early intervention. *Infants and Young Children, 23*(3), 184-194.

Ziviani, J., Feeney, R., & Khan, A. (2011). Early intervention services for children with physical disability: Parents' perceptions of family-centeredness and service satisfaction. *Infants and Young Children, 24*(4), 364-382. doi:10.1097/IYC.0b013e31822a6b77

3.7 Defining Therapeutic Playgroups Infographic



Government of **Western Australia**
Child and Adolescent Health Service

Curtin University

Defining the key characteristics of therapeutic playgroups from the perspective of professionals

We spoke with allied health professionals and community representatives to get their understanding on playgroups with the aim to establish a definition of therapeutic playgroups and identify the key characteristics and perceived benefits of therapeutic playgroups.

Who did we involve?

40 professionals who had experience facilitating playgroups for children with developmental delay and disabilities participated in 8 focus groups.

Community Support Workers (n=4)
Occupational Therapists (n=15)
Teachers (n=4)
Child Health Nurse (n=1)
Therapy assistant (n=1)
Clinical Psychologists (n=2)
Social Workers (n=3)
Physiotherapists (n=3)
Speech Pathologists (n=6)

Findings

Therapeutic playgroup definition

'A therapeutic playgroup targets the needs of a specific population, and typically children with a developmental delay or disability. Within a therapeutic playgroup, parents can access multidisciplinary support and the expertise of qualified facilitators who works in partnership with parents to provide therapeutic information and support on child developmental concerns and priorities. Therapeutic playgroups are underpinned by a routine and a consistent structure, emphasising parent-child relationships whilst facilitating parental peer relationships and supporting parents to learn new skills to support their child's development through play.'

Key playgroup characteristics

Playgroup structure

- Consistent routine
- Natural learning opportunities
- Physical resources
- Peer modelling and learning
- Inclusive of the whole family
- Interagency coordination (collaboration between services)

+

Family characteristics

- Clarifying and meeting parental expectations
- Shared experiences of parenting a child with a developmental delay or disability
- Parents take the lead in supporting their child's play

+

Facilitator characteristics

- Relational skills (interpersonal skills and attitude)
- Technical skills (qualifications/training and experience)
- Partnership skills (joint decision making, collaboration and coaching)
- Teamwork skills (access to a multidisciplinary team)

Logistics

- Staff ratios
- Administration time
- Accessibility

+

Information

- Content
- Structure

Perceived benefits for children

- Play and development
- Socialisation
- Early identification of developmental issues and early intervention

Perceived benefits for parents

- Social support and networks
- Links to community supports
- Improves parenting skills and confidence

Community Health | Mental Health | Perth Children's Hospital

Chapter 4 Paper III: Consumers Perspectives of Key Components of Therapeutic and Supported Playgroups

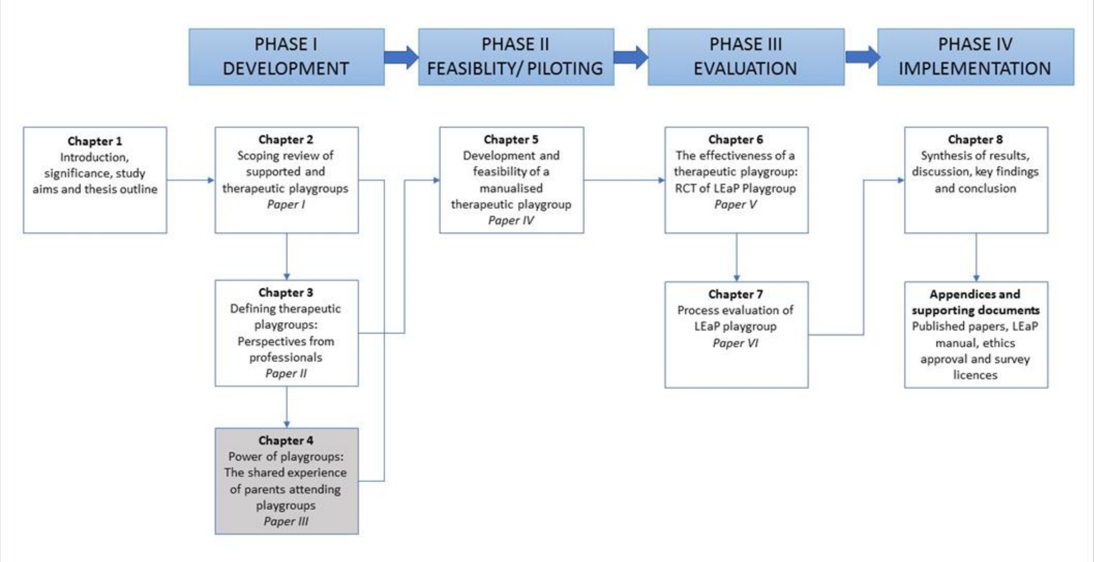
Foreword

Chapter 4 describes a qualitative study that explored the experiences of parents of children with developmental delay and/or disability attending therapeutic or supported playgroups. This study aimed to identify key playgroup components that increased parental engagement and perceived effectiveness in order to understand the 'active ingredients' of playgroups from the perspective of consumers. This is the final chapter to consolidate researcher understanding of playgroup practice principles and continued to highlight the importance of parental peer support and family-centred practice within the playgroup model. In the KTA framework[8] this forms the third and fourth stage of the action cycle (adapting knowledge to local context; and assessing barriers to playgroup use).

Paper III study methodology

Study Aim	Study Design	Sample	Data Collection and Analysis	KTA Framework Stage
To identify the 'active ingredients' of playgroups from the perspective of parents	Interpretive phenomenology	23 parents of children with developmental delay and/or disability with experience attending a supported or therapeutic playgroup	Focus groups (3) (n=17) Interviews (n=7) Colazzi's (1978) method of qualitative data analysis	*Action Cycle*: Adapt knowledge to local context; and assess barriers to knowledge use

Paper III mapped to thesis chapters



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PAPER III: THE POWER OF PLAYGROUPS: KEY COMPONENTS OF SUPPORTED AND THERAPEUTIC PLAYGROUPS FROM THE PERSPECTIVE OF PARENTS

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4.1 Abstract

Introduction: Playgroups are community-based programs for children and families aiming to improve child outcomes, enhance family and community networks and increase parenting capacity. Despite the prevalence of playgroups in Australian communities there is a lack of research clearly articulating the key components of playgroups, specifically from the perspective of parents attending these groups. This study aimed to identify the key components of supported and therapeutic playgroups impacting on perceived effectiveness from the perspective of parents with a child with a developmental delay and/or disability.

Methods: This study explored the experiences of twenty-three parents attending supported or therapeutic playgroups using a qualitative interpretive phemenological approach. Data was collected through three focus groups and seven individual interviews and analysed using Colaizzi's (1978) qualitative method of data analysis.

Results: Findings indicated the playgroup components that most strongly impacted on perceived effectiveness were feeling accepted; providing opportunities for child development, socialisation and enjoyment; and receiving relevant information. Findings reinforced the importance of family centred practice and facilitating peer support for families of children with developmental delay and/or disability.

Conclusion: Supported and therapeutic playgroups emerged as a valuable model for parents of children with developmental delays and/or disabilities but require an interplay of specific facilitator, parent and child characteristics to be effective. This study contributes to the understanding of key components of successful supported and therapeutic playgroups models, highlighting the importance of engaging consumers in developing evidence-based meaningful interventions for children with developmental delay and/or disabilities and their families.

Keywords: developmental disabilities, early intervention, play and playthings, qualitative research and occupational therapy research.

4.2 Introduction

Playgroups are informal community-based groups that are attended by over a third of Australian preschool aged children and their parents (Gregory, Harman-Smith, Sincovich, Wilson, & Brinkman, 2016), promoting child development, parenting capacity and community connections (Williams, Berthelsen, Viviani, & Nicholson, 2018). Playgroup models vary comprising of community playgroups, supported playgroups and therapeutic playgroups. While community playgroups are universal parent led groups held in local communities, supported playgroups are led by paid facilitators and target vulnerable and at-risk families and/or communities (Commerford & Robinson, 2016). Therapeutic playgroups are facilitated by qualified professionals and target families and children with specific risk factors or identified developmental delays and/or disabilities, tailoring support and information to children's needs (Armstrong et al., 2019). However, definitions are inconsistent (Williams et al., 2018) with some researchers describing therapeutic playgroups as intensive supported playgroups, where therapeutic content is provided within a supported playgroup structure (Lakhani & Macfarlane, 2015). Therefore, while some playgroups might identify as a 'supported playgroup' others consider them a 'therapeutic playgroup,' underpinning the challenge of comparing these approaches.

The playgroup model is particularly relevant in a context characterised by an increasing population of young children (Australian Bureau of Statistics, 2018), high rates of developmental vulnerability (Australian Government, 2019), increasing focus on financial accountability and the requirement for evidence-based and value driven funding models (Houtrow, Larson, Olson, Newacheck, & Halfon, 2014). Recognised as a 'soft entry' point for vulnerable families engaging in early intervention services (Jackson, 2013) and achieving economies of scale given their group nature, playgroups are emerging as a model of preference within the disability sector. However, despite the wide implementation and interest in playgroups, particularly for children with developmental delays, the absence of an available 'blue print' with a clear playgroup definition and practice principles has impeded evaluation research and evidenced-based practice (Armstrong et al., 2018).

Considering playgroups aim to improve parent, child and community outcomes (Hancock et al., 2015; Williams et al., 2018), and are influenced by contextual, family and facilitator factors (Armstrong et al., 2018) they can be defined as a complex intervention (Craig et al., 2008). Therefore, research needs to systemically identify key components of playgroups, specifically from the perspective of participants (Armstrong et al., 2018). Consumer involvement in health research and development improves program relevance and outcomes, and enhances research translation (Mathie et al., 2014). Involving parents in identifying the key components of playgroups contributes to our understanding of playgroup practice principles which are integral in ensuring their effectiveness and relevance to families. Previous research has explored parents' experiences of attending supported playgroups (Jackson, 2011, 2013), but this was limited to supported playgroups and involved families with broad risk factors, such as culturally and linguistically diverse. The perspectives of parents of children with developmental delay and/or disability attending therapeutic playgroups or attending supported playgroups with supported playgroups has not yet been comprehensively explored.

In line with the Medical Research Council's framework for developing complex interventions (Craig et al., 2008) this study builds on earlier work by the authors that commenced with identifying the key components of therapeutic playgroups from literature and the perspective of professionals (Armstrong et al., 2019; Armstrong et al., 2018). This paper forms the final, and arguably most significant component of this work, gathering the perspective of parents as to what they considered the most important components of playgroups for children with developmental delay and/or disability.

The study aimed to identify the key components of effective playgroups from the perspective of parents with experience attending supported or therapeutic playgroups with their child with a developmental delay and/or disability. It is anticipated research findings will contribute to a definition and articulation of the practice principles of supported and therapeutic playgroups, providing a framework to underpin playgroups that meets the needs of children and families. For the purposes of this study 'effective' playgroups were conceptualised as playgroups that parents perceived as enjoyable, engaging and/or beneficial in meeting their needs. Due to the inconsistent definitions that distinguish supported and therapeutic playgroup models, it was anticipated that focusing on playgroups that identified as either 'therapeutic' or 'supported' was unreliable and may exclude relevant families. For this reason, this study focused on supported and therapeutic playgroups for children with developmental delays and/or disabilities.

4.3 Methods

An interpretive phenomenological framework (Peat, Rodriguez, & Smith, 2019) examined parents' experience of attending a supported or therapeutic playgroup with their child at risk of or with an established developmental delay or disability, identifying key components of supported and therapeutic playgroups from their perspective.

Design

Interpretive phenomenological analysis (IPA) explored parents’ experiences of supported and therapeutic playgroups, identifying shared meanings and similarities in their experiences (Lopez & Willis, 2004). Discussions focused on both positive and negative playgroup experiences, with the goal of informing the key components underpinning parents’ perceptions of playgroups as beneficial and effective in meeting their needs. Given this study was the third undertaken in this line of research by the research team aiming to define therapeutic playgroups, it considered impossible to entirely bracket previous research knowledge and presumptions (Crotty, 1996). However, bracketing is not recommended in IPA, instead researcher knowledge, expertise and presumptions should be made explicit and considered valuable in contributing to understanding (Lopez & Willis, 2004).

Purposeful sampling recruited 23 parents of children with developmental delay and/or disability through three early intervention centres and nine community agencies running supported and/or therapeutic playgroups in metropolitan Perth, Western Australia. Recruitment flyers were emailed to early intervention centres and community agencies to be passed onto families and displayed in waiting rooms. Participants were eligible if they had attended a supported or therapeutic playgroup with their child that had a developmental delay and/or disability. Interested participants contacted the research team, were provided with an information sheet and consent form and were required to complete the consent form prior to participating. Participants of children with a disability reported diagnoses included global developmental delay, Down syndrome and autism spectrum disorder. Other parents reported having a child undergoing diagnosis for autism spectrum disorder and/or developmental delay or were classified as vulnerable or at risk for developmental delays due to psychosocial factors. Twenty-two participants were female, and most participants had 1 or 2 children. Three parents identified themselves as Aboriginal and five parents reported English was not their primary language. Table 1 displays participant demographic information.

Table 4.1 Participant demographics

Participant	**n**	**%**
Gender		
Female	22	95.7
Male	1	4.3
Age		
20-24	2	8.7
25-29	2	8.7
30-34	8	34.8
35-39	5	21.7
40-44	5	21.7
45-49	1	4.3
Marital status		
Never married/Defacto	4	17.4
Widowed	1	4.3
Divorced	1	4.3
Separated but not divorced	2	8.7
Married	15	65.2
Aboriginal or Torres Strait Islander		
No	20	87
Yes Aboriginal	3	13
Yes Torres Strait Islander	0	0
Primary Language		
English	18	78.3
Other	5	21.8
Number of children		
1	8	34.8
2	11	47.8
3	2	8.7
5	1	4.3
6	1	4.3
Relationship to child		
Mother	22	95.7
Father	1	4.3
Primary diagnosis		
Developmental delay		
Speech	6	26.1
Multiple	2	8.7
Global Developmental Delay (GDD)[1]	1	4.3
Autism Spectrum Disorder (ASD)[2]	2	8.7
Down Syndrome	8	34.8
Mosaic Down Syndrome	1	4.3
Vulnerable/at risk	3	13.0

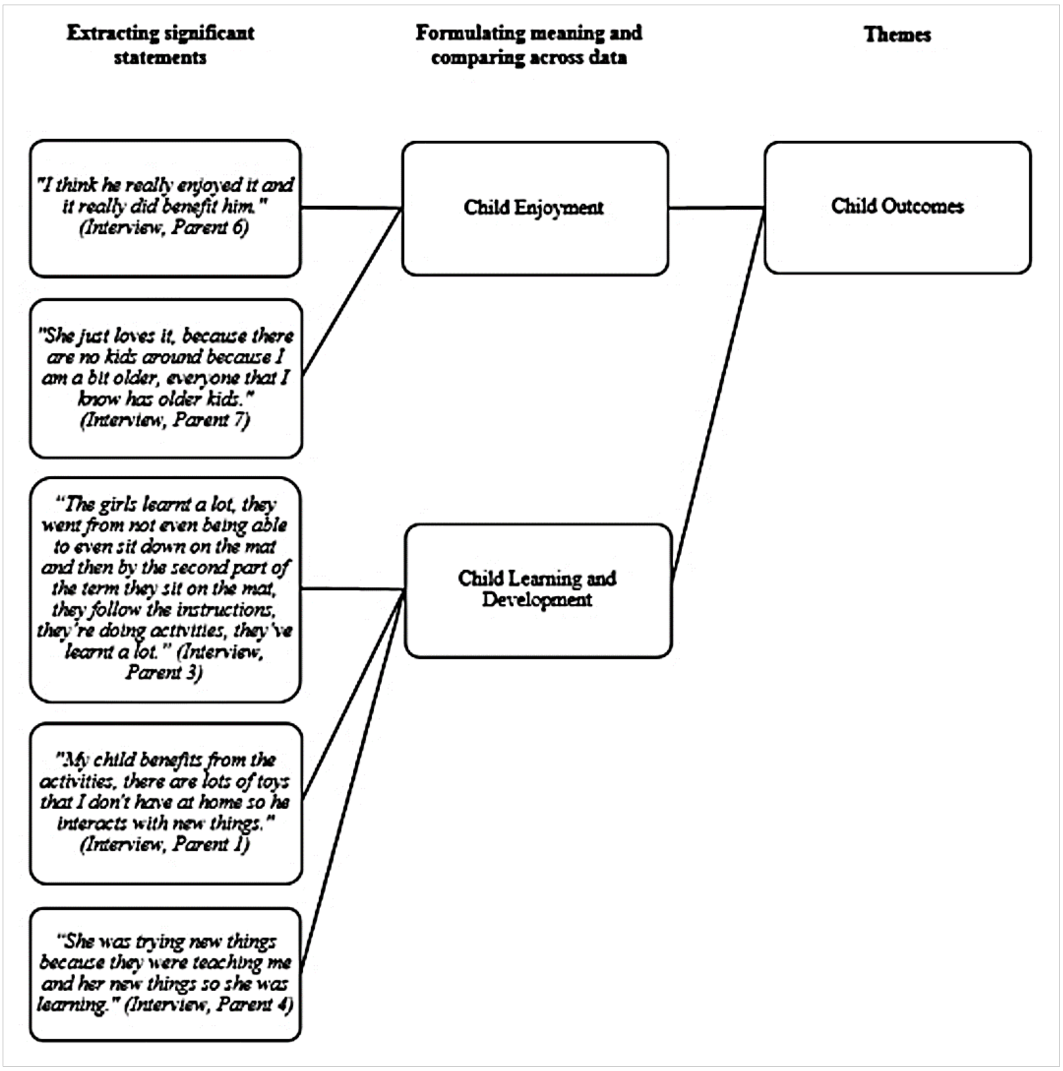
Note:[1] Child undergoing ASD assessment (n=1); [2] Child identified having secondary diagnosis of GDD (n=1)

Data Collection

Data was collected via focus groups and interviews, with both methods considered appropriate in interpretative phenomenology (Larkin, Watts, & Clifton, 2006). Parents were offered the choice of attending a scheduled focus group located within a community centre or scheduling an individual interview at their home based on the most convenient format given their circumstances. A total of three focus groups (n=16) and seven individual interviews (n=7) were conducted. In line with interpretive phenomenological methodology a non-directive semi-structured interview guide was developed and used guide focus groups and interview discussions. Open ended questions explored parents' experiences of attending a supported or therapeutic playgroup, emphasising discussion on playgroup components that fostered positive experiences. The interview guide is outlined in Appendix A. All interviews and focus groups were facilitated by the first author, ranging in duration from 40 to 90 minutes, and were audio recorded with consent with field notes made immediately following each focus group or interview.

Data analysis

All focus groups and interviews were transcribed verbatim, with data analysed using Colaizzi's method of qualitative data analysis (Colaizzi, 1978). This involved a process of moving within and across case comparisons (Ayres, Kavanaugh, & Knafl, 2003): initially reading transcripts to develop an understanding of participant stories; extracting significant statements; formulating meanings based on significant statements; comparing recurrent meanings across participants' stories; integrating meanings into themes; and then returning themes to participants, cross checking analysis and interpretation (Colaizzi, 1978; Sanders, 2003). An example of this process is depicted in Figure 1. Although often associated with descriptive phenomenology this method is the only phenomenological analysis approach requiring results to be validated by study participants, ensuring researchers correctly interpret participants' experiences, and is therefore well aligned with IPA (Chan, Fung, & Chien, 2013). Field notes and audit trails were recorded with data managed using NVivo Version 11 (QSR International Pty Ltd, 2012), but only focus group (n=3) and individual interview (n=7) transcripts were included in the analysis. Data were coded by the first author with an independent assessment of data coding and agreement conducted by a qualitative research expert, member checks were conducted, and data was collected until saturation was achieved. A summary of overarching themes was sent to all participants for comment, with five participants responding, confirming agreement with study findings.



"I think he really enjoyed it and it really did benefit him." (Interview, Parent 6)

"She just loves it, because there are no kids around because I am a bit older, everyone that I know has older kids." (Interview, Parent 7)

"The girls learnt a lot, they went from not even being able to even sit down on the mat and then by the second part of the term they sit on the mat, they follow the instructions, they're doing activities, they've learnt a lot." (Interview, Parent 3)

"My child benefits from the activities, there are lots of toys that I don't have at home so he interacts with new things." (Interview, Parent 1)

"She was trying new things because they were teaching me and her new things so she was learning." (Interview, Parent 4)

Figure 4.1 Example of data analysis using Colaizzi's method

Trustworthiness

Credibility was strengthened by adopting an established methodology, triangulating data and conducting member checks. Researcher and data triangulation was achieved by having two researchers separately analysing and checking data, and triangulating data from two data collection methods with a diverse range of participants with children of varying developmental delays and disabilities (Curtin & Fossey, 2007). Transferability was enhanced by purposeful sampling of participants with in-depth knowledge of the phenomena under study, and dependability improved by documenting audit trails of research methods, coding decisions and author reflections (Shenton, 2004). To strengthen confirmability researchers practised reflexivity, declaring preconceived assumptions in relation to therapeutic and supported playgroups, examining how biases may have impacted data interpretation

Ethical approval was received from Perth Children's Hospital Ethics Committee (2015181) and Curtin University (HR228/2015). Informed consent was required to participate in the study, consisting of reading and understanding the participant information sheet and completing the consent form. Within the focus groups participants were asked to maintain the confidentially of information discussed and shared by other participants. If interview or focus group discussion were emotionally upsetting for participants procedures were in place to refer participants to appropriate professional services, this was required for one participant.

4.4 Results

The findings revealed parents' engagement and enjoyment of therapeutic or supported playgroup centred around three main themes and ten sub-themes. The three key components were revealed to be acceptance and belonging; opportunities for child development; and information provision. The themes, subthemes, associated quotes and frequency counts are outlined in Table 4.2. The term 'playgroup' is used throughout the results section, but this refers to 'supported' and/or 'therapeutic' playgroup.

Table 4.2 Themes and subthemes

Theme	**Subtheme**	***Quotes***
Acceptance and belonging Feeling accepted by the facilitator and other families (K=10)	*Shared experience* (K=9) Developing relationships with other parents with similar experiences	*“I want to hear other people’s experience and advice on what stages they have gone through, like when I first came to this playgroup I was looking for a network of friends in the same situation and finding out information as a parent to help me, what I can do and what can I expect in that first year.” (Focus group 3, parent 1)*
	Facilitator relational skills (K=10) Interpersonal skills and cultural sensitivity	*“She greets you and says hello to the children, You feel very welcomed and supported” (Focus group 2, Parent 1)*
	Playgroup structure and inclusiveness (K=6) Relaxed and informal environment inclusive of siblings	*“Something that I like about playgroup as opposed to some of the other things like therapy is the fact that the siblings can come along as well, it provides not only a support group for myself and [my daughter], but siblings can also form friendships with other siblings.” (Focus group 3, parent 6)*
Child development Perceived benefits to children (K=10)	*Enjoyment* (K=10) Children enjoyed attending and participating in playgroup	*“It’s more [my daughter], she just loves it, because there are no kids around because I am a bit older, everyone that I know has older kids.” (Interview, Parent 7)*
	Socialisation (K=7) Children socialised with other children and families	*“I like the fact that my children can interact with the other children because both of them are delayed in speech, so I find when they come to things like [playgroup], they copy a lot more. They see other kids do it, they like to do it too.’ (Focus group 1, parent 2)*
	Learning and development (K=10) Opportunities for child development and learning	*“She was trying new things because they were teaching me and her new things, so she was learning stuff. Stuff I didn’t think she was capable of, so it was really good.” (Interview, parent 4)*

Theme	**Subtheme**	***Quotes***
Parent knowledge and skills Learning and gaining skills to support child development (K=10)	*Sharing tips and strategies* (K=5) Receiving and providing strategies amongst parents	*"I think it's the interaction with other parents, it is good, you share a lot of tips, what works, therapy, that is the main thing, you can sort of share ideas with each other, especially the ones with older children, they have been through it… so it is good that way. " (Focus group 3, parent 1)*
	Facilitator expertise (K=8) Facilitator qualification and knowledge of child development	*"This was information from a professional who knew what they were talking about and was some really good things, and I really felt like I had a lot more information available to me." (Interview, parent 6)*
	Multidisciplinary support (K=5) Access to multidisciplinary information and support	*"Having access to therapists who come and give you some information, generic information to kind of get you started, but also having opportunities that you can ask them specific questions and give you some more targeted information." (Interview, parent 3)*
	Information format (K=5) Delivery of information	*"I think it is best to sit around and have a yarn about it, like this, I think you gain more information and maybe just a little pamphlet, rather than having it on a whiteboard presenting things when you just sit and listen." (Focus group 1, Parent 2)*

Note: K= number of data sources that reported theme inclusive of focus groups (K=3) and interviews (K=7).

Acceptance and belonging

Feeling accepted and understood by the facilitator and other parents was a key factor underpinning parents' enjoyment, attendance and sense of belonging. This was crucial in making parents feel comfortable and essential in their ongoing playgroup engagement: *"I travel quite a distance for playgroup, but this is where I feel comfortable and my kids feel comfortable"* (Focus group 1, Parent 2). In contrast, parents reported disengaging from playgroups where they did not feel accepted: *"It was more about accepting you into that playgroup… questioning if you fit in. So, I didn't go back."* (Interview, Parent 4)

Shared experience

Meeting other parents with the shared experience of parenting a child with a developmental delay or disability underpinned feelings of acceptance, increasing parent comfort whilst providing a common ground to build social networks and supports.

> *It’s always nice meeting other parents and they have very similar kids to mine, it’s good to see, to meet them and everyone feels normal, that part is good.* (Interview, Parent 5)

Parents described this shared experience created comradery with other parents. Hearing the experiences of other parents of children with special needs validated parents’ experiences, fostering their feelings of being understood, accepted and comfortable, removing the need to explain or justify their child’s development and behaviour.

> *I don’t feel like I constantly have to explain her behaviour, so [the playgroup] is a time for us to switch off a bit from justifying our children.* (Focus group 3, Parent 6)

In contrast, parents reported withdrawing from previous playgroups because of unpleasant interactions with other parents, often resulting from misunderstandings related to their child’s behaviour leading to feelings of exclusion and judgement.

The shared experience of raising children with developmental challenges also provided a foundation for friendships and social networks, further enhancing playgroup enjoyment. Results revealed parents of a child with a diagnosed disability such as autism spectrum disorder or Down syndrome valued the opportunity to develop relationships and support networks with other parents, more than parents perceiving their child as having a milder developmental delay.

Facilitator relational skills

Facilitators emerged as crucial in determining parents’ feelings of acceptance and comfort. Facilitators who were friendly, welcoming, non-judgmental, kind and good with their children promoted a supportive and inclusive environment.

> *I was really uncertain about the whole idea, but [the facilitator] really encouraged me and she was really nice. I was really grateful to her for what she did for me.* (Interview, Parent 6)

Facilitators were also perceived to play a key role in encouraging parent socialisation and connections, by facilitating parent introductions, group discussion and resolving interpersonal conflicts that arose between parents. *“When playgroups are* *well facilitated, so that if there are conflicts between the children or parents, it is well managed."* (Focus group 2, Parent 1)

The cultural sensitivity of playgroup facilitators was also identified as fundamental for parents' feeling accepted. Aboriginal mothers extended this, stating Aboriginal playgroups needed Aboriginal facilitators to ensure families felt understood, accepted and comfortable.

> *Often workers are not culturally aware, they don't know, or they don't understand the Aboriginal way... it's all Aboriginal workers here and it makes the kids feel more comfortable, it does make a difference.* (Focus group 1, Parent 4)

Playgroup structure and inclusiveness

The informal and flexible playgroup routine, inclusive of all family members enhanced parents' comfort, and feelings of acceptance in relation to themselves and their children. The inclusion of siblings made playgroups more accessible, negating the need to find babysitters or make alternative arrangements for siblings.

> *It gives you the ability to meet other parents, have the facilitator there and your other children there as well because sometimes it's not always possible to get babysitters if you've got younger siblings.* (Interview, Parent 3)

Playgroup routine was also reported to actively support parent socialisation, for example informal play activities allowed parents to talk to other parents while children engaged in play, and morning teatime provided further opportunities to talk and connect.

Child development

Overwhelmingly parents reported playgroups were most effective when their child enjoyed attending, socialised with other children and developed new skills.

Enjoyment

The most common motivator for parents engaging and attending playgroups was their child's enjoyment with parents' enjoyment closely tied with the perception of their child's enjoyment. Playgroups provided a range of activities and socialisation opportunities, capturing children's interest and excitement. Seeing their child's enjoyment during playgroup was pleasing to parents, making it easier to attend. *"It's more if your kids feel comfortable, if the kids are happy then you are happy."* (Focus group 1, Parent 3)

Socialisation

Playgroups also provided important socialisation opportunities for children, which parents associated with improving their children's social skills, communication and play. Exposure to other children was particularly valued by families who did not have other children or extended family or friendship networks with children. The social benefits of playgroups extended to siblings, with parents appreciating the opportunities playgroup provided for siblings of their child with a disability to attend and meet other siblings. Parents hoped friendships would continue beyond playgroup, allowing siblings to share experiences, supporting each other as they grew.

> *Yes, not just for the child with the disability, it is for support, because it will be good for the siblings to also have friendships with other siblings.* (Focus group 3, Parent 6)

Learning and development

Almost all parents discussed the key driver for attending playgroup was to enhance their children's learning and development. Parents stated the playgroup routine, resources and activities provided opportunities for children to develop new skills. The wide range of equipment, toys and activities available within playgroups enabled developmental opportunities and experiences that children may not have otherwise been exposed to. The consistent structure and routine of playgroups was also perceived to be beneficial in providing opportunities to practise and master a range of skills, whilst developing children's understanding of routines and transitions, preparing them for future school environments

> *The girls learnt a lot, they went from not even being able to even sit down on the mat and then by the second part of the term they sit on the mat, they follow the instructions, they're doing activities, they've learnt a lot.* (Interview, Parent 3)

Parent knowledge and skills

All parents in this study expected that attending playgroup would help them gain knowledge and practical skills in assisting their child's development and provide a forum for sharing information on relevant community services and resources. Parents' knowledge and skills were enhanced by sharing tips and strategies with other parents; the presence of experienced facilitators, having access to multidisciplinary support, and multi-modal information provision.

Sharing tips and strategies

The shared experience of being a parent of a child with delay or disability meant that other parents in the group were important sources of information and a resource in identifying new approaches to parenting their child. Many parents reported learning from parents with similar children and experiences: *"You can talk with other parents and get their experience, you can talk about the way they cope and the way they manage things." (Interview, Parent 4)*

Facilitator expertise

Experienced and qualified facilitators were also important sources of information, valued for their knowledge of child development, parenting, developmental challenges and relevant community services, and worked in partnership with parents to tailor strategies and information to individual children and families. Facilitators that provided individualised information on parental concerns and priorities enhanced parents' experience of attending playgroups.

> *It is really good to have somebody to tell you about, not just about development and goals, but to teach you practical skills about how to help your child to attain them and things like that.* (Interview, Parent 6)

In contrast, parents expressed frustration when they perceived information was irrelevant, highlighting the importance facilitators working in partnership with parents and individualising information.

> *There is no point having a language problem and going there and having an occupational therapist, I don't see the sense in that.* (Interview, Parent 2)

The benefit of having allied health professionals such as a speech pathologist or occupational therapist as facilitators, rather than community workers or volunteers, was discussed. Parents reported this enhanced their playgroup experience, enabling them to access information from professionals who provided practical information and relevant ideas for supporting child development. Parents without this access expressed their desire for it, suggesting this would provide opportunities for informal child assessment, therapeutic support and facilitate referrals to intervention services if required.

Multidisciplinary support

Parents of children with disability discussed the benefits of having access to multidisciplinary support at playgroups, reporting this provided a greater understanding of their child's difficulties and earlier referrals to appropriate services and supports as needed. *"To have a speech therapist there, if only occasionally would be good."* (Interview, Parent 4)

In the case such support was unavailable, parents valued having facilitators that connected them with external multidisciplinary support and services. "*I ask [the facilitator] and if she doesn't know she will do research for me, she is very good."* (Interview, Parent 1)

Information format

Parents reported wanting access to a range of information options, including informal and formal discussions and handouts, valuing information that was practical, accurate and relevant to their needs and concerns. Some parents discussed wanting more access to handouts, allowing them to review information after the playgroup. *"Yeah, because you got to take them home, and put them in a folder, and you always have that reference."* (Interview, parent 6)

4.5 Discussion

Study findings suggest engaging and effective playgroups are layered by multiple parent, facilitator and child characteristics, serving to validate playgroups as a complex intervention. Most notable was the importance of parents feeling accepted, meeting other parents, receiving relevant information and seeing their children benefit from attending playgroups.

The value of playgroups facilitating social connections and peer support amongst parents with shared experience emerged as key playgroup component, making them unique to other therapeutic interventions, enabling reciprocal learning and fostering a sense of belonging. The significance of reciprocal learning and peer support amongst parents at playgroups is reinforced by previous studies, finding this is enhanced with increasing family similarity and circumstances(Armstrong et al., 2018). Parents of children with similar disabilities are viewed as an important and credible information sources (Tracey, Johnston, Papps, & Mahmic, 2018), with reciprocal information sharing increasing parent satisfaction, buffering feelings of uncertainty related to having a child with a disability and the ambiguity of developmental trajectories (Solomon et al., 2001). Given, parents of children with disability experience higher levels of social isolation and exclusion than other families (Myers, Mackintosh, & Goin-Kochel, 2009), identifying services such as supported and therapeutic playgroups that effectively counter social isolation and improve social connections is particularly pertinent. Such factors reduce parenting stress and increase parenting capacity and functioning (Boyd, 2002). Despite the importance of peer support and social connections between parents of children with a disability, professional agencies and therapeutic interventions rarely address these needs (Solomon et al., 2001). Research points to a need for interventions addressing the developmental needs of children, while simultaneously actively promoting social support for parents (Boyd, 2002). Given playgroups' ability to achieve both outcomes, they are likely an acceptable and efficacious service model in the disability sector.

The role of the facilitator emerged as an integral factor of playgroup with facilitators who were knowledgeable, with strong relational skills and worked in partnership with parents' enhancing parent engagement and perceived success of playgroups. This reinforces previous research identifying playgroup facilitator's are viewed as an integral information source, whose interpersonal and technical skills are key playgroup components (Armstrong et al., 2018; Stratigos & Fenech, 2018). In the broader literature such facilitators' skills are referred to as relational, technical and partnership skills and reflect the core principles of family centred practice (Dunst & Trivette, 1996). Given family centred practice is considered best practice in early intervention and associated with improved parent and child outcomes (Dunst, Trivette, & Hamby, 2007), it is not surprising the facilitator's adoption of family centred practices was perceived to improve parental engagement and enjoyment at playgroup. This aligns with the findings of previous research identifying playgroup facilitators adopting a family centred approach as leading more effective playgroups (Armstrong et al., 2019; Armstrong et al., 2018). While most playgroup facilitators are described as possessing strong intrapersonal skills, the retention of knowledgeable and qualified facilitators is challenging (Stratigos & Fenech, 2018). In this study, parents valued working with qualified and skilled professionals who tailored strategies and information to meet a family's priorities. They reported becoming frustrated when this was unavailable or if they perceived professionals did not work in partnership to provide relevant information. This highlights the importance of the role of trained and skilled professionals in underpinning the family centred nature of playgroups for children and families with developmental disabilities.

These findings draw strong parallels to a recently published study investigating core components of therapeutic playgroups from the perspective of professionals, with both studies identifying playgroups as underpinned by family centred practice and peer support (Armstrong et al., 2019). However, while the professional study focused on the operational aspects of playgroups, this study focused on the lived experience of parents of children with disability and delay, emphasising the importance of parents feeling accepted and having a sense of belonging within playgroups. This study extends previous research, with findings aligning with self-determination theory's basic psychological needs of relatedness, autonomy and competence (Gagné & Deci, 2005). This highlights the importance of empowering parents early in their journey as a parent of a child at risk of a developmental disability. Relatedness was reflected in the sense of belonging and acceptance parents felt in attending playgroup, underpinned by their shared experience and connection with other parents in the same situation, and the relational skills of the facilitator. Referring to the need to feel efficacious, competence resulted from parents sharing knowledge and gaining new skills during the playgroups, ultimately improving confidence in parenting a child with developmental challenges. Finally, encompassing an individual's desire for choice and meeting personal needs, autonomy was built on accessing relevant information from facilitators and other parents. In terms of practice guidelines, it is suggested that self-determination theory provides a helpful overarching framework when engaging with parents of children whose child is at risk of developmental disability, which is operationalised within playgroups enacted by family centred practice and peer support.

Finally, the perceived benefits of playgroups for both children with delay and their siblings emerged as a key driver for families engaging in and attending playgroups. Parents reported benefits including child socialisation, enjoyment, exposure to new and varied play and developmental opportunities and preparation for school routines and transitions. These findings are not novel but support previous playgroup research. Most notably Williams and colleagues (2018) systematic review of supported playgroups reported playgroups increased child outcomes including general development, attachment, and play, while also supporting transition to schools and exposing children to varied learning and play opportunities. The importance of play is well established for child social, emotional, cognitive and physical wellbeing and development. Yet children with developmental disabilities experience challenges engaging in play, often requiring additional support to develop play and social skills (Vaughn et al., 2003). The role of early intervention models such as playgroups, that foster and encourage children and parents to engage in unstructured and regular play (Gregory et al., 2016) with the support of other parents and therapists are therefore increasingly important for children with developmental disability and their families.

Compared to groups where parents felt their child was negatively judged, parents described therapeutic and supported playgroups as an environment where their child was understood and accepted by other families, creating a sense of belonging and enabling parents to feel comfortable to continue bringing their child to play and socialise. Parents' perceived stigmatisation and devaluation of their child with a disability is well reported and associated with parents engaging in less peer interaction both for themselves and their children (Green, 2003), making the support and acceptance they experience in the context of therapeutic and supported playgroups even more highly valued. The structure and routines of playgroup reported in this study exposed children to a wide range of play opportunities whilst simultaneously familiarising children with school-like routines, preparing them for future schooling. Given children with disabilities are more likely to experience difficulties transitioning to formalised schooling than their typically developing peers (McIntyre, Blacher, & Baker, 2006), early intervention models that foster school readiness skills in this population are particularly beneficial.

While this study attempts to identify the key components of therapeutic and supported playgroups, it is limited by small sample size and parents of children with a wide variety of developmental delay and disabilities. Although this range increases the transferability of findings to a wider population of children and families, had recruitment been limited to a specific type of developmental delays different themes may have emerged. There is also a potential bias of results towards parents who have children with Down syndrome due to the high proportion of these parents involved in the study. Given the study focused on children with developmental delays and/or disabilities findings may not relevant to supported or therapeutic playgroups for other clinical cohorts or populations. The representation of parents identifying as culturally and linguistically diverse (20 percent) or Aboriginal (13 percent) strengthen study findings by potentially increasing the relevance of findings to these populations. However, despite conducting member checking procedures, only five participants responded to validate findings. Further validation would strengthen trustworthiness and social acceptability of results. Finally, this study did not separate therapeutic and supported playgroups, but rather attempted to contribute to the understanding of the key components of therapeutic and supported playgroups for children with developmental delays and disabilities. This was due to the lack of clarity in distinguishing these playgroup models when the study was conducted. Further research is required to distinguish the differences between these models and to specifically cater for children with developmental delays.

4.6 Conclusion

While playgroups are not a new service model, there is a paucity of research examining the key components of supported or therapeutic playgroups, hindering playgroup implementation and evaluation. Other studies have found similarities regarding the perceived benefits of attending therapeutic and supported playgroups, but this is the first study to attempt to document the ‘key components’ of therapeutic and supported playgroups from the perspective of parents. Given the importance of consumer involvement in ensuring clinical relevance and research translation, study findings provide a valuable addition to playgroup research. This contributed to the understanding of the playgroup ‘blueprint’, supporting future research to systematically develop, implement and evaluate playgroups that are clinically relevant and meaningful to children with developmental disabilities and their families.

Playgroups emerged as an inclusive environment where parents felt accepted and understood by both facilitators, providing opportunities for children's play and development, and for parents' socialisation and support. The findings add weight to the evidence supporting the importance of family centred practice in early intervention models for children with disabilities. What differentiates this study's findings most strongly from that of previous research is the importance of shared experiences amongst parents attending playgroups. In an early intervention service context where parental peer support needs are not consistently addressed alongside child development concerns, playgroups are unique. Occupational therapists, with their knowledge of family centred practice and child development, have much to contribute in developing and implementing effective playgroups for children with developmental delay and/or disabilities.

Key points for occupational therapy

- Playgroups are layered and are a complex intervention influenced by parent, facilitator and child characteristics.
- The role of 'shared experience' and peer support within the playgroups make them unique to other therapeutic interventions.
- Playgroup facilitators are fundamental in supporting parent socialisation and creating a sense of belonging and acceptance.

4.7 Appendix: Focus Group/Interview Questions for Parents and Caregivers

1. What is your experience of attending a supported or therapeutic playgroup?
    - Other parents
    - Facilitator
    - Playgroup facilities
    - Positives and negatives associated with attending

2. Would you recommend a playgroup for other families and why?
    - Are there any types of parents or families that playgroups suit more than others?

3. What makes you think playgroups are worthwhile and beneficial?

4. What would you define as a ‘successful’ playgroup?

5. What are the key things that make a playgroup successful?
    - Are there particular traits or characteristics of group members?
    - Are there particular traits or characteristics of playgroup facilitators?
    - Are there particular characteristics of the service or organisation that runs the playgroup?

6. What are the things that make a playgroup unsuccessful and unenjoyable?

7. What aspects of the playgroup structure and format did you find most enjoyable?

8. What key recommendations would you give someone designing a playgroup for children with suspected developmental delays and their families?

4.8 References

Armstrong, J., Elliott, C., Davidson, E., Mizen, J., Wray, J., & Girdler, S. (2019). Defining therapeutic playgroups: Key principles of therapeutic playgroups from the perspective of professionals. *Journal of Child and Family Studies*, 1-15. doi:10.1007/s10826-019-01622-2

Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22. doi:10.1080/11038128.2018.1498919

Australian Bureau of Statistics. (2018). *Population by age, sex, Australia, states and territories*. Canberra, Australia: Australian Government

Australian Government. (2019). *Australian Early Development Census National Report 2018*. Canberra, ACT: Commonwealth of Australia

Ayres, L., Kavanaugh, K., & Knafl, K. A. (2003). Within-Case and Across-Case Approaches to Qualitative Data Analysis. *Qualitative Health Research, 13*(6), 871-883. doi:10.1177/1049732303013006008

Boyd, B. A. (2002). Examining the Relationship Between Stress and Lack of Social Support in Mothers of Children With Autism. *Focus on Autism and Other Developmental Disabilities, 17*(4), 208-215. doi:10.1177/10883576020170040301

Chan, Z., Fung, Y.-L., & Chien, W.-T. (2013). Bracketing in Phenomenology: Only Undertaken in the Data Collection and Analysis Process? *The Qualitative Report, 18*(30), 1-9.

Colaizzi, P. E. (1978). Psychological research as the phenomenologist views. In R. Valle & M. King (Eds.), *Existential-phenomenologicial alternatives for psychology* (pp. 48-71). New York: Oxford Univeristy Press.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ, 337*. doi:10.1136/bmj.a1655

Crotty, M. (1996). *Phenomenology and nursing research*. South Melbourne, Australia: Churchill Livingston.

Curtin, M., & Fossey, E. (2007). Appraising the trustworthiness of qualitative studies: Guidelines for occupational therapists. *54*(2), 88-94. doi:10.1111/j.1440-1630.2007.00661.x

Dunst, C., Trivette, C., & Hamby, D. (2007). Meta-analysis of family-centered helpgiving practices research. *Mental Retardation & Developmental Disabilities Research Reviews, 13*(4), 370-378.

Dunst, C., & Trivette, C. M. (1996). Empowerment, effective helpgiving practices and family-centered care. *Pediatric Nursing, 22*(4), 334-337.

Green, S. E. (2003). "What do you mean 'what's wrong with her?'": stigma and the lives of families of children with disabilities. *Social Science & Medicine, 57*(8), 1361-1374. doi:https://doi.org/10.1016/S0277-9536(02)00511-7

Gregory, T., Harman-Smith, Y., Sincovich, A., Wilson, A., & Brinkman, S. (2016). *It takes a village to raise a child: The influence and impact of playgroups across Australia*. Retrieved from South Australia:

Hancock, K., Cunningham, N., Lawrence, D., Zarb, D., & Zubrick, S. (2015). Playgroup Participation and Social Support Outcomes for Mothers of Young Children: A Longitudinal Cohort Study. *PLoS One, 10*(7), e0133007. doi:10.1371/journal.pone.0133007

Houtrow, A. J., Larson, K., Olson, L. M., Newacheck, P. W., & Halfon, N. (2014). Changing Trends of Childhood Disability, 2001–2011. *Pediatrics*. doi:10.1542/peds.2014-0594

Jackson, D. (2011). What's really going on?: Parents' views of parent support in three Australian supported playgroups. *Australasian Journal of Early Childhood, 36*(4), 29-37.

Jackson, D. (2013). Creating a place to 'be': unpacking the facilitation role in three supported playgroups in Australia. *European Early Childhood Education Research Journal, 21*(1), 77-93. doi:10.1080/1350293X.2012.760345

Koch, T. (1995). Interpretive approaches in nursing research: the influence of Husserl and Heidegger. *21*(5), 827-836. doi:10.1046/j.1365-2648.1995.21050827.x

Lakhani, A., & Macfarlane, K. (2015). Playgroups Offering Health and Well-being Support for Families: A Systematic Review. *Family & Community Health, 38*(2), 180-194. doi:10.1097/fch.0000000000000070

Larkin, M., Watts, S., & Clifton, E. (2006). Giving voice and making sense in interpretative phenomenological analysis. *Qualitative Research in Psychology, 3*(2), 102-120. doi:10.1191/1478088706qp062oa

Lopez, K. A., & Willis, D. G. (2004). Descriptive versus interpretive phenomenology: their contributions to nursing knowledge. *Qualitative health research, 14*(5), 726.

Mathie, E., Wilson, P., Poland, F., McNeilly, E., Howe, A., Staniszewska, S., . . . Goodman, C. (2014). Consumer involvement in health research: A UK scoping and survey. *International Journal of Consumer Studies, 38*(1), 35-44. doi:10.1111/ijcs.12072

McIntyre, L. L., Blacher, J., & Baker, B. L. (2006). The transition to school: adaptation in young children with and without intellectual disability. *Journal of Intellectual Disability Research, 50*(5), 349-361. doi:doi:10.1111/j.1365-2788.2006.00783.x

Myers, B. J., Mackintosh, V. H., & Goin-Kochel, R. P. (2009). “My greatest joy and my greatest heart ache:” Parents’ own words on how having a child in the autism spectrum has affected their lives and their families’ lives. *Research in Autism Spectrum Disorders, 3*(3), 670-684. doi:https://doi.org/10.1016/j.rasd.2009.01.004

Peat, G., Rodriguez, A., & Smith, J. (2019). Interpretive phenomenological analysis applied to healthcare research. *Evidence Based Nursing, 22*(1), 7-9.

QSR International Pty Ltd. (2012). NVivo qualitative data analysis Software (Version 11 ed).

Sanders, C. (2003). Application of Colaizzi’s method: Interpretation of an auditable decision trail by a novice researcher. *Contemporary Nurse, 14*(3), 292-302. doi:10.5172/conu.14.3.292

Shenton, A. K. (2004). Strategies for Ensuring Trustworthiness in Qualitative Research Projects. *Education for Information, 22*(2), 63-75.

Solomon, M., Pistrang, N., & Barker, C. (2001). The Benefits of Mutual Support Groups for Parents of Children With Disabilities. *American Journal of Community Psychology, 29*(1), 113-132. doi:10.1023/A:1005253514140

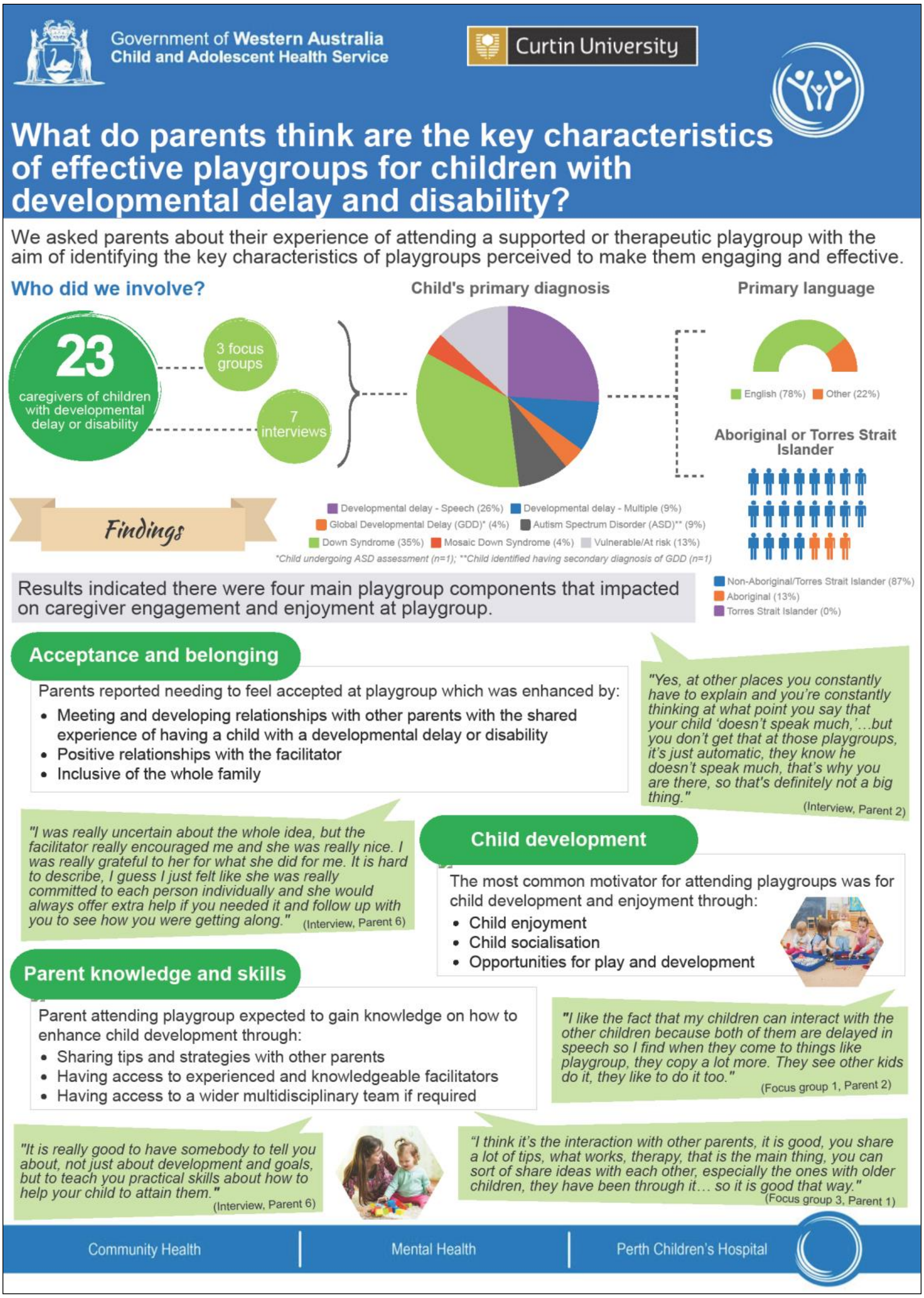
Stratigos, T., & Fenech, M. (2018). Supporting parents’ informed early childhood education and care choices through playgroups. *Australasian Journal of Early Childhood, 12/, Vol.43(4), pp.14-21, 43*(4), 14-21. doi:10.23965/ajec.43.4.02

Tracey, D., Johnston, C., Papps, F. A., & Mahmic, S. (2018). How do parents acquire information to support their child with a disability and navigate individualised funding schemes? *Journal of Research in Special Educational Needs, 18*(1), 25-35. doi:10.1111/1471-3802.12390

Vaughn, S., Kim, A.-H., Morris Sloan, C. V., Hughes, M. T., Elbaum, B., & Sridhar, D. (2003). Social Skills Interventions for Young Children with Disabilities:A Synthesis of Group Design Studies. *Remedial and Special Education, 24*(1), 2-15. doi:10.1177/074193250302400101

Williams, K., Berthelsen, D., Viviani, M., & Nicholson, J. (2018). Facilitated Parent-child Groups as Family Support: A Systematic Literature Review of Supported Playgroup Studies. *Journal of Child and Family Studies, 27*(8), 2367-2383. doi:10.1007/s10826-018-1084-6

4.9 Power of Playgroups Infographic



Government of **Western Australia**
Child and Adolescent Health Service

Curtin University

What do parents think are the key characteristics of effective playgroups for children with developmental delay and disability?

We asked parents about their experience of attending a supported or therapeutic playgroup with the aim of identifying the key characteristics of playgroups perceived to make them engaging and effective.

Who did we involve?

23 caregivers of children with developmental delay or disability

3 focus groups

7 interviews

Child's primary diagnosis

- 🟪 Developmental delay - Speech (26%)
- 🟦 Developmental delay - Multiple (9%)
- 🟧 Global Developmental Delay (GDD)* (4%)
- ⬛ Autism Spectrum Disorder (ASD)** (9%)
- 🟩 Down Syndrome (35%)
- 🟥 Mosaic Down Syndrome (4%)
- ⬜ Vulnerable/At risk (13%)

*Child undergoing ASD assessment (n=1); **Child identified having secondary diagnosis of GDD (n=1)

Primary language

- 🟩 English (78%)
- 🟧 Other (22%)

Aboriginal or Torres Strait Islander

- 🟦 Non-Aboriginal/Torres Strait Islander (87%)
- 🟧 Aboriginal (13%)
- 🟪 Torres Strait Islander (0%)

Findings

Results indicated there were four main playgroup components that impacted on caregiver engagement and enjoyment at playgroup.

Acceptance and belonging

Parents reported needing to feel accepted at playgroup which was enhanced by:

- Meeting and developing relationships with other parents with the shared experience of having a child with a developmental delay or disability
- Positive relationships with the facilitator
- Inclusive of the whole family

"Yes, at other places you constantly have to explain and you're constantly thinking at what point you say that your child 'doesn't speak much,'…but you don't get that at those playgroups, it's just automatic, they know he doesn't speak much, that's why you are there, so that's definitely not a big thing." (Interview, Parent 2)

"I was really uncertain about the whole idea, but the facilitator really encouraged me and she was really nice. I was really grateful to her for what she did for me. It is hard to describe, I guess I just felt like she was really committed to each person individually and she would always offer extra help if you needed it and follow up with you to see how you were getting along." (Interview, Parent 6)

Child development

The most common motivator for attending playgroups was for child development and enjoyment through:

- Child enjoyment
- Child socialisation
- Opportunities for play and development

Parent knowledge and skills

Parent attending playgroup expected to gain knowledge on how to enhance child development through:

- Sharing tips and strategies with other parents
- Having access to experienced and knowledgeable facilitators
- Having access to a wider multidisciplinary team if required

"I like the fact that my children can interact with the other children because both of them are delayed in speech so I find when they come to things like playgroup, they copy a lot more. They see other kids do it, they like to do it too." (Focus group 1, Parent 2)

"It is really good to have somebody to tell you about, not just about development and goals, but to teach you practical skills about how to help your child to attain them." (Interview, Parent 6)

"I think it's the interaction with other parents, it is good, you share a lot of tips, what works, therapy, that is the main thing, you can sort of share ideas with each other, especially the ones with older children, they have been through it… so it is good that way." (Focus group 3, Parent 1)

Community Health | Mental Health | Perth Children's Hospital

Chapter 5 Paper IV: The Development and Feasibility of the LEaP Playgroup

Foreword

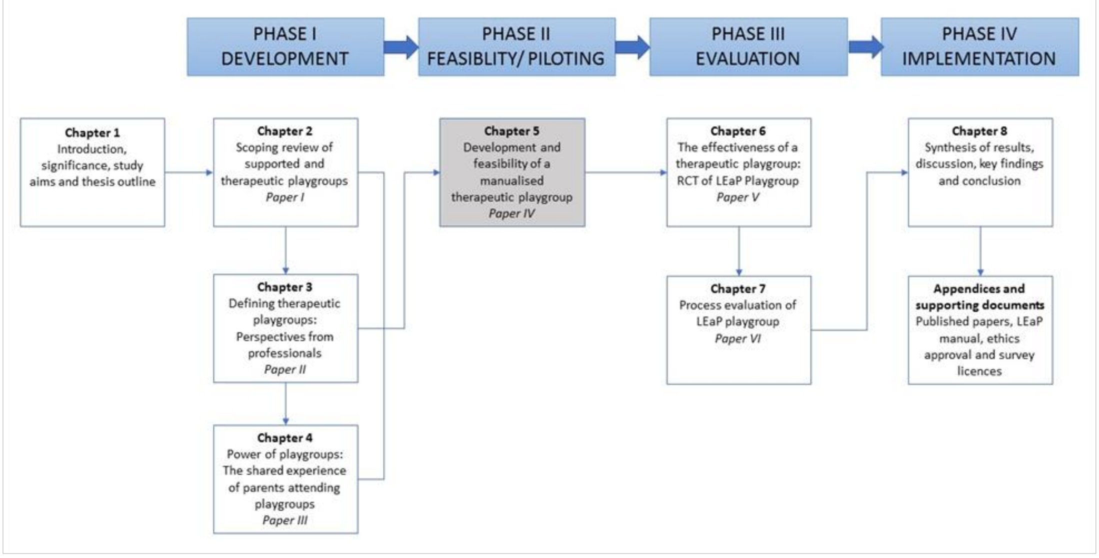
Chapter 5 summarises the development and preliminary feasibility testing of the manualised Learn, Engage and Play (LEaP) playgroup protocol. This chapter triangulates finding from chapters 2, 3, and 4 to identify overarching theoretical frameworks and practice principles of therapeutic playgroups. It also outlines the process undertaken to develop and test the feasibility of the LEaP playgroup for children with developmental delays when first referred to an early intervention service. In the KTA framework[8] this chapter comprises the final component of knowledge synthesis and produced knowledge tools in the form of the LEaP manual and training package (knowledge creation). It also addressed four stages of the action cycle (adapting knowledge to local context; assessing barriers to playgroup use; select, tailor and implement intervention; and monitor knowledge use).

The findings demonstrate LEaP is an acceptable and feasible intervention for children and families and provides recommendations for protocol amendments for further testing in Chapter 6.

Paper IV study methodology

Study Aim	Study Design	Sample	Data Collection and Analysis	KTA Framework Stage
Develop and test the feasibility of the LEaP playgroup	Manual development and feasibility testing	Step 1: Manual development LEaP working group: Professionals (n=10) and caregivers (n=2) Step 2: Feasibility testing Children (n=8) and parents (n=9) Professionals (n=2)	Efficacy testing (pre-test post-test design), focus groups (n=5) and interviews (n=3) Quantitative data: Descriptive statistics and estimation with 95% confidence intervals Qualitative data: Open coding	*Knowledge Creation:* Knowledge tools/products *Action Cycle*: Adapt knowledge to local context; assess barriers to knowledge use; select, tailor and implement intervention; and monitor knowledge use

Paper IV mapped to thesis chapters



The manuscript was resubmitted with minor revisions on the 26th of June, 2020 to the *Journal of Child and Family Studies*, impact factor 1.556.

Armstrong, J., Pieterse, B., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2020). The development and feasibility of a manualised therapeutic playgroup for children with developmental delay. *Journal of Child and Family Studies,* doi.org/10.1007/s10826-020-01789-z

PAPER IV: THE DEVELOPMENT AND FEASIBILITY OF A MANUALISED THERAPEUTIC PLAYGROUP FOR CHILDREN WITH DEVELOPMENTAL DELAY

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5.1 Abstract

Playgroups are widely used throughout the Australian community yet understanding of their efficacy is hindered by inconsistent playgroup definitions and practice principles. This study aimed to develop, implement and evaluate the feasibility of a manualised therapeutic playgroup for children with developmental delay and their families. Adopting a three step process: Step one, manual development involved triangulating findings from existing playgroup literature, and a working group of professionals (n=10) and caregivers (n=2), identifying practice principles and informing the content of a manualised playgroup; step two, conducted a feasibility study involving parents (n=9) and children (n=8); with findings informing step three, manual revisions, in preparation for larger scale efficacy testing. Step one resulted in the development of an eight-week manualised playgroup for children with developmental delay. Step two, undertook feasibility testing with playgroup participants demonstrating improvements in family support and child performance, with playgroup viewed as beneficial by both parents and facilitators, due to parents' shared experience, access to skilled facilitators, parent learning and child enjoyment. Step three, incorporated these findings, finalising the manual. In a context where playgroup research is limited by model variability and undefined practice principles, this is the first study to systematically develop, implement and pilot test a manualised therapeutic playgroup intervention for children with developmental delay. It provides an evidence-based definition of playgroup principles, delivering sufficient assurance of playgroup feasibility to warrant a larger definitive trial, and outlines the process of developing and testing the feasibility of a manualised complex intervention.

Keywords: early intervention; therapeutic playgroups, feasibility; manual development; preschool children; developmental delay; developmental disability; family functioning and support, and waiting lists.

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5.2 Introduction

Playgroups are informal community based programs attended by preschool aged children and their parents to engage with their local community, promote children's development and enhance parenting capacity and parent-child relationships (Williams, Berthelsen, Viviani, & Nicholson, 2018). First introduced in the 1960's to address a shortage in preschool aged services, playgroups are now a cornerstone in the Australian Government's Prevention and Early Intervention Framework (ARTD Consultants, 2008; Jackson, 2013), and are attended by an estimated 200,000 Australian families each week (Commerford & Robinson, 2016). Playgroup models vary and can be classified as community, supported or therapeutic playgroups. While community playgroups are universal, parent-led groups accessible to all parents and children, supported playgroups are run by a paid facilitator and target a specific group of families. Therapeutic playgroups are an emerging approach, led by qualified facilitators, targeting children and families with specific developmental challenges or concerns and aim to provide therapeutic intervention and support (Children and Early Childhood Development, 2008). Given playgroups focus on building parental capacity, enhancing parent-child relationships, and engaging parents in their communities, they are uniquely positioned in the early intervention sector to deliver education and support (McLean et al., 2017), and recognised as an important engagement point for vulnerable families accessing early intervention services (Early Childhood Intervention Australia, 2016; Jackson, 2013).

Nationally and internationally the drivers of increasing referrals and competition for limited resources have led both government and non-government early intervention services (Moore, 2006) to explore alternative models of service delivery that effectively meet the needs of families in a timely way (Boshoff, Alant, & May, 2005). Reports indicate approximately 20 percent of Australian children are at risk in at least one key developmental domain when starting compulsory school, inclusive of social competence; physical health and wellbeing; language and cognitive skills; communication skills and general knowledge; or emotional maturity (Australian Government, 2019). Given a child's first 1000 days are crucial in shaping their long term health and development (Fox, Levitt, & Nelson, 2010), and early intervention is integral in reducing the negative impact of developmental delay, it is critical children experiencing delays have access to therapeutic services as early as possible (Tuominen-Eriksson, Svensson, & Gunnarsson, 2013).

The metropolitan Child Development Service (CDS) of Perth, Western Australia provides publicly funded services to over 19,500 children with developmental delay and/or disability across the metropolitan region per year. In recent years, referrals to CDS have increased and it is predicted that migration and an increased birth rate will continue this trajectory (Australian Bureau of Statistics, 2018a, 2018b). Given early intervention organisations operate on an ongoing basis with waitlists there is a need for innovative approaches to ensure vulnerable children and families receive timely access to services, leveraging early neuroplasticity and limiting the sequelae of social and emotional issues (Moore, 2006). A comprehensive service review involving both CDS staff and consumers suggested therapeutic playgroups could potentially meet both the needs of the organisation and consumers to reduce waitlists (Child Development Service, 2015).

Despite the wide implementation and interest in playgroups there is limited empirical research examining their effectiveness for children with and without developmental delays (Armstrong et al., 2018; Williams, Berthelsen, Viviani, & Nicholson, 2018). To date, playgroup research has primarily focused on evaluating the supported playgroup model for vulnerable and disadvantaged children and families including; Australian Aboriginal or Torres Strait families; refugee or immigrant families; and to lesser extent children with suspected or identified developmental disabilities or delays (Armstrong et al, 2018). Attending playgroup has been associated with improvements in child learning and social emotional development (Hancock et al., 2012; Sneddon & Haynes, 2003), home learning environment (Williams, Berthelsen, Viviani, & Nicholson, 2017) and caregiver social support, well-being, and community engagement (Hancock, Cunningham, Lawrence, Zarb, & Zubrick, 2015; Knuas & Warren, 2015). Studies evaluating the efficacy of playgroups for children with identified developmental disability or delays suggest playgroup attendance is associated with increased child playfulness (Fabrizi & Hubbell, 2017; Fabrizi, Ito, & Winston, 2016); responsiveness and social participation, and parent sensitivity and knowledge (Williams, Berthelsen, Nicholson, Walker, & Abad, 2012).

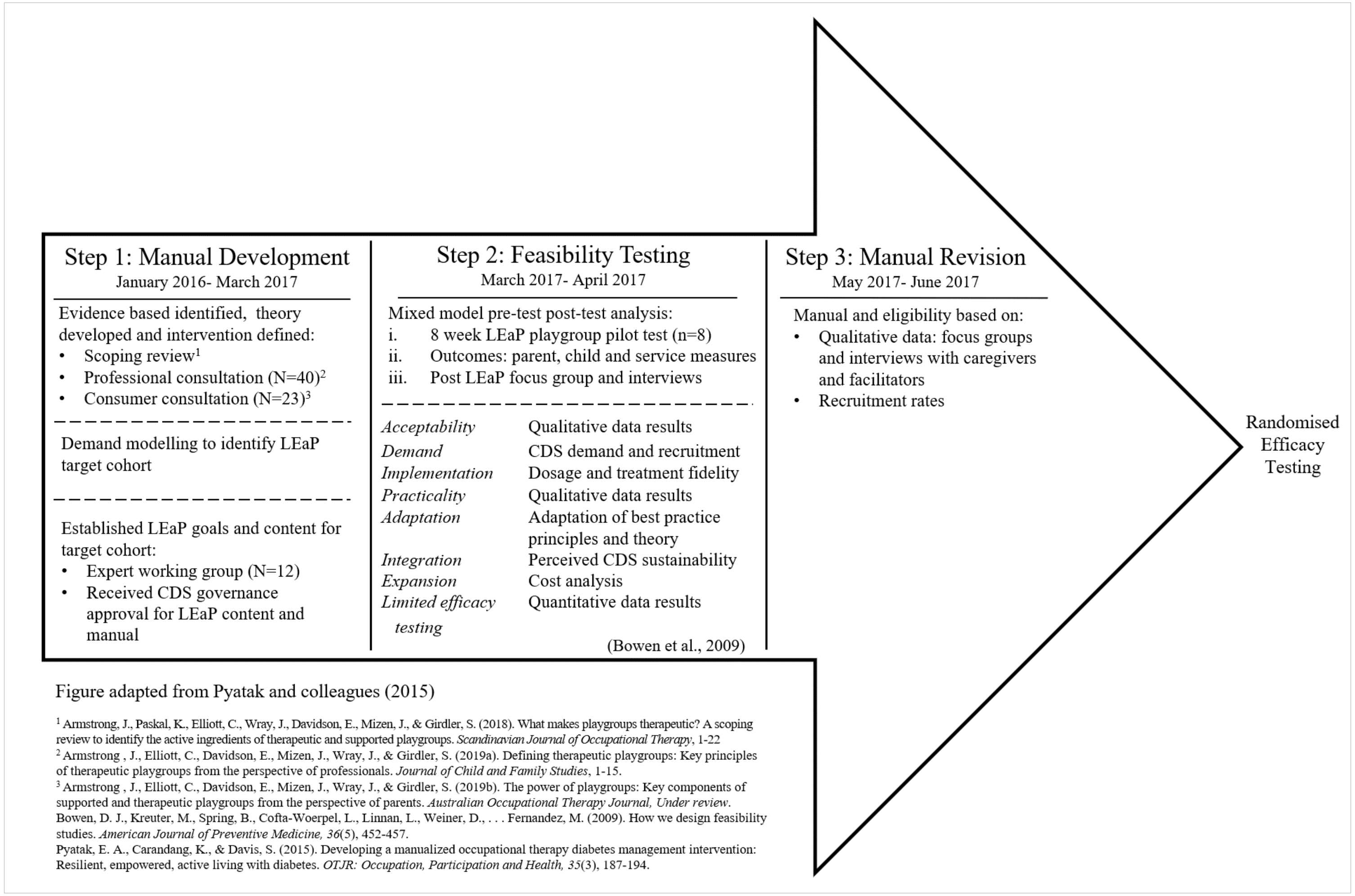
While playgroups show promise in improving outcomes for both parents and children, findings must be interpreted with caution due to the variability in playgroup definitions, target cohorts and evaluation methodology (Dadich & Spooner, 2008). Recent systematic and a scoping reviews of the playgroup literature have emphasised that empirical research is impeded by variability in playgroup definitions and approaches, making it problematic to draw conclusions on playgroups effectiveness, recommending researchers incrementally and systematically identify the 'active ingredients' underpinning their effectiveness (Armstrong et al., 2018; Williams et al., 2018). Considering playgroups, in the Australian context, rely largely on government funding and support, this paucity of research is concerning and highlights the need for more rigorous playgroup research (Hancock et al., 2012).

Given the complexity of playgroups as an intervention, this study fits within a broader project employing the Medical Research Councils' (MRC) framework for developing complex interventions (Craig et al., 2013) to define and describe the theoretical underpinnings and essential functions of a therapeutic playgroup, drawing from previous literature and the perspectives of parents and professionals (Armstrong et al., 2019b; Armstrong et al., 2018). This study sought to build on previous findings to develop and evaluate the feasibility of a manualised therapeutic playgroup program in preparation for rigorous evaluation via a randomised controlled trial. Manualising and translating complex interventions into clinical practice can be challenging, with early evaluation of their feasibility a critical step on the way to a full-scale evaluation of effectiveness. Given resource constraints, it is integral that interventions demonstrate feasibility within real world practice settings before embarking on large scale efficacy trials (Bowen et al., 2009). This paper outlines a step-wise process of manualising a therapeutic playgroup for children with developmental delay referred to an early intervention service (step one), testing the feasibility of this intervention (step two), and finalising this intervention in preparation for efficacy testing (step three).

5.3 Methodology

To manualise and understand the feasibility of a therapeutic playgroup for children with developmental delay within the CDS service context a three-step study was undertaken. Step one resulted in a manualised intervention, guided by Carroll and

Nuro’s model (2002) as adopted by Pyatak and colleagues (2015), this follows a staged and evolving process of systematically identifying and refining the intervention elements in line with the needs of the target group. Step two undertook a feasibility study employing a mixed-methods approach, identifying and refining the ‘active ingredients’, format, goals and content of the intervention (Carroll & Nuro, 2002). Feasibility was assessed in relation to Bowen and colleagues’ (2009) focus areas in line with other feasibility studies examining interventions for children with developmental disability (Cermak et al., 2015; Vivanti et al., 2014). Step three undertook manual revisions, finalising the intervention in preparation for larger scale randomised efficacy testing. This step wise process is outlined in Figure 5.1.



Step 1: Manual Development
January 2016- March 2017

Evidence based identified, theory developed and intervention defined:
- Scoping review[1]
- Professional consultation (N=40)[2]
- Consumer consultation (N=23)[3]

Demand modelling to identify LEaP target cohort

Established LEaP goals and content for target cohort:
- Expert working group (N=12)
- Received CDS governance approval for LEaP content and manual

Step 2: Feasibility Testing
March 2017- April 2017

Mixed model pre-test post-test analysis:
i. 8 week LEaP playgroup pilot test (n=8)
ii. Outcomes: parent, child and service measures
iii. Post LEaP focus group and interviews

Acceptability	Qualitative data results
Demand	CDS demand and recruitment
Implementation	Dosage and treatment fidelity
Practicality	Qualitative data results
Adaptation	Adaptation of best practice principles and theory
Integration	Perceived CDS sustainability
Expansion	Cost analysis
Limited efficacy testing	Quantitative data results

(Bowen et al., 2009)

Step 3: Manual Revision
May 2017- June 2017

Manual and eligibility based on:
- Qualitative data: focus groups and interviews with caregivers and facilitators
- Recruitment rates

Randomised Efficacy Testing

Figure adapted from Pyatak and colleagues (2015)

[1] Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22

[2] Armstrong , J., Elliott, C., Davidson, E., Mizen, J., Wray, J., & Girdler, S. (2019a). Defining therapeutic playgroups: Key principles of therapeutic playgroups from the perspective of professionals. *Journal of Child and Family Studies*, 1-15.

[3] Armstrong , J., Elliott, C., Davidson, E., Mizen, J., Wray, J., & Girdler, S. (2019b). The power of playgroups: Key components of supported and therapeutic playgroups from the perspective of parents. *Australian Occupational Therapy Journal, Under review*.

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., . . . Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine, 36*(5), 452-457.

Pyatak, E. A., Carandang, K., & Davis, S. (2015). Developing a manualized occupational therapy diabetes management intervention: Resilient, empowered, active living with diabetes. *OTJR: Occupation, Participation and Health, 35*(3), 187-194.

Figure 5.1 Timeline of LEaP playgroup manual development

Step 1: Manual development

Owing to the limited available research examining therapeutic playgroups, step one involved triangulating findings from three earlier studies aiming to identify the 'active ingredients' of therapeutic playgroups from the literature, professionals and consumers. These studies included: a scoping review of supported and therapeutic playgroup studies (Armstrong et al., 2018); consultation with professionals with experience facilitating supported or therapeutic playgroups (N=40) (Armstrong et al., 2019a); and consultation with parents who attended a supported or therapeutic playgroup (N=23) (Armstrong et al., 2019b). Study findings served to identify the overarching theoretical frameworks, practice principles and definition of therapeutic playgroups for children with developmental delay and disability. Following analysis of CDS referral data, the target clinical cohort was identified, and the playgroup goals and content were developed in conjunction with a working group of professionals and consumers. The manualised therapeutic playgroup was called the Learn, Engage and Play (LEaP) playgroup.

LEaP target cohort

A service demand analysis was conducted to identify the developmental age and clinical presentation of the target cohort. Referral data for all children aged 0 to 48 months referred to CDS during the 2015 calendar year were analyzed according of child age and type of discipline referral, inclusive of single and multiple discipline referrals. These were then rank ordered to identify the cohort with the largest referral numbers and subsequent service demand.

LEaP content development

With the objective of informing LEaP playgroup content and method of delivery, a working group consisting of parents of children with developmental delay and/or disability (n=2) and multidisciplinary health professionals with experience in developmental paediatrics and facilitating therapeutic playgroups (n=10) was established. Professionals included speech pathologists (n=2), occupational therapists (n=3), child health nurse (n=1), clinical psychologist (n=1), social worker (n=1) and physiotherapist (n=2). The working group met monthly for six months (October 2016 to March 2017) to confirm key messages and therapeutic strategies to address the developmental age and clinical profile of the target cohort. Working group tasks included drafting key message scripts, stipulating methods of information delivery, and identifying playgroup activities and associated therapeutic strategies. The primary authors then compiled a full preliminary manual based on the working group's contributions which was sent to all members for approval. Only minor changes were suggested to three key message scripts prior to approval being granted. To facilitate the acceptability, integration and ultimate translation of the LEaP playgroup to CDS, the manual was also reviewed by the CDS clinical governance group for endorsement. This included allied health and medical representatives responsible for professional leadership and governance within CDS. Following endorsement of the working group and clinical governance group, the manual was finalised in preparation for the feasibility study.

Step 2: Feasibility study

A mixed methods approach assessed the feasibility of LEaP, employing a pre-test post-test design, obtaining qualitative feedback from parents and facilitators. The initial LEaP manual was piloted at a community centre for the purpose of assessing feasibility, providing preliminary understanding of its potential impact on parent and child outcomes, and standardising the intervention for later evaluation in a randomized controlled trial. Adopting Bowen and colleagues' (2009) feasibility focus areas, this study evaluated LEaP in relation to acceptability, demand, implementation, practicality, adaptation, integration, expansion, and preliminary efficacy testing in the form of mean difference change. These areas and their application in this study are outlined in Table 5.1.

Table 5.1 Key feasibility focus areas mapped to LEaP methodology and results

Area of focus (Bowen, 2009)	Application to LEaP methodology
Acceptability *Participants reaction to LEaP*	Focus group and interviews with parents (n=7) and facilitators (n=2)
Demand *LEaP demand and likelihood to be used*	LEaP cohort based on CDS referral data review to identify highest service demand of children aged 0-4 years referred to CDS services ensuring continued demand. Confirmed appropriateness of cohort with expert input from service managers and clinicians. Recruitment rates
Implementation *Extent LEaP was implemented as planned*	LEaP treatment dosage LEaP treatment fidelity: to i) treatment design; ii) facilitator training; iii) treatment delivery; iv) treatment receipt; and, v) enactment of treatment skills (Borrelli et al., 2005).
Practicality *Extent LEaP can be implemented within CDS situational constraints*	Focus group and interviews with parents (n=7) and facilitators (n=2) on ease of attendance and implementation.
Adaptation *Required changes to LEaP content or procedures to accommodate different populations or formats*	LEaP format based on previously established playgroup model and key messages adapted from best practice early intervention literature; and recommendations for LEaP manual revisions based on qualitative and quantitative findings.
Integration *System changes required to integrate LEaP into CDS existing infrastructure*	Playgroup identified as a preferred intervention for CDS families in preceding research (Child Development Service, 2015). Perceived CDS sustainability and fit into organisation achieved through using a CDS working group (n=12); and seeking CDS clinical governance approval during LEaP manual development process. Required LEaP resourcing
Expansion *Potential success of using established playgroup model as basis for LEaP playgroup for chosen cohort*	Resource use cost comparison of LEaP to standard care Fit within broader policy framework
Limited efficacy testing *LEaP preliminary promise of success in target cohort*	Pre-test post-test preliminary efficacy testing of LEaP on parent and child outcomes.

Borrelli, B., Sepinwall, D., Ernst, D., Bellg, A. J., Czajkowski, S., Breger, R., . . . Orwig, D. (2005). A new tool to assess treatment fidelity and evaluation of treatment fidelity across 10 years of health behavior research. *Journal of Consulting and Clinical Psychology, 73*(5), 852-860.

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., . . . Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine, 36*(5), 452-457. doi:10.1016/j.amepre.2009.02.002

Participants

Eight children (and their parents) were recruited from CDS between March and April, 2017. Children were aged 18 to 30 months and were referred to and accepted by CDS, and identified as ‘at risk’ (2 standard deviations below the mean) in communication and at least one more developmental domain as measured by the Ages and Stages Questionnaire (ASQ-3) (Squires & Bricker, 2009). While LEaP was developed for children aged 18 to 36 months, this study only recruited children aged 18 to 30 months. This was because it was assumed the larger age range would recruit too many children for the feasibility trial. Children were excluded if they had an established disability diagnosis such as autism spectrum disorder or cerebral palsy. Participants’ demographic information is outlined in Table 5.2. Children scored on average 76.13 (SD 11.36) on the Early Learning Composite score of the Mullen’s Scale of Early Learning (Mullen, 1995), equating to the fifth percentile and indicative of substantial developmental delay. Five families reported English as their second language and five families reported earning less than the average Australian family weekly income of $1,543.80 (Australian dollars) (Australian Bureau of Statistics, 2017).

Table 5.2 Sociodemographic information of LEaP feasibility study participants

Baseline demographic information	**LEaP (n=8)**
Child age	
Mean (SD) (months)	27.25 (3.3)
Child gender, n (%)	
Male	6 (75)
Female	2 (25)
Carer relationship to child, n (%)	
Mother	8 (88.8)
Father	1 (11.1)
Parent age, n (%)	
20 – 29 years	2 (22.2)
30 – 39 years	3 (33.3)
40 – 49 years	4 (44.4)
Parent education, n (%)	
High school	2 (22.2)
Vocational training	2 (22.2)
Undergraduate	4 (44.4)
Postgraduate	1 (11.1)
Weekly family household income per week, n (%) AU	
$0 - $999	3 (37.5)
$1000 - $1249	2 (25)
$1250 and over	3 (37.5)
Main language spoken at home n (%)	
English	3 (33.3)
MSEL (Mullen, 1995), mean (SD)	
Gross Motor	50.13 (7.82)
Visual Reception	43.38 (9.97)
Fine Motor	41.50 (9.30)
Receptive Language	35.25 (13.20)
Expressive Language	28.13 (7.20)
Cognitive summary score	149.75 (25.64)
Early Learning Composite	76.13 (11.36)

MSEL: Mullen Scales of Early Learning
AU: Australian dollars
Mullen, E. M. (1995). *Mullen Scales of Early Learning*. Circle Pines, MN: American Guidance Service.

Measures

Child and parent sociodemographic information was collected at pre-test. Outcome measures were obtained at pre-test and post-test and consisted of the Parenting Stress Index Short Form (PSI-4 SF) (Abidin, 2012) which was identified as the primary outcome measure; the Tool to Measure Parenting Self-Efficacy (TOPSE)

(Kendall & Bloomfield, 2005); the Canadian Occupational Performance Measure (COPM) (Law et al., 2005); Goal Attainment Scaling (GAS) (King, McDougall, Palisano, Gritzan, & Tucker, 1999); the Family Support Scale (FSS) (Dunst, Jenkins, & Trivette, 1988); the Medical Outcome Study Short Form Health Survey (SF-12) (Medical Outcomes Trust, 2006), 2006); and the MacArthur-Bates Communicative Development Inventory (CDI) (Fenson, Dale, & Reznick, 1993). Pre-test assessments were conducted in the two weeks prior to LEaP and were re-administered at post-test within two weeks of ceasing LEaP.

Data analysis

Descriptive statistics and estimation were used to interpret data with 95% confidence intervals adopted to examine minimally clinically important difference. Data were managed using SPSS Version 24 (IBM Corp., 2016). Only participants with pre-test and post-test data were included in data analysis. Participants that withdrew were excluded. Mean difference was calculated by subtracting post-test from pre-test scores, with a negative mean difference indicative of a reduction in scores at post-test.

A cost comparison of LEaP to standard care was conducted to assess the potential for LEaP expansion. The average LEaP session cost was calculated by totalling the resources used per session then dividing by the attendance rates. The cost of a comparison standard group therapy session was calculated assuming it was facilitated by two clinicians for four children, and as there were no available attendance data, it was assumed all children attended all sessions. Resources were calculated based on staff time and employment costs under the Western Australian Industrial Relations Commission (2016) agreement, plus 29 percent on-costs and 10 percent overheads.

Qualitative data

Qualitative data on LEaP acceptability, practicality and adaptation were gathered using a focus group and interviews. The focus group was held during the final playgroup session (n=5) and interviews were offered to facilitators (n=2) and parents unable to attend the focus group (n=2). The focus group and interviews were guided by open ended questions aimed at examining the perceived effectiveness and acceptability of the LEaP playgroup. Focus groups and interviews were audiotaped with consent and transcribed verbatim with field notes recorded and compared to transcriptions.

Data analysis

Qualitative data were managed using NVivo 11 (QSR International Pty Ltd, 2012) and analyzed using open coding (Cho & Lee, 2014). Data analysis was independently conducted by two researchers and results compared and discussed. Common themes were charted against feasibility focus areas (Bowen et al., 2009).

Treatment fidelity

To monitor playgroup fidelity the National Institute of Health's Behavioral Change Consortium's treatment fidelity framework was adopted; this incorporates fidelity to: treatment design; facilitator training; treatment delivery; treatment receipt; and, enactment of treatment skills (Borrelli et al., 2005).

Treatment design

The manualised LEaP playgroup was delivered to a group of eight families and facilitated by two allied health clinicians who remained consistent across all sessions. The manual detailed overarching LEaP playgroup theoretical frameworks, playgroup definition, core components, key messages, length and number of sessions and weekly activities. Participants were not prevented from accessing other therapies as part of their 'treatment as usual' but recorded contact with health professionals outside of LEaP by completing a weekly treatment diary.

Facilitator training

Facilitators were recruited from the CDS and required to have an allied health or early childhood education qualification; a minimum of five years' experience working with children aged 0 to 3 years with disability and/or delay; group facilitation skills; and a thorough knowledge of family centred practice, parent coaching and parent-child attachment theory. A total of seven professionals were recruited and trained in preparation for the pilot and potential future randomised efficacy trial/s, encompassing speech pathologists (n=2), occupational therapists (n=2), physiotherapists (n=2), and an early childhood teacher (n=1). Facilitators were required to meet coaching fidelity and attend a one-day training workshop on LEaP content and theoretical frameworks. To meet coaching fidelity under the parameters of this study, LEaP facilitators audiotaped, transcribed and wrote a coaching log for a minimum of one therapy session. These were scored by an external coaching expert on an adapted Coaching Practices Rating Scale (Rush & Shelden, 2006), facilitators were subsequently provided with individualised feedback and supervision from the coaching expert to improve fidelity to coaching characteristics (Rush & Shelden, 2011).

Treatment delivery

LEaP sessions were filmed and scored according to a fidelity checklist developed by the research team, with facilitators required to reach a minimum of 90 percent fidelity to treatment protocol. The fidelity checklist included facilitators adherence to family centred practice, facilitation of parent socialisation, adherence to playgroup format and play activities (minimum of six indoor and outdoor play activities), and information content and method of delivery. Facilitators attended fortnightly supervision sessions with a member of the research team who provided feedback on treatment fidelity scores, clinical content and adherence to LEaP playgroup overarching theoretical framework.

Treatment receipt

Key messages were delivered using a coaching framework (Rush & Shelden, 2011) supporting facilitators to monitor parents' understanding and implementation of key strategies. Qualitative data obtained at post-test further informed examination of parents understanding of the key LEaP strategies

Enactment of treatment skills

Qualitative data were analyzed to evaluate parental perception of skills learnt and maintained during LEaP.

Step 3: Revising and finalising the LEaP manual

Manual revisions were informed by focus group and interview findings, feasibility trial service demand and recruitment rates.

5.4 Results

Step 1: LEaP Manual development

Theoretical framework

Findings from a previous scoping review (Armstrong et al., 2018); consumer consultation (Armstrong et al., 2019b) and professional consultation (Armstrong et al., 2019a) revealed therapeutic playgroups are underpinned by family centred practice (Dunst & Trivette, 1996), natural learning theory (Dunst, Trivette, Humphries, Raab, & Roper, 2001), peer support theory (Shilling et al., 2013) and self-efficacy theory (Bandura, 1997). Findings from the consumer consultation revealed key playgroup components correspond with self-determination theory's basic psychological needs of autonomy, competence and relatedness (Gagné & Deci, 2005; Ryan & Deci, 2000). However, it is suggested that self-determination theory within playgroups is operationalised by family centred practice (Dunst & Trivette, 1996) and peer support (Armstrong et al., 2019b; Shilling et al., 2013). These are outlined Table 5.3.

Table 5.3 Theoretical frameworks underpinning playgroups

Family-centred practice (Dunst & Trivette, 1996)	Relational practices Participatory practices Technical skills and expertise
Natural learning theory (Dunst et al., 2001)	Contextually based Interest based Functional based
Peer support theory (Shilling et al., 2013)	Shared social identity Learning from the experiences of others Supporting others Personal growth
Self-efficacy theory (Bandura, 1977)	Mastery Modelling Social persuasion Reinterpreting physiological and emotional symptoms

Family centred practice is considered best practice in working with children and families (Dunst, Trivette, & Hamby, 2007). This strengths-based approach involves providing flexible and individualised services and working in partnership with parents to meet their desired goals (Espe-Sherwindt, 2008). Facilitators with strong relational skills (approachable, non-judgemental, empathetic and demonstrate active listening), participatory skills (recognize parental expertise, engage in collaborative decision making and build parent skills and knowledge) and technical skills (professionally trained, skilled and knowledgeable) foster positive outcomes. This reflects Dunst and Trivette's (1996) model of family centred practice (Armstrong et al., 2018).

Family centred practice highlights the importance of naturally occurring situations that provide contextualised, interest-based and functional child learning opportunities (Dunst et al., 2001; Hanft, 2000; Raab & Dunst, 2004). Within the playgroup model children are free to choose play activities and engage in everyday routines such as snack time, free play, toileting and transitions. The physical resources and home-like environment of playgroups (with access to toilets, kitchen facilities, indoor and outdoor play spaces) promotes natural learning.

Integral to the playgroup model, and key in distinguishing them from other therapeutic approaches, is the peer support provided by other parents (Armstrong et al., 2018). Sharing a social identity and experience, learning from and supporting each other and growing together, fosters peer support between parents (Shilling et al., 2013). Therefore, a therapeutic playgroup model designed specifically for parents of children at risk of developmental disability would likely facilitate the sharing of experiences and peer support.

Self-efficacy theory is the fourth theoretical concept underpinning playgroups, embedded in social cognitive theory, self-efficacy has a direct influence on an individual's motivation, behavior, thinking patterns and emotional wellbeing (Bandura, 1986). Bandura (1997) described four potential sources of self-efficacy; mastery, modelling, social persuasion and reinterpreting physiological and emotional symptoms. Mastery is the most powerful source of self-efficacy, resulting from engaging and succeeding at a target task or behavior (Bandura, 1977). Modelling occurs through observing others succeed at a desired task and increases motivation particularly when there are high levels of similarity between the observer and participant (Bandura, 1977). Social or verbal persuasion serves to convince and encourage individuals in acquiring the necessary skills to achieve their desired goal (Bandura, 1995a), and is most successful within a group context (Jerant, Friedericks-Fitzwater, & Moore, 2005). Reinterpreting physiological and emotional symptoms is the fourth source of self-efficacy (Bandura, 1986). Acknowledging the impact of emotional and physiological states on learning, this source works to redefine perceived symptoms and challenges, promoting feelings of control and mitigating the sense of helplessness (Bandura, 1995b). Within a playgroup model, the predictors of self-efficacy particularly mastery, modelling and peer persuasion, can increase child and parental confidence and competence (Armstrong et al., 2018). These three channels of self-efficacy are readily available in a playgroup setting, given the frequent opportunities for parents and children to master new skills, observe others in similar situations achieve their desired goals and provide a forum for parents with similar experience to receive encouragement and motivate others in achieving their desired goals.

Playgroup definition and practice principles

The triangulation of previous study findings identified that playgroups require a complex interplay of service provider (facilitator), participant and structural characteristics to be considered beneficial and engaging for children with developmental delay and their families. These are outlined in Table 4. A therapeutic playgroup was defined as; **‘**a playgroup targeting the needs of a specific population and typically families with a developmental delay or disability. Within a therapeutic playgroup, parents can access multidisciplinary support and the expertise of qualified facilitators who work in partnership with parents to provide therapeutic information and support for children’s developmental concerns. Therapeutic playgroups are underpinned by routine and a consistent structure, emphasising parent-child relationships whilst facilitating parental peer relationships and helping parents to learn new skills to support their child’s development through play’ (Armstrong et al., 2019a, p.10).

LEaP target cohort

Of the 6,653 children referred to CDS aged 0 to 48 months during the 2015 calendar year, children with communication challenges made up the largest proportion, representing over fifty percent of single discipline referrals and thirty percent of multidisciplinary referrals. Given this demand, the LEaP playgroup was developed to target children aged 18 to 36 months referred to and accepted into the CDS; and identified as being ‘at risk’ as measured by the Ages and Stages Questionnaire (ASQ-3) (Squires & Bricker, 2009) in communication and at least one other developmental domain.

Table 5.4 Playgroup practice principles

Service provider	Facilitator qualities	Relational, partnership and technical skills
	Interdisciplinary/ transdisciplinary	Access to information and strategies across developmental domains
Participant	Shared experience: similarities between families and children Social networking for parents and children Parents take an active role in playing and interacting with child	
Structural	Format	Play-based/child's interest based Wide range of activities Natural learning opportunities Consistent playgroup routine Child and parent socialisation opportunities
	Physical resources	Accessibility Range of physical equipment /activities
	Information	Evidence-based information Child development and play Parenting skills Parent-child attachment Community resources
	Logistics	Staff to family ratios Administration time

LEaP structure

LEaP sessions were scheduled to last for two hours, over eight consecutive weekly sessions, and held at a community centre. An eight week program was chosen based on scoping review findings indicating a minimum of six sessions are required for significant improvement in outcomes (Williams, Berthelsen, Nicholson, Walker, & Abad, 2012). The sessions adhered to a consistent weekly routine including play-based indoor and outdoor activities, group music and singing, story time, snack time, free play and farewell activities. Sessions were facilitated by two allied health clinicians working within a transdisciplinary approach characterised by role release and continuing discipline interaction and knowledge exchange (King et al., 2009).

LEaP content

Information was provided within a coaching framework (Rush & Shelden, 2011) during whole group discussions and individual facilitator and parent discussions. Written information was also provided and parents were encouraged to implement strategies at home. Core LEaP information and key strategies focused on parent-child attachment (Hoffman, Marvin, Cooper, & Powell, 2006), parent responsiveness (Reichmuth, Embacher, Matulat, Zehnhoff-Dinnesen, & Glanemann, 2013; Roberts & Kaiser, 2011), and language facilitation strategies (Hancock, Ledbetter-Cho, Howell, & Lang, 2016; Heidlage et al., 2018). However, parents had access to developmental information across all domains and associated strategies specific to their children. Play was emphasised as the medium through which key strategies could be practiced and other skills targeted. The key messages introduced across the eight LEaP sessions were: 1) learning through play; 2) using children's interests to develop skills; 3) recognising how children communicate; 4) building communication I: responding by adding words; 5) building communication II: being playful and taking turns; 6) dealing with big emotions; 7) developing skills in everyday routines; and 8) information summary and service planning.

Step 2: Feasibility study

A total of six out of the eight children enrolled in the study (75%) completed the study. One participant withdrew to attend an alternative parent group closer to home and the other did not provide a withdrawal reason. Of the first 31 referrals screened, 20 particip1ants met criteria with the other 11 not meeting criteria due to a lack of ASQ-3 data or child age. Recruitment ceased after the first 11 participants met criteria with eight participants agreeing to participate. The other three families citing distance to playgroup or the inability to commit to an eight-week group as reasons for declining. Treatment fidelity was monitored using Borrelli and colleagues (2005) fidelity domains. On average, participants attended 5.7 LEaP sessions.

Quantitative findings

The average score for the primary outcome measure, total parenting stress (PSI-4 SF) at baseline (79.29) and post-test (78.14) were both in the clinically average range falling in the 59th percentile and 58th percentile demonstrating a marginal reduction (-1.14) from pre to post-test. Whilst the total score on parent self-efficacy (TOPSE) showed some improvement (5.43), subscales remained stable. Physical and mental health showed a slight reduction (SF-12) and child communication (CDI) a slight improvement. The outcomes for family support (FSS) (10.71) and parent chosen goals including parental satisfaction (3.38), child performance (3.34) and GAS scores (29.18) showed improvement with confidence intervals not containing zero. The most common goals related to child communication, behavior, play and social interaction. Results are outlined in Table 5.5.

The average cost of a LEaP session was $588 (Australian dollars), an amount comparable to other early intervention groups offered for children within CDS (approximately $427.84). Children also accessed on average 3.3 (2.75) hours of additional standard care throughout the intervention period. This included assessment and/or therapy from speech pathology (n=4), child health nurse (n=2), social work (n=1), occupational therapy (n=1) and multidisciplinary assessment (n=1). One child accessed private speech pathology services.

Table 5.5 Feasibility study participant outcomes

Outcome	Subtest	Baseline *Mean (SD)*	Post-test *Mean (SD)*	*Mean diff (95%CI)* *Post-test – Baseline*
Primary Measure				
PSI-4 SF	Total Stress	79.29 (13.26)	78.14 (11.77)	-1.14 (-14.52 to 12.23)
	Parental Distress	29.43 (7.32)	29.29 (5.74)	-.14 (-4.62 to 4.34)
	Parent-Child Dysfunctional Interaction	21.86 (3.08)	22.00 (3.74)	.14 (-2.70 to 2.99)
	Difficult Child	28.00 (6.16)	26.86 (7.29)	-1.14 (-8.15 to 5.87)
Secondary Measures				
TOPSE	Total	372.29 (42.97)	377.71 (29.51)	5.43 (-59.50 to 70.36)
	Emotion and affection	55.57 (4.58)	57.29 (2.43)	1.71 (-3.64 to 7.07)
	Play and enjoyment	52.57 (5.32)	49.29 (6.97)	-3.29 (-14.17 to 7.60
	Empathy and understanding	47.43 (8.68)	47.86 (5.64)	.43 (-11.83 to 12.69)
	Control	40.14 (11.39)	40.71 (5.77)	.57 (-14.14 to 15.28)
	Discipline and setting boundaries	39.43 (8.85)	43.43 (6.16)	4.00 (-8.69 to 16.69)
	Pressure	39.29(6.02)	39.14 (5.34)	-.14 (-6.95 to 6.66)
	Self-acceptance	49.14 (8.42)	49.71 (2.87)	.57 (-7.70 to 8.84)
	Learning and knowledge	48.71 (5.59)	50.29 (2.93)	1.57 (-4.72 to 7.86)
SF-12	Physical	13.71 (.76)	12.86 (1.35)	-.86 (-2.21 to .50)
	Mental	18.86 (1.57)	18.29 (1.11)	-.57 (-1.75 to .61
FSS	Total	36.71 (12.35)	36.71 (19.65)	10.71 (.55 to 20.88)
CDI	Vocabulary percentile	1.39 (.79)	1.89 (1.71)	.49 (-1.44 to 2.42)
COPM	Performance WA	3.02 (.77)	6.37 (2.06)	3.34 (1.52 to 5.17)
	Satisfaction WA	3.45 (1.19)	6.83 (1.85)	3.38 (.85 to 5.90)
GAS	T score	23.10 (1.02)	52.29 (12.89)	29.18 (15.03 to 43.33)

PSI-4 SF: Parenting Stress Index- Short Form (Abidin, 2012)
TOPSE: Test of Parenting Self Efficacy (Kendall & Bloomfield, 2005)
SF-12: The Medical Outcome Study Short Form Health Survey
FSS*:* Family Support Scale (Dunst, Jenkins, & Trivette, 1984)
CDI: Mac-Arthur-Bates Communicative Developmental Inventories (Fenson et al., 1994)
COPM: Canadian Occupational Performance Measure (Law et al, 2005)
GAS: Goal Attainment Scale (King et al, 1999)
WA: Weighted Average

Qualitative findings

Focus group and interviews findings centred on the acceptability and practicality of the LEaP playgroup. The data indicated LEaP participants were highly satisfied with the playgroup, perceiving it to be beneficial and appropriate in meeting their needs, with facilitators stating LEaP was practical and feasible to implement. The themes and subthemes are outlined in Table 5.6.

Table 5.6 Qualitative themes

Acceptability	Themes	Quotes
Satisfaction	Shared experience *(k=3)*	*"Before coming to the playgroup, I always felt [John] is so special and he's not like other normal kids. Here I'm not lonely. I'm not alone. They have other kids, that look like him and we have the same problem."* (Parent 1*)*
	Child enjoyment *(k=2)*	*"Whenever I'm here, [David] seems to be enjoying it a lot with other kids."* (Parent 2)
	Learning strategies *(k=4)*	*"It really encouraged the parents to be able to play with their kids, then it was much easier, and they got more out of their child so that made them feel happier and more confident."* (Facilitator 2)
	Access to skilled facilitators *(k=4)*	*"I found having the specialists there very helpful."* (Parent 6)
Appropriateness	Playgroup resources and routine *(k=4)*	*"The activities I found is really organized and different varieties of activities. If they lose interest, they can move onto another one. There are lots of activities which are helping them improve."* (Parent 2)
Practicality	Facilitator skills and training *(k=4)*	*'Skills like coaching the parents, actually building rapport with the parents and being able to model to the parents, also having the skills and ideas to facilitate the parent discussion, was can start facilitating that.' (Facilitator 1)*

k: Represents the total number of sources reporting the theme

Satisfaction

Parents and facilitators were highly satisfied with LEaP reporting it was helpful, beneficial, enjoyable and informative: "I found it great. I have no complaints at all. It's been very helpful. I've had an opportunity to follow up on the feedback we get each week, it's been very good" (Parent 6). Core themes impacting on playgroup satisfaction included connecting with other parents with shared experiences, child enjoyment, learning skills to support development and having access to skilled facilitators.

Unlike other settings where parents reported their child was misunderstood or appeared different to other children, the similarities between the children at playgroup promoted a culture of acceptance and understanding. This mutual understanding and shared experience also facilitated friendships between parents, increasing parents' comfort and belonging: *"It's a really good opportunity to build relationships with other parents in similar situations"* (Facilitator 1). Children were also perceived to enjoy playgroup, making it easier and more enjoyable for parents to attend: *"[John] loves it here. He knows it, when we drive close here, he knows, he points outside, and he tries to take off the seatbelt and get to the building. He was so excited when I drive here"* (Parent 1).

The playgroup content and information were perceived to be suitable and beneficial with parents reporting learning new skills and strategies to support their children's development: *"I found it very informative on how to play and how to encourage him talking. It's definitely something I would recommend to other parents in the same situation"* (Parent 3). Parents stated weekly playgroup topics combined with individualised strategies were helpful and increased their confidence and knowledge. In addition to learning from facilitators, parents also acknowledged the value of learning from other parents at playgroup. The only content reported to be lacking was information about typical developmental milestones and communication expectations for bilingual children.

Parental satisfaction was amplified by their access to knowledgeable and helpful facilitators who guided parental expectations and provided general and tailored strategies to support child development: *"She was really specific about her observations and very direct with her questions. The way she communicated her point, I found, was very helpful"* (Parent 6). However, parents sought clarity in regard to the facilitators' role. For example, one facilitator was a speech pathologist and the other, a physiotherapist. Parents reported they were unsure of facilitator's qualifications and would have asked more specific questions if they had known: *"If I'd known she's a physiotherapist [LEaP facilitator] I might have had a question for her, but if I didn't know"* (Parent 3).

Appropriateness

The playgroup routine, range of activities and inclusive nature underpinned the benefits of LEaP for children and families. The two-hour playgroup session was perceived as more relaxing than a traditional one-hour intervention session, allowing more unstructured time to practise strategies: *"It was quite a relaxing environment, so the parents felt really comfortable just to practise strategies and have fun. So that's what I thought was the main difference [to traditional therapy]"* (Facilitator 1). Parents valued the wide variety of indoor and outdoor play options available to children at playgroup, stating it exposed children to a range of play options whilst providing them with additional ideas on how to play with and engage their child at home. Parents also commented that the inclusive nature of LEaP, which permitted siblings to attend, made it accessible and beneficial to both their child with developmental delay and their sibling: *"It's useful that if you do have two kids, you do have the opportunity to take them along as well. I mean, where are we going to leave the other child? So, it was really helpful for this playgroup that we had the option to take both of them"* (Parent 5).

While parents found the session time (two hours) and intervention length (eight weeks) appropriate, families reported wanting sessions to continue beyond the eight weeks. Facilitators felt eight weeks was an appropriate length of time, however, both parents and facilitators felt more support could be provided to encourage parents to continue their friendship beyond LEaP and join local playgroups: *"You feel like you've done eight weeks and you've got a few things [strategies]. No, you don't expect the kids to be talking overnight, obviously it's a time thing, but now it's like this stops and now what"* (Parent 2).

Practicality

Findings revealed LEaP was easily implemented, with the content appropriate and achievable. However, it was emphasised that effective implementation required facilitators with strong relational and participatory skills who are trained and experienced to work within a transdisciplinary model to support child and parent skills: *"The facilitators need more [transdisciplinary] training in terms of child interaction, because it's easy to add words, and model but then to extent that, for example, what does it look like if we're waiting [for child to respond]? What does that mean?"* (Facilitator 1).

Step 3: Manual revisions

LEaP was perceived as both acceptable and easily implemented with recommendations for revisions related to increasing clarification of playgroup facilitator roles, and providing general information about typical developmental milestones, communication expectations for bilingual children and local community playgroups. Facilitators specifically requested the provision of key message summary scripts to enable efficient information delivery, and further emphasis on supporting families' community connections beyond LEaP. The LEaP manual was updated accordingly, with key message summary scripts added to each session, facilitator responsibilities explicitly outlined, and additional resources added on developmental milestones, bilingual communication expectations and community playgroups. Despite parents wanting LEaP to extend beyond eight weeks, this was not implemented in manual revisions due to cost and facilitators' reporting the time was adequate. Recruitment rates were satisfactory, however, for larger trials it is recommended to expand the age cohort to include children aged 18 to 36 months to increase the potential service demand.

5.5 Discussion

This study aimed to demonstrate the process of manual development and feasibility testing of a therapeutic playgroup intervention for children with developmental delay when first referred to an early intervention service. This is the first study to adopt the MRC's framework (Craig et al., 2008), building on previous work of the authors to systematically develop a playgroup manual, outlining key theoretical principles and providing a protocol that could be adapted to other clinical cohorts.

The process of manual development, feasibility testing and manual revision as per Carrol and Nuro's (2002) guidelines resulted in the development of a feasible and acceptable playgroup intervention for children with developmental delays and their families in the context of a targeted, community based early intervention service. A strength of this study was the systematic development of the LEaP manual. Underpinned by playgroup research and developed in conjunction with key stakeholders, inclusive of early intervention professionals and consumers, increases the quality, relevance and potential effectiveness of LEaP for children with developmental delays and their families (Boote, Telford, & Cooper, 2002; Mathie et al., 2014). In evaluating complex interventions such as playgroups, the collection of qualitative data with quantitative data are integral in the feasibility stage to ensure the intervention is delivered as intended. The feasibility trial informed on LEaP feasibility in the focus areas of acceptability, demand, implementation, practicability, adaptation, expansion and preliminary efficacy testing, this is an important step in preparing and warranting larger randomised control trial efficacy studies. Whilst these are discussed, caution must be taken when inferring concrete assumptions on these areas given they are primarily based on qualitative data from a small and non-randomised sample.

Acceptability

Qualitative feedback from both parents and facilitators indicated the LEaP playgroup was perceived as beneficial and appropriate for children and parents. However, feedback was unable to be obtained from the two parents who withdrew from the study, which would have provided further understanding on playgroup acceptability. The core themes found to impact on playgroup acceptability and satisfaction included having a shared experience, perceived child enjoyment, learning strategies and having access to skilled facilitators. These are reflected in previous playgroup literature (Armstrong et al., 2018; 2019a; 2019b) and identified as core components of this playgroup model. It is therefore suggested LEaP was delivered according to its intended core components which increases treatment fidelity.

Demand

As described in the manual development stage, demand was addressed by selecting the LEaP target cohort based on demand modelling, and monitoring participant recruitment in the feasibility study. The LEaP cohort was chosen based on CDS referral rates and was confirmed by the CDS clinical governance group. In the feasibility study recruitment ceased after 8 out of first 11 families invited agreed to participate suggesting an adequate demand for this intervention. This requires ongoing monitoring in a larger trial.

Implementation

Program implementation dose and average LEaP attendance measured implementation fidelity. Treatment fidelity was monitored throughout the feasibility study and on average, participants attended 5.7 sessions, with missed sessions reportedly due to child or family illness or unforeseen circumstances. Given attendance at six sessions was the intended playgroup dosage, as per previous playgroup studies (Williams et al., 2012) larger trials should continue to monitor and review dosage criteria for LEaP.

Practicality

Focus group and interviews findings revealed LEaP key messages were perceived to be appropriate and the playgroup was reported to be practical to implement. However, qualitative findings from both parents and facilitators revealed effective implementation required the presence of trained and experienced clinicians with strong relational skills who worked in partnership with families to address their individual needs and concerns. These reflect core components of family centred practice (Dunst & Trivette, 1996), an underlying principle of LEaP and reinforces the importance of LEaP facilitators having access to adequate training to develop their skills in adopting family centred practice.

Adaptation

The key LEaP messages were adapted from best practice intervention research promoting language facilitation (Hancock et al., 2016; Heidlage et al., 2018), parent responsiveness (Reichmuth et al., 2013; Roberts & Kaiser, 2011) and attachment (Hoffman et al., 2006) with qualitative results indicating messages were relevant and effectively delivered within LEaP for the CDS population. However, qualitative feedback indicated LEaP required additional information on accessing community playgroups, general development and language expectations for bilingual children.

Integration

Integration feasibility was addressed by partnering with a CDS working group of staff and consumers, seeking internal CDS clinical governance approval, and quantifying LEaP resourcing requirements in the feasibility study. This consumer driven study was designed to meet a clinical need and incorporated research translation principles including partnering with CDS clinicians, consumers, managers and policy makers during LEaP development and feasibility testing. The process of choosing the LEaP target cohort from CDS demand modelling, developing the content with a CDS working group and receiving CDS governance approval ensured LEaP was developed to target the specific needs of the CDS population and to be integrated into existing organisation structures and resources as best possible. At a resourcing level, the LEaP playgroup was held within a local community centre with indoor and outdoor facilities and integration would require ongoing access to such venues. Given one participant withdrew to attend a group closer to their home suggests recruitment location and distance to playgroups needs to be accounted for in future studies.

Expansion

Previous playgroup research confirmed playgroups are a suitable intervention model for children with developmental delays (Armstrong et al., 2019a, 2019b; Armstrong et al., 2018). In the present study given LEaP was offered in addition to standard care, it represents a more expensive model than if LEaP was provided on its own. Larger efficacy trials are required to evaluate the cost effectiveness of LEaP compared to standard care and to determine if LEaP is truly feasible to be expanded and implemented within CDS. At the broader organisation and state level, LEaP fits within the priorities of the recently published Western Australian Sustainable Health Review (2019). LEaP appeared to be appropriate for Culturally and Linguistically Diverse (CALD) families, was co-located with community services, and was developed in partnership with consumers, clinicians and researchers (Sustainable Health Review, 2019). Therefore, given it supports key priorities of the Western Australian's Department of Health, it has potential to be expanded if shown to be efficacious and cost effective in large scale efficacy studies.

Efficacy testing

Despite Bowen and colleagues (2009) suggesting preliminary effectiveness should be established before larger scale efficacy trails, the purpose of this paper was to ascertain if LEaP was able to be implemented as designed and demonstrated some positive outcomes to provide sufficient assurance to warrant a larger trial (Lee, Whitehead, Jacques, & Julious, 2014). Given the non-randomised and small sample size only mean differences and confidence intervals were used to examine changes in participant outcomes to better understand the potential impacts of LEaP on parent and child outcomes.

Participants showed a minor reduction in the primary outcome of parenting stress. Unexpectedly, the average score for the total stress, and stress domains at both baseline and post-test remained within the average range (Abidin, 2012), indicating stress levels were not as high as initially predicted. Given the small sample size and the established link between parenting stress and children with disability (Hayes & Watson, 2013; Hsiao, 2017) it is recommended this measure be maintained and used in a larger study with longer term follow ups. Similarly to parent stress, baseline parenting self-efficacy scores were also higher than recorded in previous studies (Bloomfield & Kendall, 2012; Kendall, Bloomfield, Appleton, & Kitaoka, 2013). While a minor increase in parenting self-efficacy was observed, substantially increasing scores in the short time frame and small sample size may not be feasible. Given the mediating relationship between parenting self-efficacy and parenting stress (Kwok & Wong, 2000; Raikes & Thompson, 2005) it is proposed that the better than expected baseline data for parenting stress and self-efficacy may be associated and a larger study should continue examining this relationship in the population of parents of children with developmental delay and disability.

Feasibility testing did suggest participants experienced improved family support and child outcomes as seen through parent satisfaction and child performance on parent identified goals. However, given LEaP was provided in addition to standard care, it cannot be assumed this was a result of their involvement with the playgroup. The suggested improvement in reported levels of family support may reinforce the qualitative findings on playgroup acceptability with parents valuing meeting other families with shared experiences and getting support from qualified facilitators. The desire for parents of children with delay and disability to connect with other parents with shared experience is well established (Tracey, Johnston, Papps, & Mahmic, 2018) and was the rationale for choosing a family support outcome measure. It is recommended this be adopted in larger trials to further evaluate playgroup effectiveness in building family support for children with developmental delay.

Children’s performance in parent chosen goals as measured by the COPM and GAS suggested an improvement, indicating parents had more positive perceptions of their child’s performance after attending LEaP playgroup. The most common goals included using words to request items in self-care activities and play and increasing play choices. Despite the perceived improvement in communication-based goals by parents this positive change was not reflected in children’s vocabulary scores on the CDI (Fenson et al., 1993). It is acknowledged that social desirability bias may have also impacted COPM and GAS results, however, previous research have advocated for the use of these two measures to evaluate newly developed interventions, given their reliability and sensitivity to change (Novak et al., 2013). Therefore, despite limited changes in the CDI data it is suggested children attending LEaP showed some positive improvements in their outcomes based on the COPM and GAS and warrants further evaluation in a larger efficacy trial.

Limitations and future research

This study was conducted within the Perth metropolitan regional area and the content of this manualised playgroup was developed for children with developmental delay, therefore it cannot be assumed this playgroup is appropriate for other urban areas and/or rural and remote settings. However, the process of manual development and feasibility testing, including the identification of key playgroup principles and suggested outcomes measures could be applied to other clinical cohorts. It is also hoped this study demonstrates a process of manual development and feasibility testing that can be adopted by other researchers examining the effectiveness of playgroups on other clinical cohorts and populations. This study has significant limitations including a small sample size, lack of a control group and randomisation, no long term follow up and potential self-selection bias. Although these are typical to feasibility studies caution must be taken when drawing causal assumptions from findings. It does however serve the purpose of a feasibility study in determining if the LEaP playgroup could be implemented as designed and to ascertain if this warrants larger scale efficacy testing. Using Carols and Nuro's (2002) method of manual development and Bowen and colleagues' (2009) feasibility focus areas, this study indicated the LEaP playgroup appeared to be implemented as designed, and was perceived to be an acceptable intervention that may support improvements in family support and child performance. Although the manual requires minor revisions; it can be practically implemented and has the demand and preliminary results that warrant larger, more rigorous efficacy testing for children with developmental delays and their families. Based on the preliminary findings of acceptability and feasibility, and given the considerable government investment in supporting playgroups and early intervention services, it is recommended that further research be conducted to evaluate the efficacy of the LEaP playgroup for children with developmental delay in the form of a randomised control trial.

Author contributions

JA: designed and executed study, collected and conducted data analysis, and wrote the manuscript. BP: collaborated in study design, assisted in playgroup development and study execution, and manuscript editing. CE: collaborated in study design, participant recruitment, and manuscript editing. JW, ED and JM: collaborated in study design, assisted with participant recruitment, and supported manuscript writing and editing. SG: collaborated in study design, assisted in data analysis and collaborated in writing and editing the manuscript.

5.6 References

Abidin, R. (2012). *Parenting Stress Index* (4th ed.). Lutz, Florida: Psychological Assessment Resources, Inc.

Armstrong , J., Elliott, C., Davidson, E., Mizen, J., Wray, J., & Girdler, S. (2019a). Defining therapeutic playgroups: Key principles of therapeutic playgroups from the perspective of professionals. *Journal of Child and Family Studies*, 1-15.

Armstrong , J., Elliott, C., Davidson, E., Mizen, J., Wray, J., & Girdler, S. (2019b). The power of playgroups: Key components of supported and therapeutic playgroups from the perspective of parents. *Australian Occupational Therapy Journal, Under review*.

Armstrong, J., Paskal, K., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2018). What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scandinavian Journal of Occupational Therapy*, 1-22.

ARTD Consultants. (2008). *Evaluation of the Playgroup Program: Final report*. Brunswick, Victoria: Playgroup Victoria

Australian Bureau of Statistics. (2017). *6302.0 - Average Weekly Earnings, Australia, May 2017*. Canberra, Australia: Australian Government

Australian Bureau of Statistics. (2018a). 3301.0 - Births, Australia, 2017. Retrieved from http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/3301.0Main%20Features32017?opendocument&tabname=Summary&prodno=3301.0&issue=2017&num=&view=

Australian Bureau of Statistics. (2018b). 3412.0 - Migration, Australia, 2016-17 Retrieved from http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3412.0

Australian Government. (2019). *Australian Early Development Census National Report 2018*. Canberra, Australia: Commonwealth of Australia

Bandura, A. (1977). Self- efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice Hall.

Bandura, A. (1995a). Modeling. In A. S. R. Manstead & M. Hewstone (Eds.), *Blackwell encyclopedia of social psychology*. Oxford: Blackwell.

Bandura, A. (1995b). *Self-efficacy in changing societies*. New York: University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Berthelsen, D. C., Williams, K., Abad, V., Vogel, L., & Nicholson, J. (2012). *The parents at playgroup research report: Engaging families in supported playgroups*. Retrieved from http://eprints.qut.edu.au/50875/1/Parents_at_Playgroup_Final_Report.pdf

Bloomfield, L., & Kendall, S. (2012). Parenting self-efficacy, parenting stress and child behaviour before and after a parenting programme. *Primary Health Care Research* & *Development,13*(4), 364-372.

Boote, J., Telford, R., & Cooper, C. (2002). Consumer involvement in health research: A review and research agenda. *Health Policy, 61*(2), 213-236.

Borrelli, B., Sepinwall, D., Ernst, D., Bellg, A. J., Czajkowski, S., Breger, R., . . . Orwig, D. (2005). A new tool to assess treatment fidelity and evaluation of treatment fidelity across 10 years of health behavior research. *Journal of Consulting and Clinical Psychology, 73*(5), 852-860.

Boshoff, K., Alant, E., & May, E. (2005). Occupational therapy managers' perceptions of challenges faced in early intervention service delivery in South Australia. *Australian Occupational Therapy Journal, 52*(3), 232-242.

Bowen, D. J., Kreuter, M., Spring, B., Cofta-Woerpel, L., Linnan, L., Weiner, D., . . . Fernandez, M. (2009). How we design feasibility studies. *American Journal of Preventive Medicine, 36*(5), 452-457.

Carroll, K. M., & Nuro, K. F. (2002). One size cannot fit all: A stage model for psychotherapy manual development. *Clinical Psychology: Science and Practice, 9*(4), 396-406.

Cermak, S. A., Stein Duker, L. I., Williams, M. E., Lane, C. J., Dawson, M. E., Borreson, A. E., & Polido, J. C. (2015). Feasibility of a sensory-adapted dental environment for children with autism. *American Journal of Occupational Therapy, 69*(3), 1–10.

Child Development Service. (2015). *Clinical Service Redesign Implementation Plan 2015 - 2017*. Perth, Western Australia: Child and Adolescent Health Service.

Children and Early Childhood Development. (2008). *Supported playgroups and parent groups: Program guidelines*. Melbourne, Victoria: Office for Children and Early Childhood Development, Victorian Government Department of Education and Early Childhood Development

Cho, J. Y., & Lee, E. H. (2014). Reducing confusion about grounded theory and qualitative content analysis: Similarities and differences. *Qualitative Report, 32*(19), 1-20.

Commerford, J., & Robinson, E. (2016). *Supported playgroups for parents and children: The evidence for their benefits*. Melbourne, Victoria: Australian Institute of Family Studies Child Family Community Australia.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2013). Developing and evaluating complex interventions: The new Medical Research Council guidance. *International Journal of Nursing Studies, 50*(5), 587-592.

Dadich, A., & Spooner, C. (2008). Evaluating playgroups: An examination of issues and options. *The Australian Community Psychologist, 20*(1), 95-104.

Dunst, C., Jenkins, V., & Trivette, C. (1988). Family Support Scale. In C. J. Dunst, C. M. Trivette, & A. G. Deal (Eds.), *Enabling and empowering families: Principles and guidelines for practice* (Vol. 153-174). Cambridge, MA: Brookline Books.

Dunst, C., & Trivette, C. (1996). Empowerment, effective helpgiving practices and family-centered care. *Pediatric Nursing, 22*(4), 334-337.

Dunst, C., Trivette, C., & Hamby, D. (2007). Meta-analysis of family-centered helpgiving practices research. *Mental Retardation & Developmental Disabilities Research Reviews, 13*(4), 370-378.

Dunst, C., Trivette, C., Humphries, T., Raab, M., & Roper, N. (2001). Contrasting approaches to natural learning environment interventions. *Infants and Young Children, 14*(2), 48-63. doi:

Early Childhood Intervention Australia. (2016). *National guidelines: Best practice in early childhood intervention*. Sydney, New South Wales: Early Childhood Intervention.

Espe-Sherwindt, M. (2008). Family-centred practice: Collaboration, competency and evidence. *Support for Learning, 23*(3), 136-143.

Fabrizi, S., & Hubbell, K. (2017). The role of occupational therapy in promoting playfulness, parent competence, and social participation in early childhood playgroups: A pretest posttest design. *Journal of Occupational Therapy, Schools, & Early Intervention, 10*(4), 346-365.

Fabrizi, S., Ito, M., & Winston, K. (2016). Effect of occupational therapy-led playgroups in early intervention on child playfulness and caregiver responsiveness: A repeated-measures design. *American Journal of Occupational Therapy, 70*(2), 1-9.

Fenson, L., Dale, P., & Reznick, J. (1993). *The MacArthur Communicative Development Inventories: User's Guide and Technical Manual*. San Diego, CA: Singular Publishing Group.

Fox, S. E., Levitt, P., & Nelson, C. A., 3rd. (2010). How the timing and quality of early experiences influence the development of brain architecture. *Child Devolopment, 81*(1), 28-40.

Gagné, M., & Deci, E. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*, 331-362.

Hancock, K., Cunningham, N., Lawrence, D., Zarb, D., & Zubrick, S. (2015). Playgroup participation and social support outcomes for mothers of young children: A longitudinal cohort study. *PLOS One, 10*(7), e0133007.

Hancock, K., Lawrence, D., Mitrou, F., Zarb, D., Berthelsen, D., Nicholson, J., & Zubrick, S. (2012). The association between playgroup participation, learning competence and social-emotional wellbeing for children aged four-five years in Australia. *Australasian Journal of Early Childhood, 37*(2), 72-81.

Hancock, T., Ledbetter-Cho, K., Howell, A., & Lang, R. (2016). Enhanced Milieu Teaching. In R. Lang, T. B. Hancock, & N. N. Singh (Eds.), *Early Intervention for Young Children with Autism Spectrum Disorder* (pp. 177-218). Cham: Springer International Publishing.

Hanft, B. (2000). Therapy in natural environments: The means or end goal for early intervention? *Infants and Young Children, 12*(4), 1-13.

Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism & Developmental Disorders, 43*(3), 629-642.

Heidlage, J. K., Cunningham, J. E., Kaiser, A. P., Trivette, C. M., Barton, E. E., Frey, J. R., & Roberts, M. Y. (2018). The effects of parent-implemented language interventions on child linguistic outcomes: A meta-analysis. *Early Childhood Research Quarterly, 51 (1),* 6-23.

Hoffman, K. T., Marvin, R. S., Cooper, G., & Powell, B. (2006). Changing toddlers' and preschoolers' attachment classifications: The circle of security intervention. *Journal of Consulting and Clinical Psychology, 74*(6), 1017-1026.

Hsiao, Y. J. (2017). Parental Stress in Families of Children With Disabilities. *Intervention in School and Clinic, 53*(4), 201-205.

IBM Corp. (2016). IBM SPSS Statistics for Windows, Version 24.0. In. Armonk, NY: IBM Corp.

Jackson, D. (2013). Creating a place to ‘be’: Unpacking the facilitation role in three supported playgroups in Australia. *European Early Childhood Education Research Journal, 21*(1), 77-93.

Jerant, A., Friedericks-Fitzwater, M., & Moore, M. (2005). Patient’s perceived barriers to active self-management in chronic conditions. *Patient Education and Counselling, 57*, 300-307.

Kendall, S., & Bloomfield, L. (2005). Developing and validating a tool to measure parenting self-efficacy. *Journal of Advanced Nursing, 51*(2), 174-181.

Kendall, S., Bloomfield, L., Appleton, J., & Kitaoka, K. (2013). Efficacy of a group-based parenting program on stress and self-efficacy among Japanese mothers: A quasi-experimental study. *Nursing and Health Sciences, 15*(4), 454-460.

King, G., McDougall, J., Palisano, R. J., Gritzan, J., & Tucker, M. A. (1999). Goal attainment scaling: Its use in evaluating, pediatric therapy programs. *Physical and Occupational Therapy in Pediatrics, 19*(2), 31-52.

King, G., Strachan, D., Tucker, M., Duwyn, B., Desserud, S., & Shillington, M. (2009). The application of a transdisciplinary model for early intervention services. *Infants & Young Children: An Interdisciplinary Journal of Special Care Practices, 22*(3), 211-223.

Knuas, M., & Warren, J. (2015). A supported playgroup located on school grounds: Developing family relationships within a school environment to support children's transition to school. *New Zealand Research in Early Childhood Education Journal, 18*, 20-36.

Kwok, & Wong. (2000). Mental health of parents with young children in Hong Kong: The roles of parenting stress and parenting self-efficacy. *5*(1), 57-65.

Law, M., Baptiste, S., Carswell, A., McColl, M., Polatajko, H., & Pollock, N. (2005). *The Canadian Occupational Performance Measure* (4th ed.). Ottowa, Canada: Canadian Association of Occupational Therapists.

Lee, E. C., Whitehead, A. L., Jacques, R. M., & Julious, S. A. (2014). The statistical interpretation of pilot trials: should significance thresholds be reconsidered? *BMC Medical Research Methodology, 14*(1), 41-49.

Mathie, E., Wilson, P., Poland, F., McNeilly, E., Howe, A., Staniszewska, S., . . . Goodman, C. (2014). Consumer involvement in health research: A UK scoping and survey. *International Journal of Consumer Studies, 38*(1), 35-44.

McLean, K., Edwards, S., Evangelou, M., Skouteris, H., Harrison, L. J., Hemphill, S. A., . . . Lambert, P. (2017). Playgroups as sites for parental education. *Journal of Early Childhood Research, 15*(3), 227-237.

Medical Outcomes Trust. (2006). Instruments. Retrieved from http://www.outcomes-trust.org/instruments.htm#SF-12

Moore, T. (2006). *Early childhood and long term development: The importance of the early years*. Western Australia, Australia: Australian Research Alliance for Children and Youth.

Mullen, E. M. (1995). *Mullen Scales of Early Learning*. Circle Pines, MN: American Guidance Service.

Nicholson, J. M., Berthelsen, D., Abad, V., Williams, K., & Bradley, J. (2008). Impact of music therapy to promote positive parenting and child development. *Journal of Health Psychology, 13*(2), 226-238.

Novak, I., McIntyre, S., Morgan, C., Campbell, L., Dark, L., Morton, N., . . . Goldsmith, S. (2013). A systematic review of interventions for children with cerebral palsy: State of the evidence. *Developmental Medicine and Child Neurology, 55*(10), 885-910.

Portney, L. G., & Watkins, M. P. (2000). *Foundations of clinical research: Applications to practice*. New Jersey: Prentice-Hall.

Pyatak, E. A., Carandang, K., & Davis, S. (2015). Developing a manualized occupational therapy diabetes management intervention: Resilient, empowered, active living with diabetes. *OTJR: Occupation, Participation and Health, 35*(3), 187-194.

QSR International Pty Ltd. (2012). NVivo qualitative data analysis Software (Version 11 ed).

Raab, M., & Dunst, C. (2004). Early intervention practitioner approaches to natural environment interventions. *Journal of Early Intervention, 27*(1), 15-26.

Raikes, H. A., & Thompson, R. A. (2005). Efficacy and social support as predictors of parenting stress among families in poverty. *Infant Mental Health, 26*(3), 177-190.

Reichmuth, K., Embacher, A. J., Matulat, P., Am Zehnhoff-Dinnesen, A., & Glanemann, R. (2013). Responsive parenting intervention after identification of hearing loss by Universal Newborn Hearing Screening: The concept of the Muenster Parental Programme. *International Journal of Pediatric Otorhinolaryngology, 77*(12), 2030-2039.

Roberts, M., & Kaiser, A. (2011). The effectiveness of parent-implemented language interventions: A meta-analysis. *American Journal of Speech - Language Pathology (Online), 20*(3), 180-199A.

Rush, D., & Shelden, M. (2006). Coaching practices rating scale for assessing adherence to evidence-based early childhood intervention practices. *Casetools, 2*(2), 1-7.

Rush, D., & Shelden, M. (2011). *The Early Childhood Coaching Handbook*. Baltimore, Maryland, USA: Brookes Publishing Co.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Shilling, V., Morris, C., Thompson-coon, J., Ukoumunne, O., Rogers, M., & Logan, S. (2013). Peer support for parents of children with chronic disabling conditions: A systematic review of quantitative and qualitative studies. *Developmental Medicine and Child Neurology, 55 (*7), 602-609.

Sneddon, J., & Haynes, K. (2003). *Early intervention parenting project: improving access to playgroups for all families project*. Retrieved from http://www.playgroup.org.au/files/Early%20Intervention%20Parenting%20Project%20Report.pdf

Squires, J., & Bricker, D. (2009). *Ages & Stages Questionnaires* (3rd ed.). Baltimore, MD: Brookes Publishing.

Sustainable Health Review. (2019). *Sustainable Health Review: Final report to the Western Australian Government*. Western Australia: Department of Health.

Tracey, D., Johnston, C., Papps, F. A., & Mahmic, S. (2018). How do parents acquire information to support their child with a disability and navigate individualised funding schemes? *Journal of Research in Special Educational Needs, 18*(1), 25-35.

Tuominen-Eriksson, A., Svensson, Y., & Gunnarsson, R. (2013). Children with disabilities are often misdiagnosed initially and children with neuropsychiatric disorders are referred to adequate resources 30 months later than children with other disabilities. *Journal of Autism and Developmental Disorders, 43*(3), 579-584.

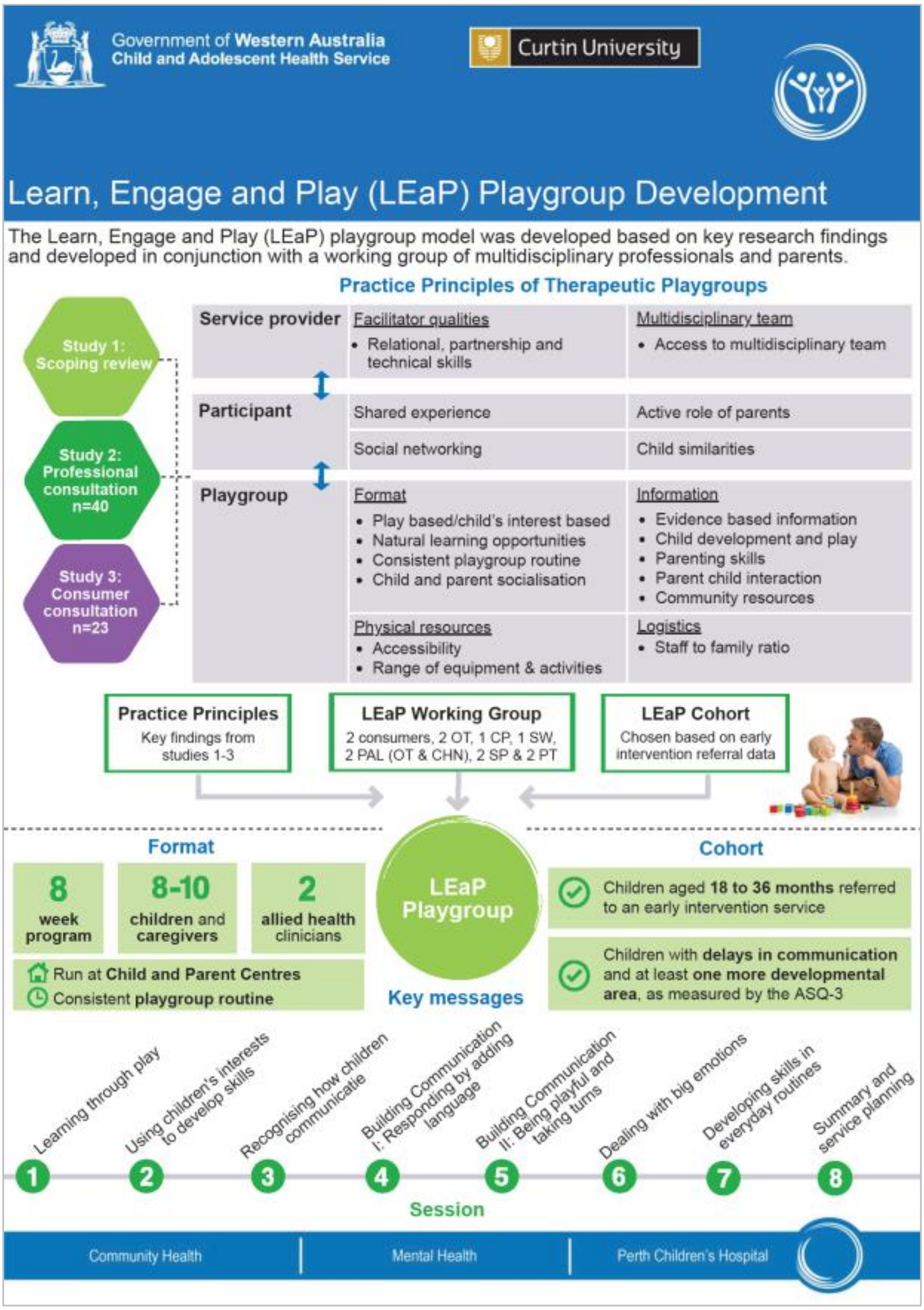
Vivanti, G., Paynter, J., Duncan, E., Fothergill, H., Dissanayake, C., & Rogers, S. J. (2014). Effectiveness and feasibility of the early start denver model implemented in a group-based community childcare setting. *Journal of Autism and Developmental Disorders, 44*(12), 3140-3153.

Western Australian Industrial Relations Commission. (2016). *WA Health - HSUWA - PACTS - Industrial Agreement 2016*. Perth, Western Australia: Government of Western Australia

Williams, K., Berthelsen, D., Nicholson, J. M., Walker, S., & Abad, V. (2012). The effectiveness of a short-term group music therapy intervention for parents who have a child with a disability. *Journal of Music Therapy, 49*(1), 23-44.

Williams, K., Berthelsen, D., Viviani, M., & Nicholson, J. (2018). Facilitated parent-child groups as family support: A systematic literature review of supported playgroup studies. *Journal of Child and Family Studies, 27*(8), 2367-2383.

5.7 Manual Development Infographic



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Learn, Engage and Play (LEaP) Playgroup Development

The Learn, Engage and Play (LEaP) playgroup model was developed based on key research findings and developed in conjunction with a working group of multidisciplinary professionals and parents.

Study 1: Scoping review

Study 2: Professional consultation n=40

Study 3: Consumer consultation n=23

Practice Principles of Therapeutic Playgroups

Service provider	Facilitator qualities • Relational, partnership and technical skills	Multidisciplinary team • Access to multidisciplinary team
Participant	Shared experience	Active role of parents
	Social networking	Child similarities
Playgroup	Format • Play based/child's interest based • Natural learning opportunities • Consistent playgroup routine • Child and parent socialisation	Information • Evidence based information • Child development and play • Parenting skills • Parent child interaction • Community resources
	Physical resources • Accessibility • Range of equipment & activities	Logistics • Staff to family ratio

Practice Principles
Key findings from studies 1-3

LEaP Working Group
2 consumers, 2 OT, 1 CP, 1 SW, 2 PAL (OT & CHN), 2 SP & 2 PT

LEaP Cohort
Chosen based on early intervention referral data

LEaP Playgroup

Format

8 **week program**

8-10 **children and caregivers**

2 **allied health** clinicians

Run at **Child and Parent Centres**
Consistent **playgroup routine**

Cohort

✓ Children aged **18 to 36 months** referred to an early intervention service

✓ Children with **delays in communication** and at least **one more developmental area**, as measured by the ASQ-3

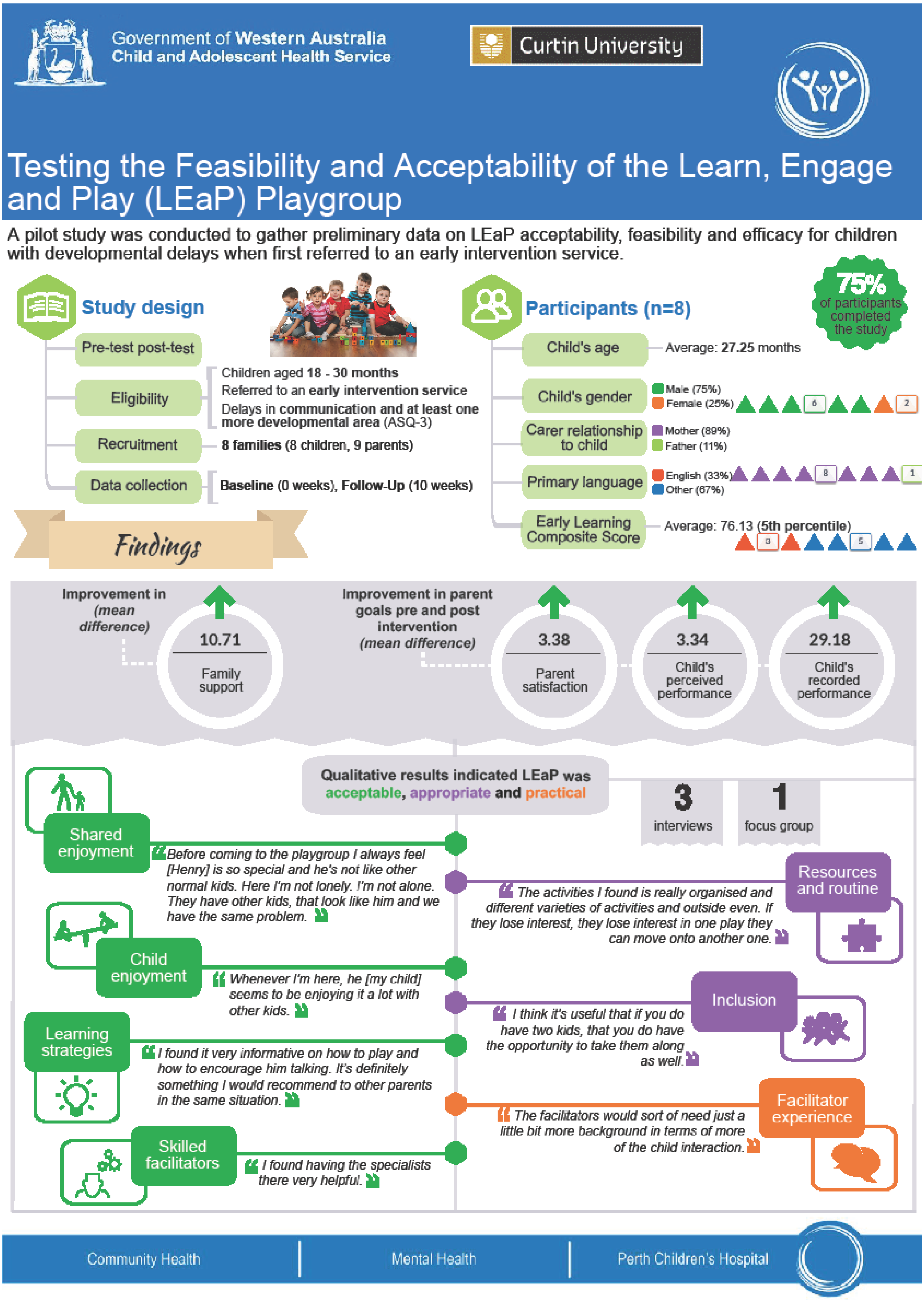
Key messages

1. Learning through play
2. Using children's interests to develop skills
3. Recognising how children communicatie
4. Building Communication I: Responding by adding language
5. Building Communication II: Being playful and taking turns
6. Dealing with big emotions
7. Developing skills in everyday routines
8. Summary and service planning

Session

Community Health | Mental Health | Perth Children's Hospital

5.8 Feasibility Trial Infographic



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Testing the Feasibility and Acceptability of the Learn, Engage and Play (LEaP) Playgroup

A pilot study was conducted to gather preliminary data on LEaP acceptability, feasibility and efficacy for children with developmental delays when first referred to an early intervention service.

Study design

Pre-test post-test

Eligibility
- Children aged **18 - 30 months**
- Referred to an **early intervention service**
- Delays in **communication and at least one more developmental area** (ASQ-3)

Recruitment — **8 families** (8 children, 9 parents)

Data collection — **Baseline** (0 weeks), **Follow-Up** (10 weeks)

Participants (n=8)

75% of participants completed the study

Child's age — Average: **27.25** months

Child's gender — Male (75%), Female (25%)

Carer relationship to child — Mother (89%), Father (11%)

Primary language — English (33%), Other (67%)

Early Learning Composite Score — Average: 76.13 (**5th percentile**)

Findings

Improvement in *(mean difference)*

10.71 — Family support

Improvement in parent goals pre and post intervention *(mean difference)*

3.38 — Parent satisfaction

3.34 — Child's perceived performance

29.18 — Child's recorded performance

Qualitative results indicated LEaP was acceptable, appropriate and practical

3 interviews

1 focus group

Shared enjoyment
> Before coming to the playgroup I always feel [Henry] is so special and he's not like other normal kids. Here I'm not lonely. I'm not alone. They have other kids, that look like him and we have the same problem.

Child enjoyment
> Whenever I'm here, he [my child] seems to be enjoying it a lot with other kids.

Learning strategies
> I found it very informative on how to play and how to encourage him talking. It's definitely something I would recommend to other parents in the same situation.

Skilled facilitators
> I found having the specialists there very helpful.

Resources and routine
> The activities I found is really organised and different varieties of activities and outside even. If they lose interest, they lose interest in one play they can move onto another one.

Inclusion
> I think it's useful that if you do have two kids, that you do have the opportunity to take them along as well.

Facilitator experience
> The facilitators would sort of need just a little bit more background in terms of more of the child interaction.

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Chapter 6 Paper V: Randomised Control Trial of the LEaP Playgroup

Foreword

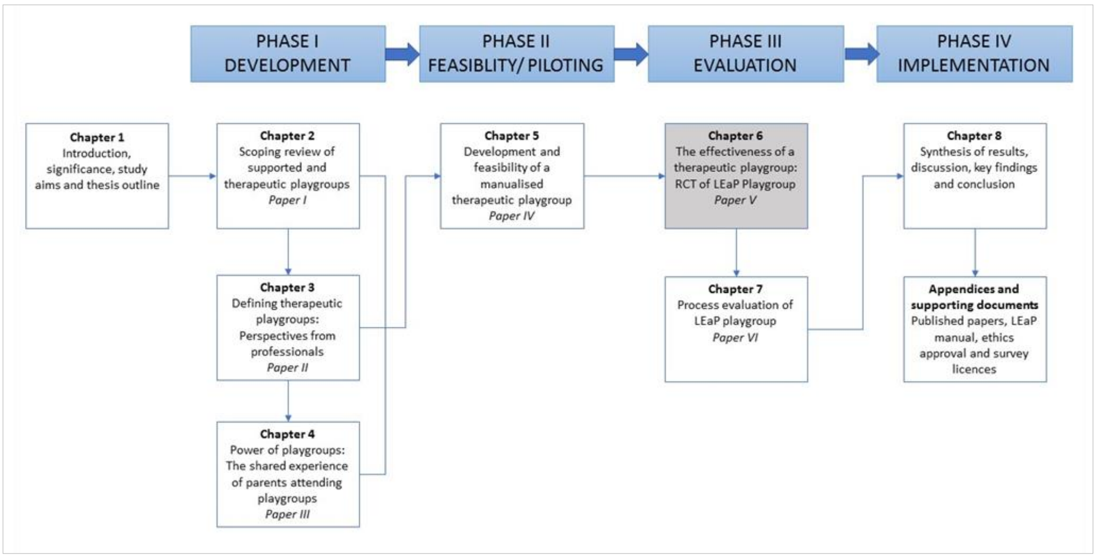
Chapter 6 describes the single-blind two-armed randomised control trial undertaken to evaluate the efficacy of the Learn, Engage and Play (LEaP) playgroup on parent and child outcomes. Trailed within the context of a community-based early intervention service, this study aimed to examine how effectively LEaP met the needs of children and families when first referred to an early intervention service. In the KTA framework[8] this chapter is a central component of the 'evaluate outcomes' stage of the action cycle.

Findings demonstrated LEaP did not show a significant difference on the primary outcome of parenting stress; however, it did demonstrate a significant improvement in child goal achievement and family support compared to a control group. This indicates LEaP is a promising intervention for children with developmental delay and their families and highlights the importance of ongoing playgroup evaluation with clinical implementation using goal-based outcomes assessments.

Paper V study methodology

Study Aim	Study Design	Sample	Data Collection	Data Analysis	KTA Framework Stage
To evaluate the efficacy of the LEaP playgroup on parent, child and service outcomes.	Single-blind two-armed randomised control trial	Children with developmental delays (n=71) and their caregivers (n=72)	Timing: Baseline (T1), 12 weeks post-baseline (T2) and final follow-up (T3) at 28 weeks.	Linear mixed model regression Descriptive statistics	*Action Cycle*: Evaluate outcomes

Paper V mapped to thesis chapters



The manuscript has been published in the Journal *of Autism and Developmental Disorders,* impact factor 3.047.

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PAPER V: RANDOMISED CONTROLLED TRIAL OF A THERAPEUTIC PLAYGROUP FOR CHILDREN WITH DEVELOPMENTAL DELAYS

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6.1 Abstract

A single-blind randomised control trial investigated the effectiveness of the Learn, Engage and Play (LEaP) playgroup. Seventy-one children with developmental delay were randomly allocated to an 8-week LEaP playgroup or control group and followed up at 12 and 28 weeks. On the primary outcome measure, LEaP demonstrated significant within group changes at 28 weeks (parenting distress p=0.018) but no between group changes. On secondary outcome measures, at 12 weeks LEaP produced significantly better outcomes than control in goal achievement (performance p=0.022; function p=0.008) and family support (p=0.024), with LEaP continuing to demonstrate significantly better goal achievement (child performance p=0.042; function p=0.012) at 28 weeks. Findings indicate LEaP may assist in improving family support and goal achievement outcomes for children with developmental delays.

Keywords: randomised control trial, therapeutic playgroups, developmental delay, and early intervention.

6.2 Introduction

Increasing referrals, competing demands for limited resources and extensive waiting lists are challenges facing many government and non-government early intervention services, nationally and internationally. In Australia, 20 percent of children are considered developmentally vulnerable or at risk (Australian Government, 2019), with seven percent having an established disability (Australian Bureau of Statistics, 2012). The epidemiology of disability has shifted with a reduction in the formerly dominant physical disabilities and increasing prevalence of neurodevelopmental and behavioural disorders (Halfon, Houtrow, Larson, & Newacheck, 2012). These changes have led to increasing demand for early intervention services such as those provided by the metropolitan Child Development Service (CDS) of Perth, Western Australia. This publicly funded agency provides services for approximately 20,000 children with developmental delay and/or disability across the Perth metropolitan region per year, receiving approximately 1,500 new referrals each month, with a waiting list for some services (Child Development Service, 2015a). Waiting lists are concerning given they are associated with an increase in parental stress and uncertainty, a compounding of developmental delays, and the development of secondary emotional and social issues (Miller et al., 2008; Rivard, Terroux, Parent-Boursier, & Mercier, 2014). Given the effectiveness of time sensitive early intervention services, and in the context of limited resourcing, there is a need to investigate alternative and innovative models to address waiting lists such as on-line and group therapy in place of individual or face-to-face therapy (Freeman, 2008).

Parents of children with developmental delay and/or disability often experience higher levels of stress, social isolation and social exclusion than parents of typically developing children (Boyd, 2002; Hassall, Rose, & McDonald, 2005; Hayes & Watson, 2013). These are further exacerbated when needing to wait for services (Rivard et al., 2014). While parenting stress is correlated with difficult child behaviours and low parenting self-efficacy, its impact is mitigated by social support (Hassall et al., 2005). Studies consistently highlight the importance of parents building social connections with other parents in buffering parental stress and improving parent and child functioning (Boyd, 2002; Shilling et al., 2013). It is not surprising therefore, that parents often seek support from other parents with similar experiences to obtain emotional support, learn from and share strategies, and to collectively advocate for better services (Law, King, Stewart, & King, 2001).

The concept of a therapeutic playgroup was suggested by both CDS consumers and staff as a model for caregivers to access information, gain support from professionals and facilitate parent networking following the identification of a developmental concern (Child Development Service, 2015b). Playgroups are predominantly an Australian model but have also been documented in the United Kingdom, New Zealand and North America (Williams, Berthelsen, Viviani, & Nicholson, 2018). Internationally they resemble other parent and child programs including child and parent meeting places (Vandenbroeck, Boonaert, Van Der Mespel, & De Brabandere, 2009), parent and toddler groups (Needham, 2010), family support movement (Moran & Ghate, 2005), and "Room to Play" (Evangelou, Smith, & Sylva, 2006). These informal community-based groups cater broadly for parents and preschool aged children; aiming to increase parenting capacity, build community networks, and promote child development and wellbeing (Children and Early Childhood Development, 2008). Playgroups generally run weekly in community settings, providing opportunities for families to meet and connect with others, while exposing children to a range of play and socialisation experiences (Commerford & Robinson, 2016; Wright, Warren, Burriel, & Sinnott, 2019). There are varying playgroup models comprising community, supported and therapeutic playgroups. Community playgroups are universal groups led and organised by parents. Supported playgroups are coordinated by a facilitator who organises group activities and generally targets families and children with specific needs or vulnerabilities (Cumming & Wong, 2008). Therapeutic playgroups provide targeted therapeutic information within a playgroup format, and are facilitated by a qualified professional, targeting children with specific disabilities or developmental needs and their families (Armstrong et al., 2019; Children and Early Childhood Development, 2008).

Some propose the power of the playgroup model lies in their relaxed, informal, and inclusive nature (Wright et al., 2019). In Australia playgroups are widely accessed, with over 60 percent of children having attended a playgroup by the age of five years (Hancock et al., 2012). Attending a playgroup is therefore normalised for Australian children and their families, and is perceived as less threatening than engaging in formalised parenting programs or support services (Stratigos & Fenech, 2018). This results in playgroups being particularly effective in engaging vulnerable families who may otherwise not access more formalised services (McLean et al., 2017).

Services are increasingly adopting playgroups as a model to provide tailored support to children and families (Ericksen et al., 2018). Studies investigating the effectiveness of supported playgroups in delivering child nutrition information to vulnerable families (Myers, Riggs, Lee, Gibbons, & Naughton, 2019), and promoting healthy eating, activity and play based learning (Lloyd et al., 2017), both concluded playgroups were an effective 'soft entry' model to deliver information to parents and children outside of formalised services. In examining supported playgroups targeted for socioeconomically disadvantaged families, mothers with mental illness and parents of children with disability, playgroups were found to be as effective as established evidence based parenting models, and more advantageous in delivering information given their unstructured and community-based model (Wright et al., 2019). Playgroups therefore have capacity to serve as an effective service option or supplement for families referred to early intervention services, connecting them with other families, whilst potentially capturing a wider range of families who may otherwise not access formalised services (Wilkop & Clothier, 2013).

Despite the strong theoretical potential for their success, there is a lack of empirical research on therapeutic playgroups (Berthelsen, Williams, Abad, Vogel, & Nicholson, 2012). Currently, there is only one published randomised control trial examining the effectiveness of therapeutic playgroups, focusing on mothers of infants with postnatal mental health challenges (Ericksen et al., 2018) rather than children with developmental delays. This highlights the need for rigorous research on therapeutic playgroups for children with developmental delays. This study follows previous work from the authors that systematically defined and developed the Learn, Engage and Play (LEaP) therapeutic playgroup model for children with developmental delay using the overarching Medical Research Council's (MRC) framework (Craig et al., 2008) for the development and evaluation of complex interventions. This study aimed to evaluate the efficacy of LEaP plus treatment as usual (TAU) in comparison to TAU only in improving parent and child outcomes when first referred to an early intervention service. The primary study hypothesis was that caregivers who received LEaP plus TAU would demonstrate a greater reduction in parenting stress, as measured by the

Parenting Stress Index-Short Form (PSI-4 SF; Abidin, 2012) compared to parents receiving TAU only. It also hypothesised that caregivers attending LEaP plus TAU would demonstrate greater improvements in parenting self-efficacy, family social support and quality of life, and children would demonstrate greater improvements in goal achievement and communication skills compared to those receiving TAU only.

6.3 Methods

Design

A single-blind randomised control trial evaluated the efficacy of the LEaP playgroup and TAU on parent and child outcomes compared to TAU at a community based early intervention service (CDS). The trial was registered (ACTRN12617000770369) and approved by the Perth Children's Hospital Human Research Ethics Committee (2015181EP) and Curtin Human Research Ethics Office (HR228/2015).

Participants

Participants included children with developmental delay and their caregivers and were purposively recruited from new referrals to the CDS between May 2017 and February 2018. Children were eligible if aged 18 to 36 months when referred and if they scored in the 'at risk' range (two standard deviations below the mean) for two or more developmental domains as measured by the Ages and Stages Questionnaire (ASQ-3; Squires & Bricker, 2009), one of which was required to be Communication. Children were excluded if they had an established disability diagnosis or if caregivers required an interpreter to access the intervention. Children with a diagnosed disability were eligible for services external to CDS and were consequently transitioned to such services, for this reason they were excluded from this study.

Procedure

Randomisation

Child development was assessed at baseline using the Mullen's Scale of Early Learning (MSEL; Mullen, 1995) with parents completing a family demographic questionnaire at the same time point. Following baseline assessment, participants were randomly allocated to either the intervention (LEaP plus TAU) or control (TAU) group. Participants were enrolled in the study by CDS clinicians or research team members and randomised using a random allocation sequence. Participants were informed of treatment allocation by an individual not involved with the trial.

Blinding

Participants were assessed at baseline (0 weeks), post-treatment (12 weeks post-baseline), and 16 weeks following treatment completion (28 weeks post-baseline). Assessments were conducted within two weeks of these time points by an assessor blinded to group allocation. Participants were not blind to group allocation.

Interventions

Intervention - LEaP Playgroup

Participants randomised to the intervention group received the manualised LEaP playgroup and TAU (LEaP plus TAU). LEaP sessions ran for two hours, once a week for eight weeks at a community centre. LEaP was delivered to a maximum of eight families at any one time and facilitated by two allied health clinicians. LEaP was attended by children and their caregiver/s. Siblings and other family members were permitted to attend LEaP sessions and caregivers could alternate their attendance if required. Sessions followed a consistent routine including play-based indoor and outdoor activities, group music and singing, story time, snack time, and farewell activities. The overarching theoretical framework of the service model drew heavily from family centred practice (Dunst & Trivette, 1996), self-efficacy theory (Bandura, 1977) and peer support theory (Shilling et al., 2013). Clinicians remained consistent across all sessions, working within a transdisciplinary approach (King et al., 2009) and employing a coaching framework (Rush & Shelden, 2011) to deliver targeted information. Key informational content focused on parent responsiveness (Roberts & Kaiser, 2011), parent-child attachment (Hoffman, Marvin, Cooper, & Powell, 2006), and language facilitation strategies (Heidlage et al., 2018). Parents were encouraged to practise strategies between sessions. A minimum of six sessions were required to meet dosage (Williams, Berthelsen, Nicholson, Walker, & Abad, 2012). Dosage was calculated as the number of sessions the child attended with their caregiver/s, regardless of whether caregivers alternated attendance. Parents were not discouraged from accessing other therapies as part of their TAU. All other therapy or contact with health professionals was recorded by parents completing a treatment diary and referred to as ‘health care dosage.’ Caregivers were involved in all stages of LEaP development, with comprehensive details of the LEaP protocol and content development previously published (Armstrong et al., 2019). To ensure treatment fidelity LEaP facilitators were required to attend a one-day training on the LEaP playgroup protocol and reach coaching fidelity (Rush & Shelden, 2011) prior to LEaP commencing. All sessions were filmed and scored against a fidelity checklist by a member of the research team, with feedback and coaching supervision provided fortnightly to ensure a minimum of 90% fidelity to LEaP protocol.

Control - ‘Treatment as Usual’ (TAU)

Families in the TAU only group received usual therapy offered within CDS or accessed services privately. Contact with other health professionals was recorded by parents completing a treatment diary and referred to as ‘health care dosage’. This included speech pathology, occupational therapy, physiotherapy, clinical psychology, social work, and paediatrician and audiology appointments.

Sample Size

A statistical power calculation was conducted based on a previous pilot study by the authors using a T-test: difference between two independent means on the primary outcome measure score, the Parenting Stress Index- Short Form (PSI-4 SF; Abidin, 2012). With a total stress score of 80 with a standard deviation of 20 (Armstrong et al., 2019) a total sample of 86 was required to detect a clinically significant change of a medium effect size ($d = 0.5$) in the PSI-4 SF score with 80% power and $\alpha=0.05$.

Outcomes

Primary Outcome Measure- Parenting Stress

The PSI-4 SF is derived from the full 120 item Parenting Stress Index (Abidin, 2012) and measures parents’ sources of stress, providing a score on: Parental Distress (PD), Parent Child Dysfunctional Interaction (P-CDI), and Difficult Child (DC), and an overall summary score. It is strongly correlated (.94) with the long form and has good test-retest reliability of .85, .68, .78 and .84, respectively (Abidin, 2012). Higher scores are indicative of higher levels of stress. A total score above the 85th percentile is considered clinically significant (Abidin, 2012).

Parenting Self-Efficacy

The Tool to Measure Parenting Self-Efficacy (TOPSE, Kendall & Bloomfield, 2005) measures eight dimensions of parenting self-efficacy: emotion and affection, play and enjoyment, empathy and understanding, routines, control, discipline and boundary setting, pressure, self-acceptance, and learning and knowledge. It has demonstrated high internal reliability (.8 to .89) and overall reliability (.94) (Kendall & Bloomfield, 2005), and has been tested on parents of children with developmental disabilities (Bloomfield, Kendall, & Fortuna, 2010).

Goal Achievement

The Canadian Occupational Performance Measure (COPM; Law et al., 2005) and the Goal Attainment Scale (GAS; King, McDougall, Palisano, Gritzan, & Tucker, 1999) identified and rated children's performance and parent satisfaction on parent chosen goals. The GAS is used in conjunction with the COPM to measure change in function with this approach demonstrating good-to-excellent interrater reliability (.82) (Steenbeek, Ketelaar, Lindeman, Galama, & Gorter, 2010) and sensitivity to change (Steenbeek, Ketelaar, Galama, & Gorter, 2007) in paediatric populations. A change score of 2 or more is considered clinically significant on the COPM and a score of 0 or more is considered a clinically significant GAS score. A weighted average was calculated for COPM Satisfaction (COPM-S) and Performance (COPM-P) scores and a GAS T-score was calculated (Kiresuk & Sherman, 1968). Examples of goals set by parents included: For [John] to start using words to request items; for [John] to intentionally use words during play; and for [John] to engage in play with other children.

Family Support

The Family Support Scale (Dunst, Jenkins, & Trivette, 1984; Dunst, Jenkins, & Trivette, 1988) evaluated the perceived level of support families receive from informal and formal sources of support. The 18 item scale provides a total score of social support (Dunst, Trivette, & Hamby, 2019) and reported to have high test-retest reliability (.91); and internal consistency alpha coefficient (.79). This scale was originally developed to examine social support for parents of children with developmental disabilities (Dunst et al., 1984). Higher scores indicate greater levels of family support.

Quality of Life

The Medical Outcome Study Short Form Health Survey (SF-12 Version 1; Ware, Kosinski, & Keller, 1996) measured caregiver quality of life. A Mental Component Summary (MCS) score and Physical Component Summary (PCS) score are derived using a scoring algorithm and normed using a United States population (mean=50; SD=10; Ware, Kosinski, & Keller, 1995). All surveys were scored using licenced software (OPTUM, 2019). Higher scores indicate a greater quality of life. This has been validated and normed on the Australian population (Sanderson & Andrews, 2002) and used in previous Australian studies examining caregivers of children with developmental disabilities (Bourke et al., 2008).

Communication

The MacArthur-Bates Communicative Developmental Inventories (CDI) Words and Sentences and CDI:III (Fenson, Dale, & Reznick, 1993) are caregiver checklists used to measure children's early language and social communication. The CDI Words and Sentences is appropriate for children aged 16 to 30 months and has high internal consistency for the vocabulary scale (.96), gesture scale (.88) and complexity scale (.95); and high test-retest reliability for vocabulary production (.95) (Fensen et al., 2007). The CDI:III is used for children aged 30 to 36 months and shown to be moderately correlated with other language assessment for this age range (.53, .56, and .52) (Feldman et al., 2005). Only the Vocabulary scale were compared and analysed across measures.

Statistical Analysis

Continuous data are presented as means and standard deviations or medians and interquartile ranges (for skewed distributions). Categorical data are presented as frequencies and proportions. Descriptive statistics summarised participant characteristics at baseline and compared between groups to ensure randomisation success.

Intention to treat (ITT; Fisher, Elbaum, & Coulter, 2012) analysis was adopted. A mixed model regression with robust standard errors was used to examine between and within group differences, accounting for correlation over time. A treatment by time interaction compared the treatment effect on the average change in outcomes. When calculating between group differences the corresponding baseline value was entered into the model. Poisson regression was used for CDI Vocabulary due to a skewed distribution with a floor effect, which was not improved by transformation. Participants included two sets of twins with both sets allocated to the control group. For each pair of twins, only one set of parent questionnaires was completed, but individual child scores were treated separately. For three participants both parents decided to complete questionnaires. These correlations were accounted for in the mixed model.

Clinically significant change was examined for goal achievement (GAS and COPM) and reported as proportions, with the differences between groups examined using Pearson's chi-squared test. All data were analysed using Stata 14.1 (StataCorp, 2015). Statistical significance was considered $p<0.05$.

6.4 Results

Participants

Across the trial period a total of 261 children were assessed for eligibility with 71 children recruited including two sets of twins. A high proportion of children did not meet criteria (n=111) due to caregivers not completing the ASQ-3 (Squires & Bricker, 2009); ASQ-3 scores not being low enough; or the family being discharged after declining all early intervention services. Eligible participants that declined to participate (n=39) stated this was due to work commitments, distance to playgroup location, complex family circumstances or competing therapy services. Other eligible participants were not invited to participate (n=39) because they moved out of the recruitment catchment area or were unable to be contacted.

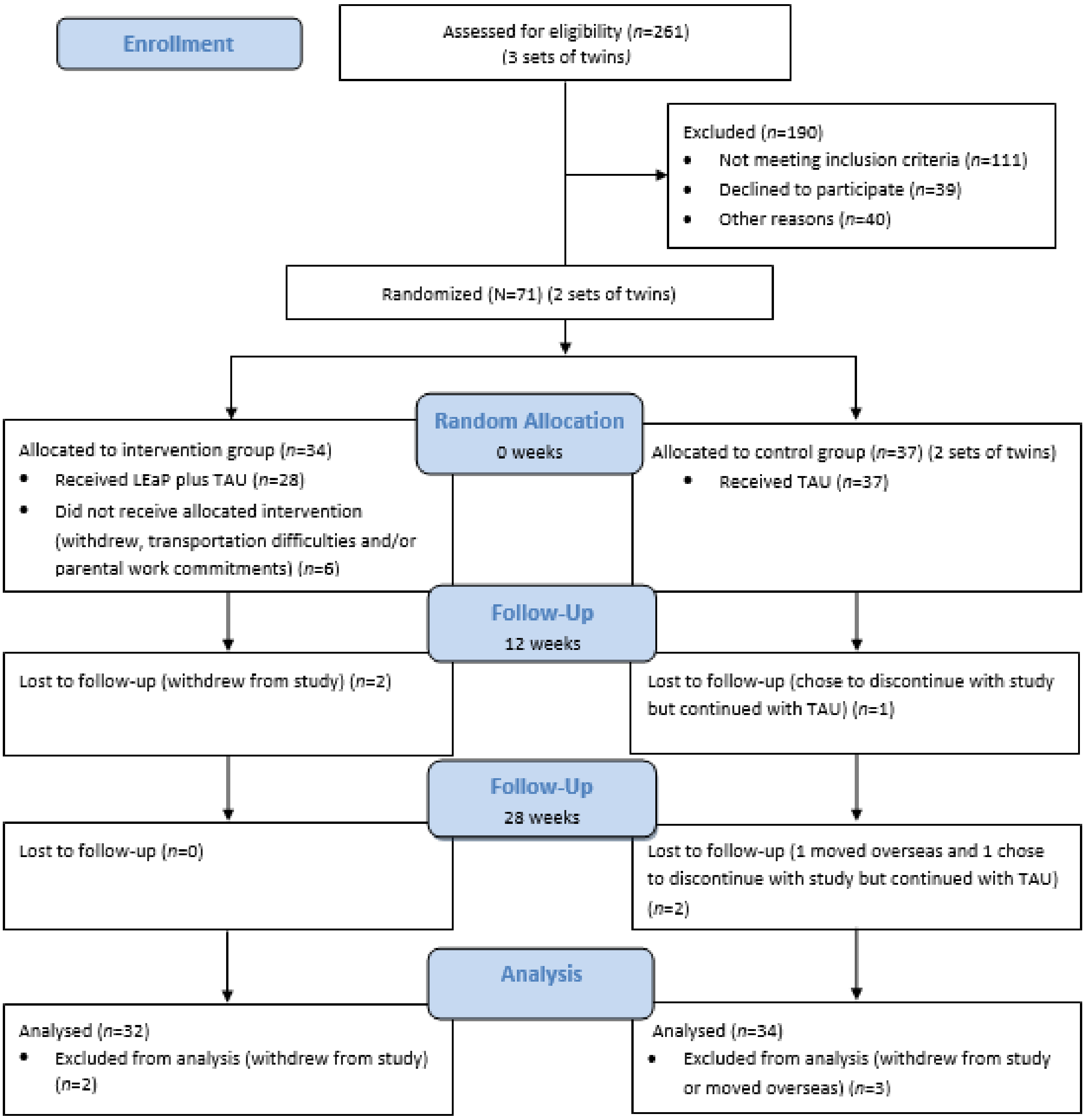
Of the 71 children that participated in three cases both parents decided to complete parental measures, resulting in data being collected from 72 caregivers. Thirty-four children were allocated to the intervention group (LEaP plus TAU), and thirty-seven to the control group (TAU). A high proportion were male (78.9 percent), with a mean age of 28.8 months (SD 5.4) and were identified as 'at risk' on the ASQ (Squires & Bricker, 2009) in 3.12 (SD 1.01) developmental domains. On the Mullen's Scale of Early Learning (Mullen, 1995) children scored on average 65.11 (SD 13.12) on the Early Learning Composite, equating to a percentile score of 1 and indicative of substantial developmental delay. Baseline characteristics of participants in each group are outlined in Table 6.1 with no significant differences found between groups. Two participants withdrew from LEaP plus TAU and three from TAU as shown in Figure 6.1.

Table 6.1 Baseline characteristics

Characteristic	**TAU** *Children: n* =37 *Caregivers: n*= 36	**LEaP+TAU** *Children: n* =34 *Caregivers: n*=36	***P***
Demographic characteristics n (%)			
Mean (SD) child age (months)	27.7 (5.1)	29.9 (5.6)	0.087 [a]
Child Gender			
Male	27 (73)	29 (85)	0.204 [b]
Female	10 (27)	5 (15)	
Carer relationship to child			
Mother	32 (89)	33 (92)	0.431[b]
Father	4 (11)	2 (5)	
Other	0 (0)	1 (3)	
Caregiver age			
20 – 29 years	10 (28)	8 (22.2)	0.326[b]
30 – 39 years	23 (64)	21 (58.3)	
40 – 49 years	3 (5)	6 (16.7)	
50 – 59 years	1 (3)	0 (0)	
Caregiver education			
No response	1 (3)	0 (0)	0.996[b]
High school	9 (25)	8 (22.2)	
Vocational training	6 (17)	7 (19.4)	
Undergraduate	14 (39)	14 (38.9)	
Postgraduate	6 (17)	7 (19.4)	
Weekly household income ($AU)			
No response	5 (14)	1 (2.8)	0.549[b]
$0 - $999	12 (33)	10 (27.8)	
$1000 - $1249	9 (25)	9 (25)	
$1250 and over	10 (28)	16 (44.4)	
Language spoken at home			
English	23 (64)	27 (75)	0.282 [b]
Other	13 (36)	9 (25)	
Median (IQR) health care dosage (TAU) (hours during time period)			
0-12 weeks	3 (1, 5)	2 (1, 5)	.751 [c]
0-28 weeks	8 (4, 11)	7 (4.5, 11.3)	.792 [c]

Characteristic	**TAU** *Children: n* =37 *Caregivers: n*= 36	**LEaP+TAU** *Children: n* =34 *Caregivers: n*=36	***P***
Clinical Characteristics Mean (SD)			
Child Development (MSEL)			
Early Learning Composite	66.3 (14. 2)	63.8 (11.9)	0.421 [a]
Parenting Stress (PSI-4 SF)	82.0 (22.4)	81.6 (15.4)	0.932 [a]
Parenting Self Efficacy (TOPSE)	370.6 (42.8)	375.6 (56.1)	0.674 [a]
Goal Achievement			
COPM Performance	2.8 (1.6)	2.5 (1.2)	0.551 [a]
COPM Satisfaction	3.0 (1.6)	2.8 (1.6)	0.571 [a]
GAS T Score	24.8 (2.9)	24.2 (1.7)	0.261 [a]
Family Support (FSS)	26.8 (16.3)	29.8 (13.3)	0.400 [a]
Quality of life (SF-12)			
Mental (MCS)	50.4 (9.9)	48.9 (10.4)	0.123 [a]
Physical (PCS)	51.9 (5.3)	49.3 (8.8)	0.555 [a]
Median (IQR) Child Communication (CDI)	2.3 (0.7, 3.5)	3.2 (0.9,3.1)	0.458 [a]

Note: SD=standard deviation; [a] t-test; [b]Chi-Square test; [c]Mann Whitney *U* test**;** IQR: interquartile range; $AU= Australian dollars; MSEL= Mullen's Scale of Early Learning (Mullen, 1995); PSI-4 SF= Parenting Stress Index (Abidin, 2012); TOPSE= A Tool to measure Parenting Self Efficacy (Kendall & Bloomfield, 2005); SF-12= The Medical Outcome Study Short Form Health Survey (Ware, Kolinski & Keller, 1996)*;* MCS= Mental Component Summary Score; PCS= Physical Component Summary Score; FSS= Family Support Scale (Dunst, Jenkins, & Trivette, 1984); COPM= Canadian Occupational Performance Measure (Law et al, 2005); GAS= Goal Attainment Scale (King et al, 1999); IQR= interquartile range; CDI=MacArthur-Bates Communicative Developmental Inventories (Fenson et al., 1994)



Note: TAU=treatment as usual; LEaP= Learn, Engage and Play playgroup

Figure 6.1 CONSORT recruitment flow diagram

This study was deemed low risk and there were no adverse events recorded throughout the study duration. Participants who withdrew from the LEaP plus TAU did not provide reasons but were followed up within CDS standard care procedures to ensure they continued to stay linked with therapy services (if required). The provision of standard care (TAU) to all participants served to minimise the risk of harm to both the control and intervention group.

LEaP participants who completed the study (*n*=32) attended on average 6.5 LEaP sessions, with a total of 27 out of 32 participants receiving the LEaP treatment dosage of six sessions. On average each LEaP session was attended by 5.28 (SD 1.15) children and families. Children attended sessions with a combination of one caregiver; two caregivers; alternating caregivers; and caregiver/s with siblings and/or extended family.

On average, participants across both groups received 3.44 (SD 3.68) total hours of TAU health care dosage at 12 weeks and 8.17 (5.30) hours at 28 weeks. Recruitment commenced in July 2017 and concluded in February 2018, with the final follow up completed in July 2018. There was no significant difference found in health care dosage (TAU) received between groups at either 12 weeks (*p*=.751) or 28 weeks (*p*=.792). There were three rounds of recruitment during the study to obtain the sample size, with follow up for all rounds completed by July 2019. Missing data were random and minimal, with no more than 1% for any measure missing and a total 0.7% missing across all measures. The means and standard deviations for outcome measures across groups and time points are outlined in Table 6.2.

Primary Outcome Measure

Parenting Stress (PSI-4 SF)

There were no between group differences for overall stress or stress subscales of the PSI-4 SF at 12 weeks or 28 weeks. Across time points the percentile scores for overall stress and stress subscales remained within the clinical normal range. Raw and percentile scores are reported in Table 2. While both groups showed a reduction in parenting stress across the study period, only the LEaP plus TAU levels of parent distress decreased by a statistically significant amount from baseline to 28 weeks (mean difference=-3.0, 95% CI -5.5,-0.5; p= 0.018; *d*=0.3) and a close to significant reduction was found for total stress (mean difference=-4.8, 95% CI -9.6, 0.0; p=0.051) (Table 6.3).

Secondary Outcome Measures

Parenting Self-Efficacy (TOPSE)

There were no between group differences for overall self-efficacy or subscales at either 12 or 28 weeks. However, both groups demonstrated statistically significant within group improvement in the control subscale of the TOPSE from baseline to 28 weeks (LEaP plus TAU mean difference=2.6, 95% CI 0.5, 4.6, *p*= 0.013; *d*=-0.2; TAU mean difference= 2.8, 95% CI 0.4, 5.2, *p*=0.023; *d*=-0.5).

Goal Achievement

Between group differences were noted for COPM-P and GAS at 12 weeks and 28 weeks. COPM-P scores were greater in LEaP plus TAU by an average of 0.9 at 12 weeks *(*95% CI 0.1 to 1.7; p= 0.022; *d*=0.6) and 0.9 at 28 weeks *(*95% CI 0.0 to 1.7; *p*= 0.042; *d*=0.5). The GAS was greater in LEaP plus TAU by an average of 7.7 at 12 weeks (95% CI 2.0 to 13.4; *p*=0.008; *d*=-0.7) and 8.2 at 28 weeks (95% CI 1.8 to 14.6; *p*=0.012; *d*=-0.6). Both groups demonstrated within group improvements at 12 weeks and 28 weeks in COPM-P; COPM-S; and GAS (Table 6.3).

Table 6.2 Means and standard deviations for outcome measures

	Groups					
	Time 1 (0 Week)		Time 2 (Week 12)		Time 3 (Week 28)	
Outcome	**TAU**	**LEAP+TAU**	**TAU**	**LEAP+TAU**	**TAU**	**LEAP+TAU**
Parenting Stress (PSI-4 SF)						
Total	81.6 (15.4)	82.0 (22.4)	79.6 (17.1)	79.4 (21.3)	78.6 (16.1)	76.6 (21.1)
Parent Distress (PD)	26.1 (8.4)	26.9 (9.0)	25.1 (8.7)	25.5 (8.2)	25.4 (8.9)	23.9 (9.6)
Parent Child Dysfunctional Interaction (PCDI)	24.9 (6.2)	26.3 (8.2)	25.2 (6.4)	25.9 (7.8)	24.5 (5.6)	25.2 (7.1)
Difficult Child (DC)	30.5 (8.4)	28.8 (8.1)	29.4 (7.6)	27.9 (8.6)	28.7 (6.5)	27.4 (8.4)
Parenting Self Efficacy (TOPSE)						
Total	370.6 (42.8)	375.6 (56.1)	381.8 (39.1)	383.9 (53.0)	378.7 (46.2)	381.6 (52.8)
Emotion	53.7 (5.9)	54.2 (4.0)	55.6 (5.1)	55.1 (4.9)	54.9 (4.0)	54.9 (5.4)
Play	50.8 (7.9)	50.2 (9.6)	51.7 (7.8)	51.9 (8.4)	50.5 (9.5)	50.1 (8.2)
Empathy	46.2 (9.5)	46.8 (8.1)	48.1 (8.5)	47.9 (7.2)	47.3 (7.1)	47.4 (8.1)
Control	38.8 (6.2)	40.1 (10.1)	40.4 (6.6)	41.9 (9.6)	41.9 (7.6)	42.3 (9.2)
Discipline	40.8 (7.9)	42.6 (10.0)	41.7 (8.9)	44.0 (8.6)	43.5 (8.3)	42.9 (8.8)
Pressure	39.5 (12.0)	40.6 (11.6)	39.7 (11.2)	40.7 (12.0)	41.0 (11.7)	41.6 (10.7)
Self	50.1 (7.2)	49.7 (10.5)	49.4 (7.6)	50.8 (9.2)	49.8 (6.5)	50.7 (7.7)
Learning	50.7 (8.4)	51.4 (7.8)	51.6 (7.6)	51.8 (7.4)	50.8 (7.8)	51.6 (6.4)

	Groups					
	Time 1 (0 Week)		Time 2 (Week 12)		Time 3 (Week 28)	
Outcome	**TAU**	**LEAP+TAU**	**TAU**	**LEAP+TAU**	**TAU**	**LEAP+TAU**
Goal Achievement						
COPM Performance	2.8 (1.6)	2.5 (1.2)	4.4 (2.1)	5.2 (1.8)	5.7 (1.9)	6.4 (1.8)
COPM Satisfaction	3.0 (1.6)	2.8 (1.6)	4.8 (2.4)	5.5 (2.2)	6.4 (2.1)	6.6 (2.1)
GAS T Score	24.8 (2.9)	24.2 (1.7)	43.5 (12.7)	50.7 (11.4)	55.0 (14.6)	62.5 (12.3)
Family support (FSS)						
Total	26.8 (16.3)	29.8 (13.3)	27.8 (15.0)	35.7 (14.7)	28.0 (13.4)	32.6 (13.0)
Quality of Life (SF-12)						
Mental (MCS)	50.4 (9.9)	48.9 (10.4)	50.3 (9.3)	48.8 (8.9)	49.9 (8.8)	49.2 (9.3)
Physical (PCS)	51.9 (5.3)	49.3 (8.8)	49.9 (8.8)	48.3 (10.3)	49.9 (7.9)	46.5 (11.5)
Child Communication						
CDI Vocabulary [1]	median (IQR)	median (IQR)	median (IQR)	median (IQR)	median (IQR)	median (IQR)
	0.7	0.8	1.2	1.6	0.3	1.0
	(0, 3.5)	(0.15, 3.1)	(0.4, 5.7)	(0.1, 3.9)	(0, 6.9)	(0, 4.5)

Note: TAU=Treatment as usual; LEaP= Learn, Engage and Play; PSI-4 SF= Parenting Stress Index (Abidin, 2012); TOPSE= A Tool to measure Parenting Self Efficacy (Kendall & Bloomfield, 2005)**;** COPM= Canadian Occupational Performance Measure (Law et al., 2005); GAS= Goal Attainment Scale (King et al., 1999); FSS= Family Support Scale (Dunst et al., 1988)**;** SF-12=The Medical Outcome Study Short Form Health Survey (Rand Trust, 2006)*;* MCS= Mental Component Summary Score; PCS= Physical Component Summary Score; CDI= MacArthur-Bates Communicative Developmental Inventories (Fenson et al., 1993); [1]Medians and Interquartile ranges presented due to skewed distribution; IQR= interquartile ranges

Table 6.3 Mean difference (and 95% confidence intervals) within and between LEaP+ TAU and TAU groups

	Within group difference[1]				**Between group difference[1]**	
	Time 2-1 (Week 12-0)		**Time 3-1 (Week 28-0)**		**Time 2 (Week 12)**	**Time 3 (Week 28)**
Outcome	**TAU**	**LEAP+TAU**	**TAU**	**LEAP+TAU**	**LEAP+TAU -TAU**	**LEAP+TAU -TAU**
Parent Stress (PSI-4 SF)						
Total	-2.0 [-6.0, 2.0]	-2.2 [-6.4, 1.9]	-2.8 [-8.0, 2.4]	-4.8 [-9.6, 0.0]	0.1 [-5.5, 5.7]	-1.7 [-8.4, 4.9]
Parent Distress (PD)	-0.8 [-2.4, 0.7]	-1.5 [-3.5, 0.5]	-0.5 [-2.3, 1.3]	-3.0 [-5.5, -0.5]* d=0.3	-0.4 [-2.8, 1.9]	-2.3 [-5.3, 0.6]
Parent Child Dysfunctional Interaction (PCDI)	0.1 [-1.7, 1.9]	-0.2 [-2.2, 1.7]	-0.3 [-2.5, 1.8]	-0.9 [-2.5, 0.7]	0.2 [-2.3, 2.6]	0.0 [-2.4, 2.3]
Difficult Child (DC)	-1.3 [-3.3, 0.7]	-0.6 [-2.3, 1.2]	-1.9 [-4.6, 0.8]	-1.0 [-3.3, 1.3]	0.3 [-2.4, 2.9]	0.5 [-2.5, 3.5]
Parenting Self Efficacy (TOPSE)						
Total	9.4 [-1.3, 20.0]	10.4 [-2.1, 22.8]	7.1 [-7.1, 21.4]	8.7 [-4.0, 21.4]	0.6 [-14.4, 15.7]	1.8 [-15.9,19.6]
Emotion	1.4 [-0.5, 3.2]	0.9 [-0.5, 2.3]	1.2 [-0.8, 3.3]	0.8 [-1.0, 2.5]	-0.4 [-2.5, 1.8]	-0.3 [-2.6, 2.0]
Play	0.6 [-2.1, 3.3]	1.7 [-1.0, 4.4]	-0.1 [-3.5, 3.4]	-0.1 [-2.3, 2.1]	0.7 [-2.6, 3.9]	-0.4 [-4.2, 3.3]
Empathy	1.5 [-1.3, 4.4]	1.4 [-1.2, 4.0]	1.0 [-1.9, 3.9]	0.9 [-1.6, 3.5]	-0.1 [-3.3, 3.1]	0.0 [-3.1, 3.1]
Control	1.5 [-0.6, 3.7]	2.1 [0.0, 4.3]	2.8 [0.4, 5.2] * d= -0.5	2.6 [0.5, 4.6]* d=-0.2	1.1 [-1.8, 4.0]	0.3 [-2.7, 3.3]
Discipline	0.7 [-2.1, 3.5]	1.7 [-1.1, 4.4]	2.4 [-0.1, 5.0]	0.6 [-1.7, 3.0]	1.7 [-1.8, 5.2]	-1.0 [-4.2, 2.1]
Pressure	0.4 [-2.4, 3.2]	0.6 [-2.4, 3.5]	1.1 [-1.9, 4.1]	1.5 [-2.2, 5.2]	0.8 [-3.2, 4.8]	1.0 [-3.5, 5.4]
Self	-0.4 [-2.4, 1.6]	1.5 [-0.4, 3.4]	-0.5 [-2.4, 1.4]	1.4 [-0.8, 3.6]	1.5 [-1.0, 4.1]	1.5 [-0.8, 3.9]
Learning	0.8 [-1.9, 3.5]	0.4 [-2.4, 3.2]	-0.3 [-2.9, 2.4]	0.2 [-1.9, 2.4]	-0.6 [-3.7, 2.6]	0.2 [-2.6, 3.0]
Goal Achievement						

	Within group difference[1]				**Between group difference[1]**	
	Time 2-1 (Week 12-0)		**Time 3-1 (Week 28-0)**		**Time 2 (Week 12)**	**Time 3 (Week 28)**
Outcome	**TAU**	**LEAP+TAU**	**TAU**	**LEAP+TAU**	**LEAP+TAU -TAU**	**LEAP+TAU -TAU**
COPM Performance	1.7 [1.1, 2.2] * *d*=-0.9	2.7 [2.1, 3.2] * *d* =-1.8	2.9 [2.3, 3.6]* *d* =-1.7	3.9 [3.3, 4.5]* *d* =-2.6	0.9 [0.1, 1.7] * *d* =0.6	0.9 [0.0, 1.7] * *d* =0.5
COPM Satisfaction	1.8 [1.2, 2.4] * *d* =-0.9	2.7 [2.1, 3.4] * *d* =-1.5	3.3 [2.6, 4.0] * *d* =-1.8	3.8 [3.0, 4.5]* *d* =-2.0	0.8 [-0.1, 1.7]	0.4 [-0.6, 1.4]
GAS T score	18.6[14.6,22.7]* *d* =-2.0	26.5 [22.6,30.5]* *d* =-3.3	30.1[25.4,34.8]* *d* =-3.3	38.4 [34.1, 42.6]* *d* =-4.5	7.7 [2.0, 13.4]* *d* =-0.7	8.2 [1.8, 14.6] * *d* =-0.6
Total Family Support (FSS)	0.9 [-4.0, 5.8]	6.5 [2.4, 10.6]* d=-0.42	1.4 [-3.4, 6.2]	3.5 [-0.5, 7.5]	7.0 [0.9, 13.1]* *d* =-0.44	3.4 [-2.1, 8.9]
Quality of Life (SF-12)						
Mental (MCS)	0.1 [-3.0, 3.3]	0.1 [-2.2, 2.5]	-0.3 [-2.9, 2.2]	0.5 [-2.9, 3.9]	-0.6 [-4.0, 2.9]	0.0 [-3.6, 3.6]
Physical (PCS)	-2.1 [-4.8, 0.6]	-1.2 [-3.7, 1.2]	-2.0 [-4.5, 0.5]	-3.0 [-5.8, -0.3]* *d* =0.3	0.5 [-3.4, 4.3]	-1.6 [-5.4, 2.3]
Child Communication						
(CDI) Vocabulary	1.7 [1] [1.2, 2.2]*	0.9 [1] [0.7, 1.2]	1.4 [1] [1.0, 2.0]*	1.6 [1] [1.2, 2.2]*	0.7 [1] [0.4, 1.4]	1.2 [1] [0.6, 2.4]

Note: TAU=Treatment as usual; LEaP= Learn, Engage and Play;[1] Mixed model regression analysis; * p<0.05; d= Cohens d; [1]Poisson regression due to skewed distribution producing Incidence Rate Ratios; PSI-4 SF= Parenting Stress Index (Abidin, 2012); TOPSE= A Tool to measure Parenting Self Efficacy (Kendall & Bloomfield, 2005); COPM= Canadian Occupational Performance Measure (Law et al., 2005); GAS= Goal Attainment Scale (King et al., 1999); FSS=Family Support Scale (Dunst et al., 1988); SF-12=The Medical Outcome Study Short Form Health Survey (Rand Trust, 2006)*;* MCS=Mental Component Summary Score; PCS= Physical Component Summary Score; CDI= MacArthur-Bates Communicative Developmental Inventories (Fenson et al., 1993).

Compared to the TAU group, the LEaP plus TAU demonstrated a greater proportion of clinically meaningful change in COPM-S at 12 weeks (p=0.017), COPM-P at 28 weeks (*p*=0.012) and GAS at 12 and 28 weeks (*p*=0.001 and *p*=0.003 respectively). At 12 weeks COPM-P almost reached clinically significance (p=0.060). COPM-S clinical significance was not maintained at 28 weeks (p=0.229). Less than a half of those in TAU group achieved their GAS goals at 12 weeks (41%) compared to 67% from the LEaP plus TAU group (*p*=0.001). This is demonstrated in Figure 6.2.

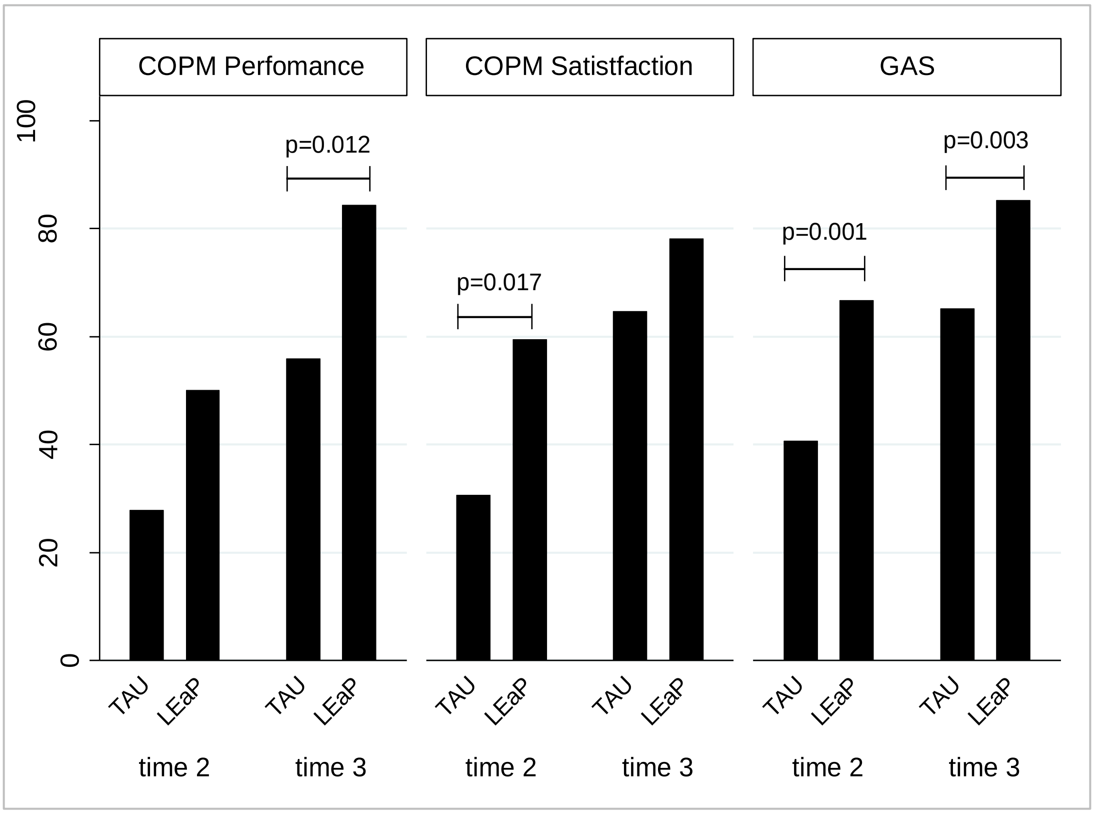


Figure 6.2 Comparison of clinical meaningful change in goal achievement

Family Support (FSS)

Between groups differences were apparent at 12 weeks with LEaP plus TAU demonstrating significantly higher1 improvements in family support than the control group by an average of 7.0 (95% CI 0.9, 13.1, *p*= 0.024; *d*=-0.44). Both groups demonstrated improvements in family support at 12 weeks and 28 weeks with the intervention group increasing by a statistically significant amount from baseline to 12 weeks (mean difference=6.5, 95% CI 2.4, 10.6, *p*=0.002; *d*=-0.42).

Quality of Life (SF-12)

There were no between group differences for PCS or MCS at 12 weeks or 28 weeks. Both groups demonstrated improvement in Mental Component Summary scores (MCS) at 12 weeks in comparison to baseline, but only LEaP plus TAU showed improvements at 28 weeks. Both groups demonstrated reductions in Physical Component Summary scores (PCS) at 12 weeks and 28 weeks with the LEaP plus TAU demonstrating a statistically significant within group reduction in PCS from baseline to 28 weeks (mean difference= -3.0, 95%CI -5.8, -0.3, *p*=0.031; *d*= 0.3).

Communication (CDI Words and Sentences and CDI-III)

While there were no between group differences apparent in communication at either 12 weeks or 28 weeks, both groups demonstrated within group improvement in children's vocabulary scores across the study period. Those receiving LEaP plus TAU demonstrated improvement from baseline to 28 weeks (incidence rate ratio =1.6, CI 95% 1.2, 2.2, *p*=0.002); with TAU increasing by a statistically significant amount from baseline to 12 weeks (incidence rate ratio=1.7, 95% CI 1.2, 2.2, *p*<0.001) and baseline to 28 weeks (incidence rate ratio =1.6, CI 95% 1.2, 2.2, *p*=0.002). It must be noted that analysis for this measure was complicated by higher proportions of incomplete data sets. This was a consequence of being unable to obtain a percentile score for children's vocabulary over 37 months, reducing data sets at 12 weeks (LEaP plus TAU *n*=25; TAU *n*=32) and 28 weeks (LEaP plus TAU *n*=17; TAU *n*=23).

6.5 Discussion

In a research context defined by limited empirical research this is the first randomised control trial evaluation of a therapeutic playgroup for children with developmental delay, providing the first Level II evidence of effectiveness (Sackett, 1989). While study results did not show significant between groups differences on the primary outcome of parenting stress there was significant within group change, findings also demonstrated significant between group differences in child goal achievement and family support.

Findings from this study did not support the primary hypothesis, that parents participating in LEaP plus TAU would demonstrate significantly greater reductions in parenting stress than the TAU only group. While parents receiving LEaP showed significant within group change in the parenting distress subscale and an almost significant reduction in overall stress, this was not significantly better than TAU group. Similarly to previous feasibility study findings (Armstrong et al., 2019), overall parenting stress baseline scores for LEaP (62nd percentile) and TAU (61st percentile) fell well below the clinically significant range of 85th percentile (Abidin, 2012). These were also lower than the average stress score reported in mothers (80th percentile) and fathers (74th percentile) of children with developmental disability (Oelofsen & Richardson, 2006). This is contrary to the expectation that parent stress would be higher given research indicates parents of children with developmental disabilities experience higher levels of stress (Hayes & Watson, 2013). This study was also underpowered and was likely insufficiently powered to capture statistically significant changes between groups if they existed resulting in a potential type II error. Furthermore, in contrast to other therapeutic playgroup research the design of this study compared to additional impact of the LEaP playgroup over the TAU received by both groups which may have impacted on the ability to detect change in parent stress across groups. Whilst Ericksen and colleagues' (2018) RCT on therapeutic playgroups for depressed mothers demonstrated a significant improvement in parenting stress compared to the control group using a comparable sample size (N=74), the study employed a waitlist control design while those allocated to the control group in the present study received TAU services (i.e. no waiting for services). Despite health care dosage being equal across groups, the study needed a larger sample size to have sufficient power to detect statistically significant differences between groups, where the control group received active therapy. Given this study design, it is also not possible to separate the impact of LEaP from TAU.

Participants in this study reported baseline self-efficacy scores were higher than those recorded in other studies of parents of children with delays and disability (Batool & Khurshid, 2015; Kendall, Bloomfield, Appleton, & Kitaoka, 2013). Although both groups improved significantly on the control subscale across the study period, there were no significant between group differences. On average at baseline both groups of parents scored themselves 8 out of 10 for each self-efficacy item which arguably resulted in a ceiling effect on the TOPSE data. This may have been impacted by a self-selection bias on entry to the study. Interestingly, the only subscale to demonstrate significant change within both groups across the study period was the control subscale of the TOPSE, which also recorded the lowest average of all the TOPSE subscales in both groups at baseline. While the TOPSE has previously been used in research with parents of children with disability (Bloomfield et al., 2010) the findings from the present study suggest this measure may not be particularly sensitive to change in parents of children with developmental delay. A systematic review of parent-reported self-efficacy measures published after the commencement of this trial rated TOPSE 15 points out of 36 points on administrative and psychometric properties (Wittkowski, Garrett, Calam, & Weisberg, 2017). Although none of the 34 included measures achieved a total score, the authors recommended using the Self-Efficacy for Parenting Tasks Indexes (SEPTI-TIS; van Rijen, Gasanova, Boonstra, & Huijding, 2014) for parents of children aged between 13 months and 36 months (Wittkowski et al., 2017). Given self-efficacy was an overarching theoretical framework of LEaP, it is recommended ongoing evaluation of LEaP incorporates a parental self-efficacy measure, but this be changed to an alternative measure, such as the SEPTI-TIS which may have greater sensitivity to change.

On secondary outcome measures, results demonstrated that LEaP plus TAU contributed to significantly greater improvements in goal achievement and family support than TAU only. Children attending LEaP recorded greater clinical and statistical improvements in goal achievement with moderate to large effect sizes (0.5 to -0.7) related to performance (COPM-P) and function (GAS). Whilst performance (COPM-P) reached statistical significant between group differences at 12 and 28 weeks and clinical significant between group difference at 28 weeks, it did not reach clinical significant between group difference at 12 weeks. It is suggested the small sample size contributed to not reaching clinically significance at 12 weeks (p=0.06), which may have emerged in a larger sample size. In parent satisfaction (COPM-S), whilst LEaP plus TAU consistently demonstrated a higher mean difference in satisfaction compared to TAU this did not equate to a statistically significant between group difference. However, a clinically significant between group difference was recorded for satisfaction (COPM-S) at 12 weeks but not 28 weeks. This suggests satisfaction was initially influenced by attending LEaP, but this was not sustained once LEaP had ceased.

In evaluating new intervention models with limited previous empirical testing, researchers advocate for the use of goal achievement measures, specifically the GAS and COPM, given the reliability, sensitivity and clinical appropriateness of these measures in detecting change (Novak et al., 2013). This is the first RCT to examine the effectiveness of therapeutic playgroups for children with developmental delay. The statistically and clinically significant findings for both function and performance of goal achievement at 12 and 28 weeks indicate LEaP adds to usual care and may assist in improving functional outcomes for children with developmental delays and their families. Moreover, the between group difference in perceived level of family support at 12 weeks demonstrated LEaP participants accessed significantly more social support than TAU only group while attending LEaP (moderate effect size of -0.44). Although this difference was not sustained beyond LEaP this is an encouraging finding given parents of children with developmental delay experience higher levels of social isolation compared with other parents and increasing social networks has been shown to reduce parenting stress and improve functioning (Boyd, 2002; Gouin, da Estrela, Desmarais, & Barker, 2016; Kerr & McIntosh, 2000; Plant & Sanders, 2007; Shilling et al., 2013). Therefore, a model such as LEaP that appears to assist in improving children's skills and increasing families' social networks is a valuable early childhood intervention.

Both groups increased in mental health scores (MCS) and decreased in physical health scores (PCS) throughout the study. While not significant between groups, LEaP participants demonstrated a significant reduction in physical health. Compared to Australian norms (Avery, Dal Grande, & Taylor, 2004) and parents of children with disabilities (Bourke et al., 2008), baseline and follow up physical scores demonstrated TAU only participants scores remained similar to comparison norms, while LEaP participants scores dropped below this threshold at follow up. It is suspected that this reduction was impacted by external factors including physical illness and physical complications associated with late stage pregnancy of caregivers at 28 weeks. However, the baseline and follow up mental health scores for both groups were lower than Australian norms (Avery et al., 2004), but higher than parents of children with disabilities (Bourke et al., 2008), suggesting that while parents of children with developmental delay experience poorer mental health than the general population their mental health appears to be more positive than parents of children with diagnosed disabilities.

Finally, while there were no between group differences, children in both LEAP plus TAU group and TAU group demonstrated significant improvements in their communication throughout the study period. It is likely that the children's communication in both groups matured over the 7-month trial period. Developmentally it would be expected that children's vocabulary would naturally improve during this time, irrespective of intervention or the initial severity of communication delay. This could explain the significant within group changes for both groups. This measure was also complicated by smaller numbers of scores, given children older than 36 months at follow up did not qualify for a percentile score and therefore their data could not be compared within or across groups. Although this was corrected for in the data analysis this reduced the power related to this measure further, which may have impacted on the detection of between group differences. It is recommended further studies either use the raw scores on one measure (CDI: words or sentence) or alternative communication measures that range from 18 months to 42 months to ensure older children are not excluded from the analysis.

This study represents one of the few controlled trials of playgroups and therefore contributes significantly to the evidence base of this field. It demonstrates the challenges associated with choosing reliable and sensitive outcome measures to effectively evaluate therapeutic playgroups for children with developmental delay. Given the variety of potential child, parent and community benefits of playgroups (Centre for Community Child Health, 2003; Cumming & Wong, 2008) further research is required to identify valid and reliable measures to increase consistent evaluation across playgroup research, to enable this field to be extended and strengthened. Despite extensive recruitment, the sample size in this study was not large enough to sufficiently power the analyses to detect medium intervention effects. Recruitment was ceased after five rounds of LEaP due to funding and time constraints, therefore the intended 86-participant sample size was not reached. Secondly, although participants were randomly allocated to groups, assessors were blind to treatment allocation and there were low attrition rates, LEaP facilitators and participants were not blind to treatment allocation. This potentially created performance bias, a commonly reported limitation within intervention research (Jackman, Novak, & Lannin, 2014). Whilst this study presented superficial data on family attendance patterns, this was not systematically collected for individual participants or sessions. LEaP family attendance varied widely to include single caregivers; multiple caregivers; alternative caregivers; and siblings and/or extended family. This variation in attendance may have influenced child and caregiver experiences and outcomes, particularly parent reported outcome measures but could not be analysed due to inadequate data on this. It is recommended future playgroup research comprehensively documents family attendance data and examines the influence of this on outcomes. Lastly, this study did not examine LEaP treatment dose response, the insufficiently powered sample and high attendance rates meant sub-group analysis was not possible. This analysis would have increased the understanding of what, if any sessions were most effective for families. Future studies might consider increasing the sample size, blinding facilitators and participants, and if sufficiently powered, conduct sub-group analysis to evaluate high and low LEaP dose response.

6.6 Conclusion

While this consumer driven study did not demonstrate that the LEaP playgroup significantly reduces parenting stress over TAU, it did indicate that LEaP contributes to improved outcomes in family support and goal achievement for children with developmental delay and their families when compared to TAU only within a community early intervention service. This indicates LEaP in addition to usual care may support improved outcomes for children and families. Given a LEaP manual, training package and fidelity checklist were developed in the process of this study, LEaP has the potential to be adopted, implemented and evaluated by other early intervention services to further investigate if LEaP effectively meets the growing service demand.

6.7 References

Abidin, R. (2012). *Parenting Stress Index* (4th ed.). Lutz, Florida: Psychological Assessment Resources, Inc.

Armstrong , J., Pieterse, B., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2020). The development and feasibility of a manualised therapeutic playgroup for children with developmental delay. *Journal of Child and Family Studies,* doi.org/10.1007/s10826-020-01789-z

Australian Bureau of Statistics. (2012). Children with a disability. Retrieved from https://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Main+Features30Jun+2012#Children

Australian Government. (2019). *Australian Early Development Census National Report 2018*. Canberra, ACT: Commonwealth of Australia

Avery, J., Dal Grande, E., & Taylor, A. (2004). Quality of Life in South Australia as measured by the SF12 Health Status Questionnaire: Population norms for 2003, *trends from 1997–2003*. South Australia: South Australian Department of Human Services, Population Research and Outcome Studies Unit.

Bandura, A. (1977). Self- efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215. doi:10.1037/0033-295X.84.2.191

Batool, S. S., & Khurshid, S. (2015). Factors associated with stress among parents of children with autism. Journal of College of Physicians and Surgeons- Pakistan, 25(10), 752-756. doi:10.2015/jcpsp.752756

Berthelsen, D. C., Williams, K., Abad, V., Vogel, L., & Nicholson, J. (2012). *The parents at playgroup research report: Engaging families in supported playgroups*. Retrieved from http://eprints.qut.edu.au/50875/1/Parents_at_Playgroup_Final_Report.pdf

Bloomfield, L., Kendall, S., & Fortuna, S. (2010). Supporting parents: development of a tool to measure self-efficacy of parents with learning disabilities. *British Journal of Learning Disabilities, 38*(4), 303-309. doi:10.1111/j.1468-3156.2009.00607.x

Bourke, J., Ricciardo, B., Bebbington, A., Aiberti, K., Jacoby, P., Dyke, P., . . . Leonard, H. (2008). Physical and Mental Health in Mothers of Children with Down Syndrome. *The Journal of Pediatrics, 153*(3), 320-326. doi:10.1016/j.jpeds.2008.02.047

Boyd, B. A. (2002). Examining the Relationship Between Stress and Lack of Social Support in Mothers of Children With Autism. *Focus on Autism and Other Developmental Disabilities, 17*(4), 208-215. doi:10.1177/10883576020170040301

Centre for Community Child Health. (2003). *Early Intervention Parenting Project: improving access to playgroups for all families project: Final report*. Melbourne, Victoria: Centre for Community Child Health, Royal Children's Hospital.

Child Development Service. (2015a). Clinical service redesign implementation plan 2015 - 2017. Perth, W.A: Child and Adolescent Health Service, Department of Health.

Child Development Service. (2015b). Emerging trends in early intervention and CDS service delivery. Phase IV: Final recommendations. Perth, W.A: Child and Adolescent Health Service, Department of Health.

Children and Early Childhood Development. (2008). Supported playgroups and parent groups: Program guidelines. Melbourne, Victoria: Office for Children and Early Childhood Development, Victorian Government Department of Education and Early Childhood Development.

Commerford, J., & Robinson, E. (2016). Supported playgroups for parents and children: The evidence for their benefits. Melbourne, Victoria: Australian Institute of Family Studies.

Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2008). Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ, 337*. doi:10.1136/bmj.a1655

Cumming, T., & Wong, S. (2008). *SDN PlayLinks: Dimensions of a Relationships-Based Services*. Sydney: SDN Children's Services Inc.

Dunst, C., Jenkins, J., & Trivette, C. M. (1984). Family support scale: Reliability and validity. *Journal of Individual, Family, and Community Wellness*(1), 45-52.

Dunst, C., Jenkins, V., & Trivette, C. (1988). Family Support Scale. In C. J. Dunst, C. M. Trivette, & A. G. Deal (Eds.), *Enabling and empowering families: Principles and guidelines for practice* (Vol. 153-174). Cambridge, MA: Brookline Books.

Dunst, C., & Trivette, C. (1996). Empowerment, effective helpgiving practices and family-centered care. *Pediatric Nursing, 22*(4), 334-337.

Dunst, C. J., Trivette, C. M., & Hamby, D. W. (1994). Measuring social support in families with young children with disabilities. In C. J. Dunst, C. M. Trivette, & A. G. Deal (Eds.), *Supporting & strengthening families, Vol. 1. Methods, strategies and practices* (pp. 152-160). Cambridge, MA, US: Brookline Books.

Ericksen, J., Loughlin, E., Holt, C., Rose, N., Hartley, E., Buultjens, M., . . . Milgrom, J. (2018). A therapeutic playgroup for depressed mothers and their infants: Feasibility study and pilot randomised trial of community HUGS. *Infant Mental Health Journal, 39*(4), 396-409. doi:10.1002/imhj.21723

Evangelou, M., Smith, S., & Sylva, K. (2006). *Evaluation of the Sutton Trust Shopping Centre Project: Room to Play*. Retrieved from https://www.suttontrust.com/wp-content/uploads/2006/06/1roomtoplayfull-1.pdf

Feldman, H. M., Dale, P. S., Campbell, T. F., Colborn, D. K., Kurs-Lasky, M., Rockette, H. E., & Paradise, J. L. (2005). Concurrent and predictive validity of parent reports of child language at ages 2 and 3 years. *Child Development, 76*(4), 856-868. doi:10.1111/j.1467-8624.2005.00882.x

Fensen, L., Marchman, V., Thal, D., Dale, P. S., Reznick, J. S., & Bates, E. (2007). *MacArthur-Bates Communicative Developmental Inventories: User's Guide and Technical Manual* (2nd Ed ed.). Baltimore, Maryland: Paul H. Brookes Publishing Co.

Fenson, L., Dale, P., & Reznick, J. (1993). *The MacArthur Communicative Development Inventories: User's Guide and Technical Manual*. San Diego, CA: Singular Publishing Group.

Fisher, W. P., Jr., Elbaum, B., & Coulter, W. A. (2012). Construction and validation of two parent-report scales for the evaluation of early intervention programs. *Journal of Applied Measurement, 13*(1), 57-76.

Freeman, A. R. (2008). Is waiting for rehabilitation services associated with changes in function and quality of life in children with physical disabilities? *Physical & Occupational Therapy in Pediatrics, 28*(4), 305-307.

Gouin, J.-P., da Estrela, C., Desmarais, K., & Barker, E. T. (2016). The Impact of Formal and Informal Support on Health in the Context of Caregiving Stress. *Family Relations, 65*(1), 191-206. doi:10.1111/fare.12183

Halfon, N., Houtrow, A., Larson, K., & Newacheck, P. (2012). The Changing Landscape of Disability in Childhood. *The Future of Children, 22*(1), 13-42. doi:10.1353/foc.2012.0004

Hancock, K., Lawrence, D., Mitrou, F., Zarb, D., Berthelsen, D., Nicholson, J., & Zubrick, S. (2012). The association between playgroup participation, learning competence and social-emotional wellbeing for children aged four-five years in Australia. *Australasian Journal of Early Childhood, 37*(2), 72-81.

Hassall, R., Rose, J., & McDonald, J. (2005). Parenting stress in mothers of children with an intellectual disability: the effects of parental cognitions in relation to child characteristics and family support. *Journal of Intellectual Disability Research, 49*(6), 405-418. doi:10.1111/j.1365-2788.2005.00673.x

Hayes, S. A., & Watson, S. L. (2013). The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *Journal of Autism & Developmental Disorders, 43*(3), 629-642. doi:http://dx.doi.org/10.1007/s10803-012-1604-y

Heidlage, J. K., Cunningham, J. E., Kaiser, A. P., Trivette, C. M., Barton, E. E., Frey, J. R., & Roberts, M. Y. (2018). The effects of parent-implemented language interventions on child linguistic outcomes: A meta-analysis. *Early Childhood Research Quarterly*. doi:10.1016/j.ecresq.2018.12.006

Hoffman, K. T., Marvin, R. S., Cooper, G., & Powell, B. (2006). Changing toddlers' and preschoolers' attachment classifications: The circle of security intervention. *Journal of Consulting and Clinical Psychology, 74*(6), 1017-1026. doi:10.1037/0022-006X.74.6.1017

Jackman, M., Novak, I., & Lannin, N. (2014). Effectiveness of hand splints in children with cerebral palsy: A systematic review with meta-analysis. Developmental Medicine and Child Neurology, 56(2), 138-147. doi:10.1111/dmcn.12205

Kendall, S., & Bloomfield, L. (2005). Developing and validating a tool to measure parenting self-efficacy. *Journal of Advanced Nursing, 51*(2), 174-181. doi:10.1111/j.1365-2648.2005.03479.x

Kendall, S., Bloomfield, L., Appleton, J., & Kitaoka, K. (2013). Efficacy of a group-based parenting program on stress and self-efficacy among Japanese mothers: A quasi-experimental study. *Nursing and Health Sciences, 15*(4), 454-460. doi:10.1111/nhs.12054

Kerr, S. M., & McIntosh, J. B. (2000). Coping when a child has a disability: exploring the impact of parent-to- parent support. *Child: Care, Health and Development, 26*(4), 309-322. doi:10.1046/j.1365-2214.2000.00149.x

King, G., McDougall, J., Palisano, R. J., Gritzan, J., & Tucker, M. A. (1999). Goal attainment scaling: Its use in evaluating, pediatric therapy programs. *Physical and Occupational Therapy in Pediatrics, 19*(2), 31-52.

King, G., Strachan, D., Tucker, M., Duwyn, B., Desserud, S., & Shillington, M. (2009). The application of a transdisciplinary model for early intervention services. *Infants & Young Children: An Interdisciplinary Journal of Special Care Practices, 22*(3), 211-223.

Kiresuk, T. J., & Sherman, R. E. (1968). Goal attainment scaling: A general method for evaluating comprehensive community mental health programs. Community Mental Health Journal, 4(6), 443-453. doi:10.1007/bf01530764

Law, M., Baptiste, S., Carswell, A., McColl, M., Polatajko, H., & Pollock, N. (2005). *The Canadian Occupational Performance Measure* (4th ed.). Ottowa, Canada: Canadian Association of Occupational Therapists.

Law, M., King, S., Stewart, D., & King, G. (2001). The perceived effects of parent-led support groups for parents of children with disabilities. Physical and Occupational Therapy in Pediatrics, 21(2-3), 29-48.

Lloyd, B., Buffett, K., Innes-Hughes, C., Jackson, D., Qi, J., & Powell, L. (2017). Supported playgroups for health promotion activity for healthy eating and active living: A social ecological perspective. Australian Journal of Early Childhood, 42(1), 116-121. doi:10.23965/AJEC.42.1.13

McLean, K., Edwards, S., Evangelou, M., Skouteris, H., Harrison, L. J., Hemphill, S. A., . . . Lambert, P. (2017). Playgroups as sites for parental education. *Journal of Early Childhood Research, 15*(3), 227-237. doi:10.1177/1476718x15595753

Miller, A. R., Armstrong, R. W., Mâsse, L. C., Klassen, A. F., Shen, J., & O'Donnell, M. E. (2008). Waiting for child developmental and rehabilitation services: an overview of issues and needs. *Developmental Medicine & Child Neurology, 50*(11), 815-821.

Moran, P., & Ghate, D. (2005). The effectiveness of parenting support. *Children & Society, 19*(4), 329-336. doi:10.1002/chi.878

Mullen, E. M. (1995). *Mullen Scales of Early Learning*. Circle Pines, MN: American Guidance Service.

Myers, J., Riggs, E., Lee, J.-L., Gibbons, K., & Naughton, G. (2019). Confident and Understanding Parents (CUPs) – a child nutrition and active play pilot intervention for disadvantaged families attending Supported Playgroups in Victoria, Australia. Health Promotion Journal of Australia, 1-9. doi:10.1002/hpja.229

Needham, M. (2010). *Learning to Learn in Supported Parent and Toddler Groups: A Sociocultural Investigation*. University of Londo. Unpublished PhD thesis.

Novak, I., McIntyre, S., Morgan, C., Campbell, L., Dark, L., Morton, N., . . . Goldsmith, S. (2013). A systematic review of interventions for children with cerebral palsy: State of the evidence. Developmental Medicine and Child Neurology, 55(10), 885-910. doi:10.1111/dmcn.12246

Oelofsen, N., & Richardson, P. (2006). Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. Journal of Intellectual and Developmental Disability, 31(1), 1-12. doi:10.1080/13668250500349367

OPTUM. (2019). OPTUS PRO CoRE. Eden Prairie, MN.

Plant, K. M., & Sanders, M. R. (2007). Predictors of care-giver stress in families of preschool-aged children with developmental disabilities. *Journal of Intellectual Disability Research, 51*(2), 109-124.

Rand Trust. (2006). 12-Item Short Form Survey (SF-12). Retrieved from http://www.rand.org/health/surveys_tools/mos/12-item-short-form.html

Rivard, M., Terroux, A., Parent-Boursier, C., & Mercier, C. (2014). Determinants of Stress in Parents of Children with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders, 44*(7), 1609-1620. doi:10.1007/s10803-013-2028-z

Roberts, M., & Kaiser, A. (2011). The effectiveness of parent-implemented language interventions: A meta-analysis. *American Journal of Speech - Language Pathology (Online), 20*(3), 180-199A. doi:10.1044/1058-0360(2011/10-0055)

Rush, D., & Shelden, M. L. (2011). *The early childhood coaching handbook*. Baltimore, Md.: Paul H. Brookes.

Sackett, D. L. (1989). Rules of evidence and clinical recommendations on the use of antithrombotic agents. *Chest, 95*(2 Suppl), 2s-4s.

Sanderson, K., & Andrews, G. (2002). The SF-12 in the Australian population: cross-validation of item selection. *Australian and New Zealand Journal of Public Health, 26*(4), 343-345. doi:10.1111/j.1467-842X.2002.tb00182.x

Shilling, V., Morris, C., Thompson-coon, J., Ukoumunne, O., Rogers, M., & Logan, S. (2013). Peer support for parents of children with chronic disabling conditions: A systematic review of quantitative and qualitative studies. *Developmental Medicine and Child Neurology*, 55(7), 602-609.

Squires, J., & Bricker, D. (2009). *Ages & Stages Questionnaires* (3rd ed.). Baltimore, MD: Brookes Publishing.

StataCorp. (2015). Stata Statistical Software: Release 14. College Station, TX: StataCorp LP.

Steenbeek, D., Ketelaar, M., Galama, K., & Gorter, J. W. (2007). Goal attainment scaling in paediatric rehabilitation: a critical review of the literature. *Developmental Medicine & Child Neurology, 49*(7), 550-556.

Steenbeek, D., Ketelaar, M., Lindeman, E., Galama, K., & Gorter, J. W. (2010). Interrater Reliability of Goal Attainment Scaling in Rehabilitation of Children With Cerebral Palsy. *Archives of Physical Medicine and Rehabilitation, 91*(3), 429-435. doi:https://doi.org/10.1016/j.apmr.2009.10.013

Stratigos, T., & Fenech, M. (2018). Supporting parents' informed early childhood education and care choices through playgroups. *Australasian Journal of Early Childhood, 43*(4), 14-21. doi:10.23965/ajec.43.4.02

van Rijen, E. H. M., Gasanova, N., Boonstra, A. M., & Huijding, J. (2014). Psychometric qualities of the Short Form of the Self-efficacy for Parenting Tasks Index-Toddler Scale. *Child Psychiatry and Human Development, 45*(4), 443-455. doi:10.1007/s10578-013-0414-6

Vandenbroeck, M., Boonaert, T., Van Der Mespel, S., & De Brabandere, K. (2009). Dialogical Spaces to Reconceptualize Parent Support in the Social Investment State. *Contemporary Issues in Early Childhood, 10*(1), 66-77. doi:10.2304/ciec.2009.10.1.66

Ware, J., Kosinski, M., & Keller, S. (1996). A 12-Item Short-Form Health Survey: Construction of Scales and Preliminary Tests of Reliability and Validity. *Medical Care, 34*(3), 220-233. doi:10.1097/00005650-199603000-00003

Ware, J., Kosinski, M., & Keller, S. D. (1995). *SF-12: How to score the SF-12 physical and mental health summary scales* (2nd ed.). Boston, MA The Health Institute New England Medical Cente.

Wilkop, K., & Clothier, C. (2013). *Deconstructing the barriers to engage families with complex needs in early intervention services*. Paper presented at the 12th National Rural Health Conference: Strong commitment, bright future Adelaide Convention Centre. Deakin, ACT.

Williams, K., Berthelsen, D., Nicholson, J. M., Walker, S., & Abad, V. (2012). The effectiveness of a short-term group music therapy intervention for parents who have a child with a disability. Journal of Music Therapy, 49(1), 23-44.

Williams, K., Berthelsen, D., Viviani, M., & Nicholson, J. (2018). Facilitated parent-child groups as family support: A systematic literature review of supported playgroup studies. *Journal of Child and Family Studies, 27*(8), 2367-2383. doi:10.1007/s10826-018-1084-6

Wittkowski, A., Garrett, C., Calam, R., & Weisberg, D. (2017). Self-Report Measures of Parental Self-Efficacy: A Systematic Review of the Current Literature. *Journal of Child and Family Studies, 26*(11), 2960-2978. doi:10.1007/s10826-017-0830-5

Wright, A., Warren, J., Burriel, K., & Sinnott, L. (2019). Three variations on the Australian supported playgroup model. *International Journal of Social Welfare, 28*(3), 333-344. doi:10.1111/ijsw.12361

6.8 Randomised Control Trial Infographic

Government of **Western Australia**
Child and Adolescent Health Service

Curtin University

Randomised Control Trial for the Learn, Engage and Play (LEaP) Playgroup for children with developmental delays

Design

- ✓ Single-blinded **two-armed randomised control trial**
- ✓ **Assessors blinded** to treatment allocation

Follow-up

- ✓ Baseline = **0 weeks**
- ✓ Follow-up 1 = **12 weeks**
- ✓ Follow-up 2 = **28 weeks**

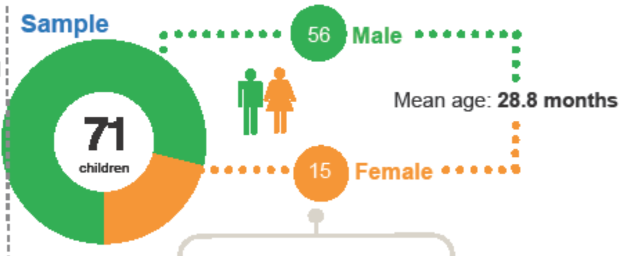
Eligibility

- ✓ Children aged **18 - 36 months**
- ✓ Referred to an **early intervention provider**
- ✓ Delayed in **communication and at least one other developmental domain** (ASQ-3)

Measures

- Parenting stress
- Parenting self-efficacy
- Family support
- Quality of life
- Child goal achievement
  - Function
  - Performance
  - Satisfaction
- Child vocabulary

Sample



Mean age: **28.8 months**

LEaP group	2 withdrew	**Control group**	3 withdrew
34 children	Male 29, Female 5	37 children	Male 27, Female 10
Mean age: 29.9 months		**Mean age: 27.7 months**	

Treatment as usual **PLUS** LEaP playgroup

Treatment as usual

LEaP playgroup:

- 8 weekly sessions
- 2 hour sessions
- 2 allied health facilitators

Core content

Results

12 weeks — LEaP group significantly better than control group in 2/5 outcomes:goal achievement and family support

- **Performance** p=0.022
- **Function** p=0.008
- **Family support** p=0.024

28 weeks — LEaP group significantly better than control group in goal achievement

- **Performance** p=0.042
- **Function** p=0.012

LEaP demonstrated significant 'within group' changes for parent stress and quality of life

- **Parenting distress** p=0.018
- **Quality of life** p=0.031

No significant differences between groups in parenting stress, parenting self-efficacy, quality of life and child vocabulary

Conclusion

- First randomised control trial of a therapeutic playgroup (first Grade II evidence for therapeutic playgroups)
- LEaP is a promising intervention in improving child outcomes and family social support for children with developmental delays
- Confirms the appropriateness of goal achievement measures to evaluate novel interventions

Community Health | Mental Health | Perth Children's Hospital

Chapter 7 Paper VI: Process Evaluation of the LEaP Playgroup

Foreword

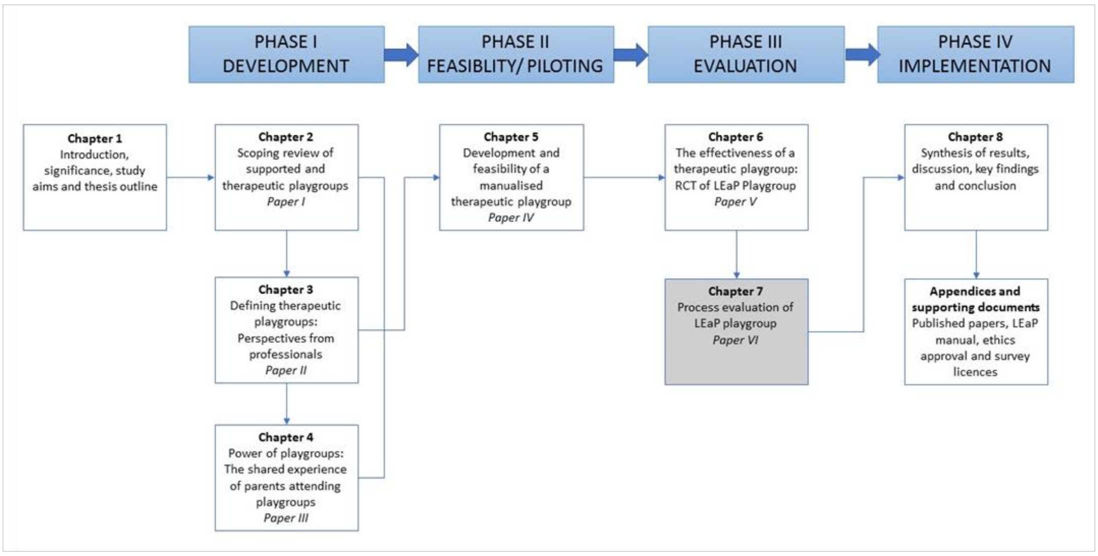
Chapter 7 outlines the process evaluation that was conducted in conjunction with the randomised control trial described in chapter 6. This forms the final phase of the research project with the aim to evaluate the Learn, Engage and Play (LEaP) playgroup implementation and identify potential mediating factors that influenced trial outcomes. In the KTA framework[8] this chapter forms a key component of the action cycle inclusive of 'assessing barriers to knowledge use' and 'evaluating outcomes.'

Findings indicated LEaP was implemented as per protocol and mediating factors reflected core LEaP practice principles, reinforcing adherence to fidelity. Qualitative data from parents and professionals indicated LEaP was perceived to improve children's skills, parental knowledge, parent-child relationships and family social support whilst also streamlining early intervention service pathways and referrals. These supported quantitative findings from the randomised control trial and highlighted LEaP as an evidence-based intervention. However, it also provided recommendations for LEaP improvement and ongoing LEaP research and evaluation.

Paper VI study methodology

Study Aim	Study Design	Sample	Data Collection	Data Analysis	KTA Framework Stage
To examine implementation, mediating factors and perceived effectiveness of LEaP	Mixed method process evaluation	Parents who attended LEaP (n=30) Professionals who facilitated LEaP (n=4)	Focus groups (5) (n=25) Interviews (n=7) Questionnaires (n=15) Attendance rates and cost of LEaP playgroup	Qualitative data: Framework Method Descriptive statistics	*Action Cycle*: Assess barriers to knowledge use; monitor knowledge use; and evaluate outcomes

Paper VI mapped to thesis chapters



This manuscript has been prepared for journal submission.

Armstrong, J., Pieterse, B., Davidson, E., Mizen, J., Wray, J., & Elliott, C., & Girdler, S. (2019). Understanding the implementation of a therapeutic playgroup for children with developmental delay: A process evaluation. *Manuscript prepared for journal submission.*

PAPER VI: UNDERSTANDING THE IMPLEMENTATION OF A THERAPEUTIC PLAYGROUP FOR CHILDREN WITH DEVELOPMENTAL DELAY: A PROCESS EVALUATION

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7.1 Abstract

Background: Process evaluations are increasingly recommended as a means of evaluating the implementation of complex interventions to identify potential influencing factors on intervention fidelity and outcomes. Conducted in parallel with a randomised control trial (RCT) evaluating the Learn, Engage and Play (LEaP) playgroup for children with developmental delay, this process evaluation aimed to assess program implementation, exploring factors that may have mediated RCT outcomes.

Methods: Adopting a mixed method approach, qualitative data were sought from parents (n=30) and playgroup facilitators (n=4), with further data considered from the RCT in relation to recruitment, reach, playgroup dosage, and standard care.

Results: Findings indicate LEaP was implemented as designed and the statistically significant differences demonstrated in secondary outcome measures were due to LEaP rather than unintended contextual or causal factors. Qualitative data revealed LEaP was highly valued by facilitators and parents and was perceived to improve children's skills, parental learning, parent-child relationships and parental social support.

Conclusion: LEaP is an effective and evidence-based service option for children with developmental delays and their families from varied cultural and socioeconomic backgrounds. Perceived as beneficial by both parents and therapists, if implemented as intended, LEaP has the potential to improve parent and child outcomes.

Keywords: process evaluation, therapeutic playgroups, playgroups, implementation, developmental delay, and developmental disability.

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Declaration of interest

The authors report no declarations of interest.

7.2 Introduction

The gap between science and practice is well established with research consistently demonstrating that evidence-based interventions are rarely adopted or implemented in clinical practice as intended [1]. Recognition of the ‘science to practice gap’ has underpinned the emergence of translational research and implementation science frameworks and pathways [2-4]. These approaches recognise that the true value of a health interventions are judged fundamentally in relation to their demonstrated effectiveness in clinical practice, therefore to be considered beneficial, outcomes need to demonstrate effective intervention and implementation [5]. While research predominately focusses on conducting rigorous evaluations of interventions under controlled conditions, there is increasing acknowledgement of the need to describe and develop approaches supporting the translation of interventions into service delivery contexts [5]. However, before effective implementation pathways can be developed, understanding of the process of implementation is needed, including those factors most relevant to implementing a program prior to wider scale implementation.

A process evaluation provides a methodology for understanding and analysing the quality and fidelity of intervention implementation, identifying the causal factors and contextual components influencing intervention outcomes [6]. Process evaluations examine the relationships between intervention components and treatment outcomes, determining the extent to which the intervention was implemented as intended [7]. While the randomised control trial (RCT) design is considered the gold standard in examining intervention effectiveness, a process evaluation provides a valuable understanding of those factors influencing an intervention’s implementation and its subsequent outcomes, supporting translation of the intervention across ‘real world’ contexts and target populations [8]. When employed in parallel with an RCT, a process evaluation explores the factors influencing implementation, informing the interpretation of trial results. Process evaluations enable insight as to whether trial outcomes accurately reflect the studied intervention or are more likely attributable to poor implementation or fundamentally flawed theoretical assumptions or concepts [9].

This study forms the final part in a line of research aiming to develop and evaluate the Learn, Engage and Play (LEaP) therapeutic playgroup for children with developmental delays when initially referred to the Child Development Service (CDS), an early intervention service in Perth, Australia. While playgroups feature prominently in Australian society, little research has aimed to systematically develop and evaluate playgroup models [10]. In line with the Medical Research Council's (MRC) framework for the development and evaluation of complex interventions [6] a process evaluation was undertaken in conjunction with an RCT evaluating the effectiveness of the LEaP playgroup [11]. Guided by the MRC's process evaluation framework [8], this study sought to determine if the LEaP playgroup was implemented and evaluated as intended within the RCT, providing further insight as to whether the outcomes of the RCT were a result of the implementation of LEaP as designed, rather than the result of unintended contextual or other factors [9].

While LEaP failed to demonstrate statistically significant improvement on the primary outcome measure (parent stress) at post-test and follow-up in the RCT, findings suggested a trend towards improvement but were not unequivocal. Compared to treatment as usual (TAU), those receiving the LEaP playgroup plus TAU did however, demonstrate statistically significant improvement on the secondary outcome measures of family support at post-test (p=0.024), and statistically and clinically significant improvement in child goal achievement at post-test (performance p=0.022; function p=0.008) and follow up (performance p=0.042; function p=0.012) [12].

This study aimed to examine the perceived effectiveness of LEaP from the perspective of parents and facilitators contributing to further understanding of the impact of the program [13]. Our understanding of evidence-based practice is evolving, with researchers amalgamating empirical research methods with the views of patients and clinical expertise [13]. The pillars of evidence-based practice require interventions to be evaluated on statistical significance, clinical significance and personal significance (as measured in relation to patient values and understanding) [14-16]. This study evaluated the personal significance component of the LEaP playgroup, seeking the perspectives of LEaP participants and facilitators. It aimed to examine: i) the usability, implementation of, mediating contextual factors and barriers associated with LEaP; and ii) the perceived effectiveness of LEaP. These findings will contribute to playgroup's research profile, increasing allied health therapists' knowledge and ability to implement evidence-based playgroup models.

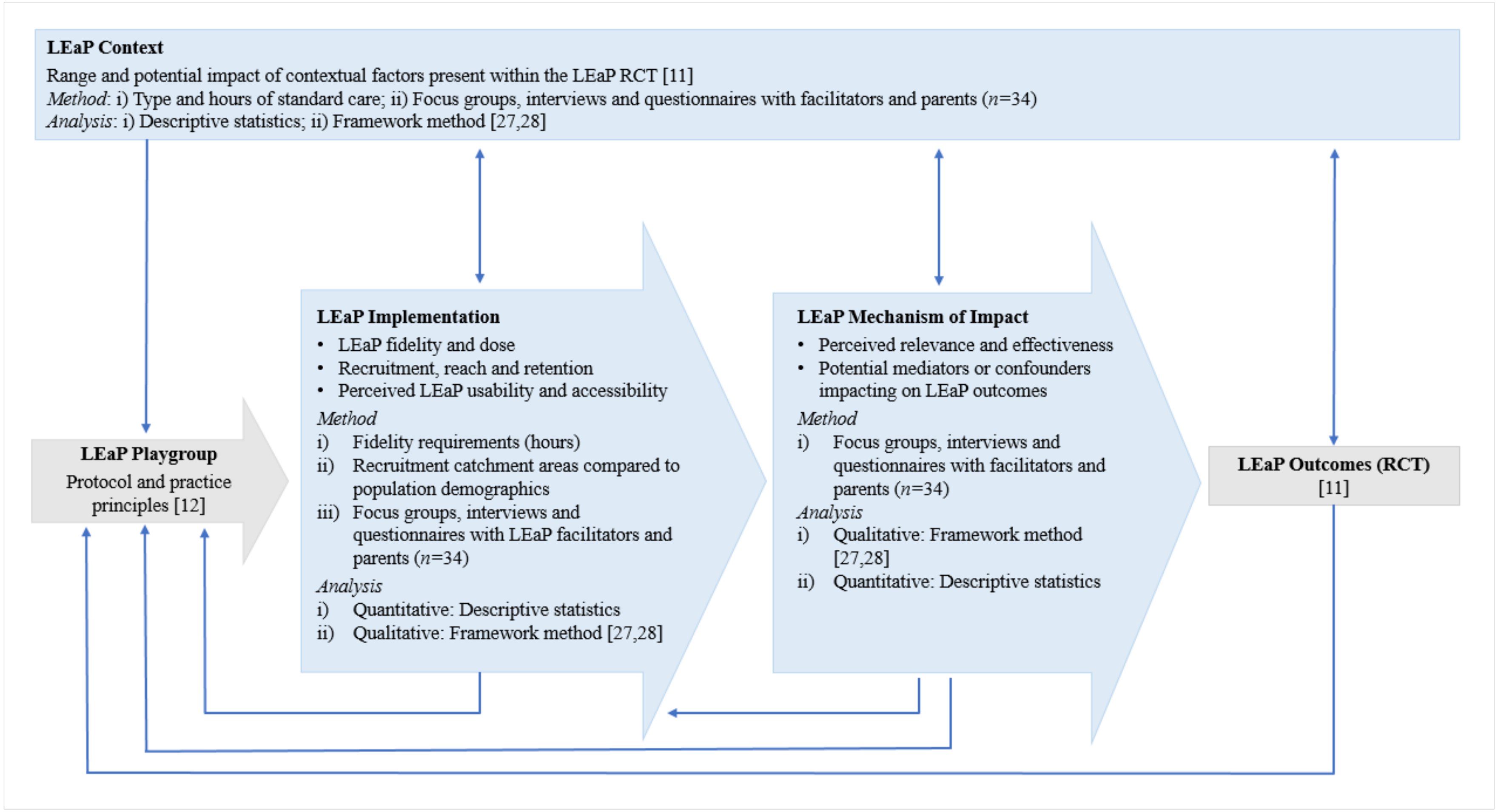
7.3 Materials and Methods

Design

This process evaluation was conducted in parallel with an RCT and adopted the MRC process evaluation framework [8]. This single-blind two-armed RCT compared the effectiveness of LEaP plus TAU compared to TAU only, monitoring outcomes at baseline, 12 weeks and 28 weeks [11]. As per the MRC guidelines, a mixed model methodology examined contextual influences, the quality and fidelity of the implementation, mechanisms of impact, and the perceived effectiveness of LEaP. Key process evaluation functions and associated methods are outlined in Figure 7.1.

Contextual factors were examined through a review of early intervention contextual components, including describing the range of TAU received by children during the RCT study. Implementation was evaluated through a review of facilitator training requirements, adherence to treatment fidelity, LEaP attendance rates and dosage, with 'reach' assessed in relation to recruitment and retention rates [8]. Mediating mechanisms and perceived effectiveness were evaluated using qualitative data from LEaP parents and facilitators.

As per Moore and colleagues [17] recommendations for planning a process evaluation, this study was designed and conducted in collaboration with key stakeholders including CDS consumers, staff and managers. The research team, consisting of university academics, health service directors and clinical consultants, provided researcher expertise in qualitative and quantitative methodologies and clinical expertise in developmental delay and early intervention service delivery [8].



Note: Figure adapted from Moore and colleagues [8]; LEaP: Learn, Engage and Play; RCT: randomised control trial [11]

Figure 7.1 Key functions of the LEaP process evaluation

Participants

Participants for the focus groups, interviews and questionnaires comprised of parents of the children in the LEaP trial and allied health clinicians. Parents were eligible if they participated in the RCT and were randomly allocated to the LEaP playgroup. Allied health clinicians were eligible if they facilitated LEaP within the context of the RCT [11]. Of the 34 families allocated to LEaP, a total of 30 parents participated in the process evaluation with their demographic characteristics outlined in Table 7.1. Two parents were a mother and father of the same child. Two parents withdrew from LEaP and three parents were unable to attend focus groups or interviews at LEaP cessation. Each playgroup was facilitated by two allied health clinicians who remained consistent across all sessions. All clinicians who facilitated the LEaP playgroups during the RCT participated, comprising a speech pathologist (n=1), occupational therapists (n=2), and a physiotherapist (n=1) with their clinical experience outlined in Table 7.2.

Intervention

The LEaP playgroup was systematically developed using the MRC framework for the development and evaluation of complex interventions [6]. This process ascertained LEaP causal assumptions [18], the comprehensive details of LEaP development and practice principles are reported elsewhere [12]. LEaP targeted children aged 18 to 36 months presenting with significant developmental delays in communication and at least one other developmental domain. LEaP consisted of eight consecutive weekly sessions of two-hours in duration with a total program dosage of 16 hours. Content focused on parent-child attachment [19], language facilitation strategies [20], and parent responsiveness [21]. Each LEaP session catered to a maximum of eight families and was led by two therapists with a minimum of five years' experience working with children at risk of developmental delay or diagnosed with a developmental disorder and their parents. Facilitators were required to attend a one-day training course and meet coaching fidelity [22]. The RCT evaluated LEaP plus TAU compared to TAU only [11].

Table 7.1 Characteristics of parent participants and their children

Characteristic	n (%)
Parent characteristics (*n*=30)	
Parent relationship to child	
Mother	28 (93)
Father	2 (7)
Parent age	
20 – 29 years	6 (21)
30 – 39 years	18 (62)
40 – 49 years	5 (17)
Parent education	
High school	5 (17)
Vocational training	5 (17)
Undergraduate	12 (41)
Postgraduate	7 (24)
Weekly household income ($AU)	
No response	1 (3)
$0 - $999	7 (24)
$1000 - $1249	7 (24)
$1250 and over	14 (48)
Main Language spoken at home	
English	21 (72)
Other	8 (28)
Child Characteristics (n=29)	
Mean (SD) child development	
Early Learning Composite (MSEL)	63.7 (12.7)
Therapy	
Mean (SD) LEaP dosage (sessions)	7 (1.4)
Mean (SD) Standard dosage (hours)	9.3 (5.8)

Note: Data are *n* (%) unless otherwise indicated; $AU: Australian dollars; SD: standard deviation; MSEL: Mullen's Scale of Early Learning [18]**;** LEaP: Learn, Engage and Play

Table 7.2 Characteristics of LEaP facilitators

Characteristic	n (%)
Facilitator discipline	
Occupational therapist	2 (50)
Physiotherapist	1 (25)
Speech Pathologist	1 (25)
Mean (SD) clinical experience (years)	12.8 (5.8)
Mean (SD) employed with CDS (years)	8.5 (3.6)

Note: SD: standard deviation; LEaP: Learn, Engage and Play

Data collection

Qualitative

Focus groups and semi-structured interviews gathered parents' and facilitators' perspectives of LEaP usability, implementation, effectiveness and mediating factors. Focus groups for parents were offered within the final LEaP session (n=23) and semi-structured interviews (n=5) were offered to parents unable to attend a focus group. Parents (n=15) also provided qualitative feedback through written responses to the 'comments about parenting program' section of the Tool to Measure Parenting Self-Efficacy (TOPSE) booklet [23] completed within four weeks of LEaP cessation. Most parents (n=12) providing TOPSE qualitative data had participated in either focus group or interview, but qualitative data from three additional parents were captured via the TOPSE. Facilitators were invited to participate in either a facilitator focus group (n=2) or individual interview (n=2) after LEaP finished.

Quantitative

Data were collected during the RCT on playgroup attendance and dosage, recruitment and retention rates, and facilitator training and fidelity resourcing (hours). A treatment diary was used to record the amount and type of standard care received. Standard care was identified as any appointments (hours) with occupational therapy, speech pathology, physiotherapy, social work, clinical psychology, audiology or a paediatrician at the CDS or privately during the RCT and up to 28 weeks from baseline. To assess recruitment reach, recruitment rates and associated geographical socioeconomic disadvantage and prevalence of developmental vulnerability, sites were compared using the Socio-Economic Indexes for Areas (SEIFA) [24], and the Australian Early Development Census (AEDC) [25]. The SEIFA is a measure of socioeconomic advantage and disadvantage (Australian Bureau of Statistics, 2016) and the AEDC measures children's developmental vulnerability in physical health and wellbeing, emotional maturity, social competence, language and cognition, and communication when starting school [25].

Data analysis

Qualitative

Focus groups and interviews were audiotaped and transcribed verbatim. Qualitative comments written in the TOPSE booklet [23] were collated for analysis. Data were managed using NVivo 12 [26] and analysed using the Framework Method [27,28]. Transcripts were read multiple times and significant statements coded against process evaluation key functions. This was conducted independently by two researchers who then compared codes, reaching consensus through discussion, prior to the final charting of themes [27,28].

Quantitative

Quantitative data were analysed descriptively and, when appropriate, measures of central tendency and spread were examined. Data were managed using SPSS version 24 [29].

Ethics

Informed consent was obtained from all participants and ethics was granted by Perth Children's Hospital Human Research Ethics Committee (2015181) and Curtin University Human Research Ethics Committee (HR228/2015).

7.4 Results

Study findings are charted against the key process evaluation functions of contextual factors; implementation fidelity; and mechanisms of LEaP impact inclusive of perceived effectiveness.

Context

Contextual factors influencing the participation and effectiveness of the LEaP intervention were standard care, playgroup location and the geographical spread of participants.

Standard care

Within the context of the RCT children allocated to LEaP also received standard care within the CDS, freely accessing additional services from private providers as needed. As reported in the RCT, there was no significant difference in the amount of standard care received by LEaP participants and the control group [11], indicating the amount of standard care received by both groups was comparable. Children in this study, that is those allocated to LEaP (n=29), received on average 9.3 (SD 5.8) hours of standard care during the 28-week trial. As per Figure 7.2, speech pathology comprised over 50 percent of the standard care received followed by occupational therapy.

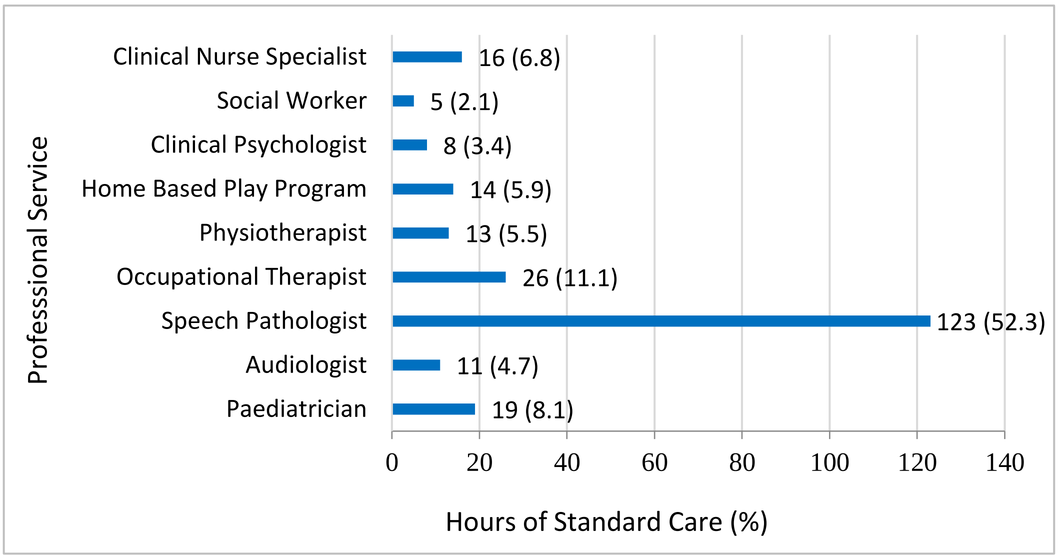


Figure 7.2 **Standard care received by LEaP children from baseline to follow up (28 weeks)**

Some parents (n=5) whose children received (standard care) therapy while attending LEaP reported the content and strategies covered during LEaP were similar to those learnt during other therapy sessions. While one parent felt LEaP provided an effective context to practise and reinforce strategies others felt this repetition was unnecessary with two reporting LEaP was their preferred context to learn and practise strategies:

> *I was expecting something a little bit different so to come here and find the focus is the same as I was doing in another group, it was nice to apply it in a different setting, because the other course we did the parents sat in the classroom with two hours having them teach you.* (Parent 1, Focus group 1)

Both facilitators and parents perceived LEaP as providing an effective ‘first service’ for families, building foundational skills, including teaching parents to be responsive and facilitating parent-child attachment, preparing the way for future therapies:

> *We're about to start speech therapy and the value of [LEaP] has been, to actually make me active. I feel ready, I feel like I'll get more out of speech pathology now, I'm practised and I'm implementing it actively… [LEaP] is a good foundation.* (Parent 6, Focus group 2)

Geographical spread

Within the RCT context families were recruited from a large geographical area to ensure a sufficient sample size to allow for random allocation of participants to LEaP and the control group. This resulted in a larger geographical spread and distance between participants and increased travel for some families to attend playgroup: *"If the service [LEaP] goes ahead I guess it would be offered closer to people which would be beneficial" (Parent 1, Focus group 1)*.

The wide geographical spread of parents presented a barrier in maintaining friendships and social connections once LEaP was over, with parents citing travel distance as the main challenge:

> *Part of the purpose and the benefit from this is relationship building. And we're actually all too far apart to maintain that. If we were around the corner from each other, we would tap into each other during, and probably post the program.* (Parent 6, Focus group 2)

Implementation

Key implementation considerations included fidelity to the LEaP protocol and associated resources, recruitment reach and retention, and perceived useability and ease of implementation.

Treatment fidelity and dosage

A high level of fidelity was achieved and maintained during the RCT [11], as monitored with a fidelity protocol previously published [12]. Fidelity requirements per LEaP facilitator equated to 15 hours per playgroup, and the total fidelity requirement per playgroup inclusive of supervisor's time, equated to 38 hours. The minimum target LEaP dosage of six sessions was on average achieved by RCT participants [12], with process evaluation participants averaging seven LEaP sessions (SD 1.39).

Parents reported their attendance at LEaP was enabled by the inclusive nature of playgroup, including provisions for siblings and other family members to attend, making it more accessible:

> *Even being able to bring our other kids along and being comfortable bringing them along… I don't have any other help, just my partner who works all week so knowing that I could bring them here... That made me want to come every week.* (Parent 2, Focus group 2)

Qualitative data revealed implementation fidelity was enhanced by skilled LEaP facilitators, training and supervision, appropriate staff-to-family ratios and ensuring information was provided to parents in multiple formats. Facilitators required significant expertise in early intervention and coaching to effectively implement the transdisciplinary LEaP model:

> *The person or people doing it would need to be highly skilled in early intervention and have a knowledge of all those language strategies... it's that fine tuning that they might not know about it unless they have had that experience.* (Facilitator, Interview 1)

Implementation fidelity was improved by training and supervising facilitators and the provision of a LEaP facilitator manual: *"I think the one-day training was useful and the manual, I referred to the manual pretty much like a bible"* (Facilitator, Interview 2). Parents' understanding of the key messages and content, and the strategies taught during LEaP was reportedly enhanced by receiving information in multiple formats including via group discussion, in writing (on cue cards and handouts), and through individual coaching and discussion with the facilitators.

The ratio of facilitators to families emerged as important in implementation fidelity, with parents stating that having four to five (target) children per group allowed for siblings to be present and still allowed for sufficient individual time with facilitators. However, facilitators reported that with a volunteer assisting, they could accommodate a maximum of eight children with siblings:

> *The last group we ran there was eight kids and most weeks we had six to seven and not that many siblings, I think only one sibling consistently came and that was a really good number.* (Facilitator, Interview 2)

In relation to dosage, both parents and facilitators agreed the frequency (weekly) and session length (two hours) of LEaP as manualised were appropriate but disagreed regarding the ideal duration of the program (eight sessions). While facilitators stated that eight weeks was sufficient to build parental capacity and social connections: *"it was an appropriate duration, no shorter, I think it was just perfect"* (Facilitator, Interview 1); parents overwhelmingly recommended LEaP duration be extended to between 12 weeks and six months, reporting the first weeks were spent settling their child into playgroup and getting to know other parents. Parents felt that by the eighth session their children were comfortable and engaging in playgroup, and then LEaP ended; *"eight weeks is quite short. It's like you get information but you are just stuck at the end all by yourself…So I feel it should be a bit longer"* (Participant 1, Focus group 2). Parents advocated that extending the duration of LEaP would enable them to consolidate their learning, continue to implement and practise strategies and strengthen their relationships with other families:

> *In another two to four weeks we would have made some really good friendships, we were just feeling each other out, the first three weeks we were like, "Don't judge me, don't judge me because I am here." And then by eight weeks we were like, "Oh we are all in this together."* (Parent, Interview 5)

The common theme of 'where to next' captured parents' uncertainty in relation to how they would access supports through their social and community networks at the conclusion of LEaP: *"I have really enjoyed having it each week and I think there will be a gap, I am going to really miss it."* (Parent 3, Focus group 1)

LEaP recruitment, reach and retention

The RCT recruitment details are previously published with the study recruiting a total of 71 children, with 34 randomised to LEaP and 37 randomised to the control group [11]. Participants were recruited from CDS sites across the Perth metropolitan area (Australia). From the available 11 sites, seven were chosen for recruitment based on referral data and geographical location. Recruitments rates and associated geographical socioeconomic disadvantage (SEIFA) and developmental vulnerability (AEDC) for each site are displayed in Table 7.3. The SEIFA decile scores are ranked from the lowest to the highest socioeconomic measure, with 1 indicating a geographical area within the lowest 10 percent of socioeconomic areas within Australia [24]. The AEDC score indicates the percentage of children entering school within an area who are developmentally vulnerable in two or more domains is also displayed in Table 3 [25].

Recruitment rates for all RCT participants (n=71) were highest from sites 1, 2 and 3. The range of socioeconomic disadvantage and developmental vulnerability across sites suggests the RCT recruitment 'reach' was inclusive of children and families from a range of sociodemographic backgrounds. Of the families allocated to (and who completed) LEaP (n=32), 25 percent reported English was a second language (n=8) and 75 percent (n=24) reported their weekly income was less than $1,499 (Australian dollars), which falls slightly below the average Australian family weekly income of $1,543.80 [30]. In contrast, the level of parental education among families allocated to (and who completed) LEaP (n=32) was higher than the Australian general public, with over 60 percent (n=21) of parents reporting they had achieved a bachelor's degree or postgraduate qualification, compared to 31.4 percent of Australian adults in the general population [31].

Table 7.3 Geographical recruitment sites and corresponding socioeconomic disadvantage and developmental vulnerability

CDS catchment	RCT (n=71)	LEaP only (n=34)	SEIFA Decile average	AEDC Vulnerable in two or more domains (%)
Site 1*	18 (25.4)	7 (20.6)	5.4	10.3
Site 2*	17 (23.9)	10 (29.4)	5.8	9.3
Site 3	14 (41.2)	7 (20.6)	8.4	6.6
Site 4	6 (17.6)	2 (5.9)	5.4	8.5
Site 5*	6(17.6)	1 (2.9)	5.0	9.8
Site 6*	6(17.6)	4 (11.8)	6.1	8.6
Site 7	4 (11.8)	3 (8.8)	8.1	5.6

Note: Data are *n* (%) unless otherwise indicated; *Involved in 3 recruitment rounds (other sites only involved in 2 recruitment rounds); CDS: Child Development Service; RCT: Randomised Control Trial; LEaP: Learn, Engage and Play; SEIFA: Summary - Index of Relative Socio-economic Disadvantage, 2016; AEDC: Australian Early Development Census (AEDC)

Perceived usability and ease of implementation

The activities and structured routine of LEaP emerged as key factors in supporting the usability and implementation of the program. Fidelity required facilitators to provide a minimum of six different activities at each session, both indoors and outdoors, with the LEaP manual outlining 10 activity suggestions. Facilitators were free to choose any six of these 10 activities. Facilitators emphasised the importance of having a range of activities available to suit the varying developmental abilities of children in each group, stating that some of the suggested activities, and particularly the craft activities, were too complex for the children. Facilitators described adjusting the craft activities for some groups:

> *We were talking about craft being too challenging for this group. Last group we had one girl who was great and loved it, but just having this last group, they're all a bit not quite able to do the craft.* (Facilitator 1, Focus group)

Adherence to fidelity focused on facilitators' implementation of family-centred practice, facilitation of parent socialisation and delivery of key messages. Adapting activities to align with children's developmental stage is encouraged within the LEaP manual and this did not negatively impact the fidelity of LEaP. However, findings demonstrated that the manual should highlight that activities in the manual are provided as suggestions only, and that facilitators should focus on providing a range of developmentally appropriate activities, rather than on specific activities.

Parents and facilitators also emphasised the importance of allowing for flexibility within the LEaP routine, catering to children's attention and concentration skills, and specific interests. For example, facilitators suggested that flexibility in relation to the time allocated to mat time might help in accommodating children with varying attention spans, or having a gross motor activity prior to mat time might enhance concentration:

> *Trying to get the children to sit for mat time, that was probably the hardest aspect of the group… we tried lots of different strategies to support the children over time and some weeks were better than others.* (Facilitator 2, Focus group)

Mechanism of impact

Qualitative findings are discussed in terms of the perceived effectiveness of LEaP and factors mediating the success or failure of LEaP. Qualitative themes and subthemes are demonstrated in Table 7.4.

Table 7.4 Mechanism of impact

Key function	Themes	Subthemes
Perceived effectiveness	Child	Child development Child enjoyment Socialisation
	Parent	Parent-child relationships Learning strategies and skills Social connections
	Early intervention service	Transdisciplinary practice High attendance rates Early screening and referrals
Mediating factors	Facilitator characteristics	Relational Participatory Technical
	Participant experiences (shared experience)	Reducing social isolation Feeling accepted Sharing strategies
	Playgroup structural characteristics	Play-based and child-led Range of activities Routine Natural learning opportunities
	LEaP content and method of delivery	Content Multifaceted information delivery Coaching model

LEaP relevance and perceived effectiveness

Facilitators and parents perceived LEaP as an effective intervention for parents, children and the service: *"I just feel so lucky to have been chosen, it's really, really helped [John]. He has gone from throwing tantrums daily, not speaking to me, running and head butting me because he just wouldn't speak, and now he is talking and he's really, really improved"* (Parent 5, Focus group 4).

Child benefits. Children were perceived to benefit both developmentally and socially from attending LEaP. Parents stated children enjoyed attending LEaP, benefitting from the regular socialisation and peer modelling opportunities, which being in a group with other children afforded: *'[Adam] loves the space which is a great thing, he loves to come, he's not being forced to come, there is no fight to get him in the car, he is waiting in the car at 7.30am to leave, so it's been great'* (Parent 3, Focus group 4). Parents appreciated that LEaP provided opportunities to expose their children to social interactions with other children:

> *I like the idea that [Daniel] gets to socialise because we never went to any playgroup or mothers group, he has never ever really socialised with anyone, I don't know anyone with kids his age, I feel like such a loner, but this has been really beneficial for him and he absolutely loves coming.* (Parent 2, Focus group 4)

Parents and facilitators associated LEaP participation with significant developmental gains in the children, particularly in relation to their communication, play and interaction, and behaviour. These were attributed to the parent-child interaction and parental responsiveness strategies taught and practised during the LEaP sessions and at home: *"I noticed a huge difference in [Lucas], and how we, over these last few weeks, just find little things… it's crazy how much he's changed in these last couple of weeks from what I've learned and am doing at home"* (Parent 2, Focus group 2).

While some facilitators questioned whether LEaP was as beneficial as individualised therapy for developmentally complex children, parents perceived LEaP as having many benefits in comparison to individual sessions, resulting from both being in a group and receiving one-on-one attention from LEaP facilitators. Compared to alternative approaches, such as individual therapy, LEaP was seen as having several advantages to children and families: "*I have a daughter with Autism so I have had years and years of therapy, but [LEaP] has been, out of everything I have been to, the best thing I have ever been too."* (Parent 2, Focus group 3)

Parent benefits. Parents perceived LEaP as improving their attachment to and relationship with their child, increasing their skills and knowledge of how to support their child's developmental challenges, and increasing their social connections and engagement with other parents and the community.

For parents, LEaP supported them in connecting, playing and engaging with their child, strengthening their relationship with, attachment to and enjoyment of their child: *"Making us learn how to engage with our child and its really helpful because our relationship is getting better, its developing and getting deeper and deeper so there is more connection between [Charlie] and me."* (Parent 7, Focus group 4)

Overwhelmingly, parents valued learning and implementing strategies to support their child's development, reporting that attending LEaP improved their confidence as parents, which also enhanced their child's development. LEaP taught parents to interact with and engage more effectively with their children in play, supporting the development of children's communication skills, and their capacity to positively manage and support their children's behaviour:

> *This is the first formal sort of therapy that [Anna] has had, so it has been exponentially great for her and good for us to know how to help her the best way that we can, like where she is at, so it's been really, really good.* (Parent 3, Focus group 3)
>
> *I think the best thing was to see the shift in the kids and how much the parents appreciated it and how much knowledge they got and built on each week.* (Facilitator, Interview 2)

Attending LEaP also built social connections between parents, with many reporting forming friendships with other parents, thereby reducing their social isolation and enhancing their community engagement and sense of belonging:

> *I am thankful because being in this group has been brilliant for me, just realising I am not the only one going through this and in this situation, having these difficulties. So it's made me not feel alone in this world.* (Parent 7, Focus group 4)

Early intervention service benefits. LEaP reportedly benefited the CDS by improving facilitators' transdisciplinary knowledge; creating high levels of attendance and family engagement; and facilitating early screening and referral to appropriate services; *'from a clinician's professional development [LEaP] is huge for transdisciplinary skills…It would help a lot with just generally working collaboratively with your colleagues on goals, knowing how to support communication, play and emotional issues'* (Facilitator 1, Focus group). Facilitators felt LEaP effectively engaged families with the CDS, pointing to the high levels of attendance which stood in contrast to general attendance at other services: *'I would say the DNA (did not attend) rate was very low, most families attended all sessions unless they were sick or something like that, so the dropout rate was really low…the families got so much out of it, and arguably got more out of it than* *they would individual sessions'* (Facilitator, Interview 2). These comments were further supported by the attendance data.

Therapists valued the structure of LEaP, for providing opportunities for observing children and families across a range of activities and transitions, contrasting LEaP against traditional groups or individual sessions where these opportunities were more limited. LEaP supported screening and identification of challenges, allowing facilitators to individualise strategies and tailor their referrals to other services: "*You really get to see quite a range. Like outdoor, indoor, mat time, singing. So, things you wouldn't always get to see in a clinic, a one-hour clinic or appointment"* (Facilitator 2, Focus group).

Mediating factors

Qualitative data revealed that the key mechanisms underpinning the perceived effectiveness of LEaP and its limitations reflected the core playgroup principles as outlined by the authors in previous studies, inclusive of facilitator, parental and structural characteristics [12], overlaid by LEaP content and approaches to information delivery.

Facilitator characteristics. Facilitators were central to the perceived effectiveness of LEaP with parents reporting their experience was enhanced by the presence of skilled and knowledgeable facilitators demonstrating high level relational skills, who worked in partnership with families, addressing their concerns, and supporting their child's development: *"They're extremely professional, they're extremely nice, sincere, genuine, really lovely ladies. They worked really, really well... They're not judging you either, which is really nice"* (Parent 3, Focus group 2).

Facilitators' interpersonal and relational skills were crucial in promoting parents' feelings of comfort and acceptance, and were described by parents as welcoming, warm, non-judgmental, accepting and understanding, inspiring parents' sense of hope in relation to their child's development and future:

> *They are very good at their job and they are also not judgemental, they give you hope that if you keep trying then things will get better. Working with them has been great because each day I feel encouraged that one day, things will be better.* (Parent 3, Focus group 4)

Facilitators technical skills and expertise were instrumental to LEaP succeeding, with highly trained facilitators providing developmental strategies and supports, enhancing children’s learning and improving their outcomes: *“We have a therapist present which is really helpful, because they help you with everything and you have access to them to ask questions along the way, that’s what I liked about [LEaP] the best.”* (Parent 2, Focus group 3)

Working in partnership with parents’ facilitators tailored strategies to address parents’ concerns, collaboratively achieving their goals for their children: *“I really liked sharing and getting information. [LEaP facilitators] were really helpful, just to know where my child was at and being able to absorb the information from each session and they really know how to approach our child’s behaviour.” (Parent 7, Focus group 4)*

Participant characteristics. Sharing the experience of parenting a child with developmental challenges was fundamental to LEaP, fostering a sense of connection between families, reducing their sense of isolation:

> *When we realised we all had very similar issues and we could all relate and we could all support and all understand, we were like, we want to be here all the time… the fact that you could go, you weren’t judged, everyone was there for the same reason, everyone was supported, everyone was guided and everyone was helped.* (Parent, Interview 1)

In contrast to other settings, which parents experienced as ostracising because of their child’s differences, LEaP provided a ‘safe’ environment where their child was welcomed with understanding and acceptance by other parents and families, building parents’ feelings of comfort and support: *“They would look and think ‘why don’t you control your child’…but here it’s been like a safe place, for [Anna] just to be [Anna].”* (Parent 3, Parent focus group 3)

Other LEaP parents served as key sources of information, with parents valuing the opportunities to share ideas and suggestions, improving their confidence and learning: *“I'd definitely recommend it to them [other families] because you kind of see what other people are doing, hear their stories, you know, maybe you can implement different strategies to help your child improve. So, yeah, I'd definitely recommend it for other people.”* (Parent, Interview 1)

Playgroup structural characteristics. The inherent structure of LEaP was emphasised as paramount to its success. Parents and facilitators indicated the flexible, play-based and child-led format of LEaP created a fun, relaxing, non-threatening and engaging environment for children and families: *'It's quite fun and relaxing. It's a good way to get him to know the other kids with a similar problem as him and maybe we can learn from the other parents too…the most important thing, I relaxed'* (Parent, Interview 4).

Underpinning the success of LEaP were its key structural components, including the consistent yet flexible playgroup routine, the wide range of play options and natural learning opportunities available, and the emphasis on child initiated and child-led play. The two-hour LEaP session, while flexible, was also structured, combining facilitator-led whole group activities, with parent-and-child unstructured play time, parent-to-parent socialisation opportunities, and individual contact between parents and facilitators. These structural combinations were perceived to meet the varying needs of children and parents: *"The structure of this playgroup has struck me as notably fantastic. It was the way they structured it, with a little bit of one-on-one time. The fact that we all got to sit down and have a cup of tea may have had the biggest impact on me…That actually impacted how I cared for my child for the rest of the day"* (Parent 6, Focus group 2).

The routine of LEaP also incorporated naturally occurring activities and routines of children and families such as snack time, transitions, dressing and toileting. These provided natural learning opportunities within sessions, supporting the translation of skills into the home and community context:

> *We're in the environment that we would have at home, whereas at speech therapy, it's just me and him, but I don't always have just me and him time. But here, we do have a kitchen. We do have cars. We do have paints and playdough, so you can try it out here and see how to implement it in the activities that you have at home… [LEaP] just felt like more natural with what you would experience at home.* (Parent 7, Focus group 2)

The consistent routine of unstructured inside and outside play, facilitated child-led play, which parents and facilitators recognised as integral to enhancing child enjoyment, child engagement and parent-child interactions:

> *I just don't think the kids would have coped with that more structured approach and those high level activities, it was really about following their lead, noticing what they are interested in so all we did was provide a range of activity options that the children might show interest in.* (Facilitator, Interview 2)

The range of LEaP activities was also highly valued by both parents and facilitators, for simultaneously accommodating varying interests, expanding play, and integrating opportunities to practise key strategies. The amount and variety of play experiences available during LEaP was contrasted with the more limited experiences provided in typical clinical settings:

> *LEaP gives you ideas; it's given me ideas on things to play with [John]. We went out and brought playdough, puzzles and paint so we can do that at home. We got to see what he actually likes and didn't like, because there are some activities that he completely avoids and he is not interested in at all and others that he goes to every week, I like the structure, the structure is great.* (Parent 2, Focus group 4)

LEaP content and method of delivery. The developmental information and support provided within LEaP emerged as one of the most valued components of the program, motivating parents to attend and engage. In describing the benefits of LEaP, participants referenced both the content and method of delivery as fundamental to its success:

> *It is effective how they structured the content [in LEaP], because it took me a couple of weeks to actually understand that I needed to come down a few levels to my child's level of cognition and understanding all of that. If this had been a one-day workshop, or if this had been structured a bit differently, it wouldn't have given me the space to fully understand that.* (Parent 6, Focus group 2)

The information presented during LEaP, including the key messages and individualised strategies, were perceived as effective and relevant in meeting the needs of parents and improving child outcomes:

> *Just learning how to sit down and copy him, it sounded so simple, but it has helped so much, just to pick up the same toys and sit beside him. [Adam] would previously walk away, and I would feel rejected… So it's been nice to learn how to play with him, and enjoy him and to see him maybe enjoy me.* (Parent 3, Focus group 4)

The focus on play, parent responsiveness, early language facilitation and parent-child attachment were perceived as foundational principles in working with families during LEaP. The multidisciplinary information accompanying the varying playgroup activities met a range of informational needs, expanding children's development in multiple areas:

"I think the importance of play is a really big part…putting play on the pedestal where it should be, 'cause really it is a child's occupation and teaching parents that from day dot on how important play is" (Facilitator 1, Focus group 1). Parents and facilitators did however desire more information on gross motor and fine motor developmental strategies, other CDS services and generic CDS service planning following LEaP.

Participants emphasised the structured and multifaceted method in which information was provided as central in enhancing parent learning and their adoption of strategies. Parents commented that the simplicity of the key messages combined with the layered and sequential learning opportunities, ensured they were understood and implemented, incrementally building their knowledge and allowing them the time to practise and consolidate their skills: "*It was simple. It was very simple English language, not like, you know, a therapist, no therapist writing as such, it was very simple. So, that was actually good"* (Parent 1, Focus group 2). As a result, parents didn't feel overwhelmed by the information and strategies, but were able to identify those strategies that were personally relevant, implementing these within their daily routines: *"It's like building blocks isn't it? Because you kind of built on the stuff that you learned, so you got the foundation of things and then you can build from there"* (Parent 3, Focus group 2).

Receiving information in a range of written and verbal formats during LEaP including whole group discussion, individual discussion, modelling, written cue cards and home activity sheets provided multiple opportunities to learn strategies. Parents specifically discussed the benefits of written information in communicating key messages to other family members: *"The one-on-one things and they write down all that stuff. That's really useful too because I take that home and literally, as soon as my partner gets home, he picks it up and reads it. And then that gives him an idea of what we've covered today and that's what he actually does"* (Parent 2, Focus group 2).

The coaching framework underpinning LEaP facilitation was perceived to be important in supporting child development and parent learning. Facilitators explicitly discussed the importance of using a coaching approach when working with families, stating that the playgroup structure helped to reinforce this approach:

> *I really enjoyed coaching the parents and giving them time to practise and then touch base with them. The playgroup structure allowed for coaching of*

> *the parents, it wasn't like we were the professionals and we told them what we do, it was helping the parents come up with their goals, and developing what they already know.* (Facilitator, Interview 1)

Although parents did not explicitly discuss coaching when describing their experiences, they frequently identified elements of coaching when working with playgroup facilitators, associating it with improving their understanding and ability to implement strategies:

> *[Individual] therapy is focused on the child but the playgroup is, the structure is pushing the parents to be carrying it out for the rest of the week. It's almost like the parents are in training to do the therapy and the session is just sort of like, working out the next step and then we go away and we do our homework which was really good.* (Parent 5, Focus group 3)

7.5 Discussion

This process evaluation demonstrated the effectiveness of the LEaP playgroup in improving children's development, parents' knowledge and skills, parents' social connections and parent-child relationships. Conducted alongside a RCT that established LEaP's statistical and clinical significance in improving secondary outcome measures of child goal achievement and family support, this mixed method study supports the interpretation of the RCT results and is essential in understanding the perceived effectiveness and implementation of LEaP from the perspective of parents and professionals. Consumer involvement in research is widely advocated for, leading to better research outcomes and clinical relevance [32,33]. In evaluating LEaP implementation, the perspective of parents is critical in understanding the consumer experience. LEaP facilitators were central in providing valuable insights into the process of implementing the program and understanding benefits not captured within the RCT measurement framework.

Parents and facilitators both reported LEaP to be highly beneficial to parents' skill development and children's development. This provides support for the RCT statistical and clinically significant results in child goal achievement for the LEaP group compared to the control group [11]. Parents and facilitators suggested child improvements were a direct result of the multimethod information provision and coaching framework that supported parents to implement strategies and enhance children's development.

Underpinning LEaP was the principle of coaching; an approach recognised as a key element in caregiver-implemented interventions and considered best practice in early intervention [34,35]. Coaching was recognised by participants as a principle underpinning the information provided within LEaP. As with other playgroup studies, LEaP was viewed as a safe, non-judgmental, accessible and trustworthy model for information provision, with parents valuing access to trained and knowledgeable playgroup facilitators [36,37]. Interestingly, while parents and facilitators reported substantial improvements in parental knowledge and skills to support child development, parent-child interaction and play, no statistically significant between group differences emerged in the quantitative outcome of parenting self-efficacy (TOPSE) [11]. The TOPSE subscales of Emotion and Affection; Play and Enjoyment; and Learning and Knowledge [23] showed no significant changes despite qualitative feedback indicating parental improvements in all of these areas. Although the study may have been insufficiently powered to detect these changes, it still supports the conclusion arising from the RCT that the TOPSE may not be sensitive in measuring parental changes and suggestion of using an alternative parenting self-efficacy measure to evaluate quantitative change in this area in future studies [11].

Both facilitators and parents emphasised the role of LEaP in increasing parents' social networks and sense of belonging. Playgroups role in building and supporting families' social connections is well established [38-40]. This study suggests the shared experience of parenting a child with developmental delay fostered a connection between parents, with some parents expressing that LEaP was the first time they felt their child was accepted and understood by others. The importance of shared experiences and associated peer support and belonging between parents of children with developmental delay and disability is well established [41] and was a foundational principle of the LEaP protocol [12]. Parents of children with developmental disability and delay experience increased rates of disrupted social and family relationships leaving them more socially isolated and with fewer supports [42]. These parents frequently seek out peer support from families in similar circumstances to increase their skills and knowledge, assist in coping and to provide a sense of belonging [41]. The perception that LEaP increased family support and connections is also reflected in the RCT results which demonstrated a significant between group difference on the Family Support Scale (FSS) [43] for LEaP compared to the control group at 12 weeks [11].

However, the drop in FSS reported at the 28 weeks follow up may be explained by the contextual factor of geographical spread. Playgroups in theory are place-based programs, meaning they are offered within local communities with the aim of connecting children and families with their local community [44]. Within the context of the RCT however, the geographical spread of participants was increased, potentially undermining this component of the playgroup model. It is suggested the geographical spread of families and children created a barrier in maintaining social connections after LEaP ended. Parents also suggested social connectedness was impacted by the duration of LEaP, stating this would have been reinforced with additional LEaP sessions. Previous studies have shown playgroup consistency and regularity is highly valued by families, providing a sense of coherence and certainty [45], whilst consolidating parents' friendships and social connections [38]. It is recommended future iterations of LEaP be localised to geographical sites, with a view to supporting the ongoing social connections and networks between parents and their local community.

The findings served to support and reinforce the theoretical principals of therapeutic playgroups previously [12]. The core principals of family-centred practice [46] are reflected in the findings that facilitators' relational, technical and participatory skills and ability to provided tailored information within a coaching framework were critical to perceived playgroup effectiveness. The reported importance of playgroup structure that was underpinned by natural learning and provided range of play and interested based activities, reinforced the significance of natural learning theory [47]. Peer support [48] is strongly reflected in the participant experience and perceived benefits of feeling accepted, sharing strategies and connecting with other parents with shared identity. Finally, self-efficacy's [49] core principles of mastery, modelling and social persuasion align with the perceived value of shared learning between parents, facilitators working in partnership with parents to develop skills and strategies, and the exposure to and mastery of a range of activities and skills. Paralleling previous playgroup research [12,50], it is suggested self-determination theory [51,52], provides an overarching framework which the need of relatedness, autonomy and competence are enacted by family centred practice and peer support. Corresponding with the core component of relatedness parents described forming meaningful social connections with other LEaP parents, fostering a sense of belonging. LEaP built parents sense of competency, helping them to learn new skills and strategies, supporting their child's development. The opportunity to access relevant information from qualified clinicians and other parents developed parents' sense of autonomy. Given self-determination positively impacts psychological wellbeing and motivation, the finding that LEaP meets central SDT needs for parents of children with developmental delay is important. Table 7.5 (page 248) maps the key findings to playgroup's theoretical framework.

Table 7.5 Key findings mapped to theoretical frameworks of therapeutic playgroups

	Theoretical framework				
	Family-centred practice [46]	**Natural learning theory [47]**	**Peer support theory [48]**	**Self-efficacy theory [49]**	**Self-determination theory [51]**
Finding	Relational practices Technical skills and expertise Participatory practices	Context based Interest based Functional based	Shared social identity Learning from/ supporting others Personal growth	Mastery Modelling Social persuasion Reinterpreting symptoms	Relatedness Autonomy Competence
Mediating factors					
Facilitator characteristics	Relational Technical Participatory				Relational Technical Participatory
Participant experiences			Reducing social isolation Feeling accepted Sharing strategies	Sharing strategies	Reducing social isolation Feeling accepted Sharing strategies
Playgroup structural characteristics		Play-based child-led Range of activities Natural learning		Range of activities	
LEaP content and method of delivery	Content Multifaceted information Coaching			Multifaceted information Coaching	Content Multifaceted information Coaching

	Theoretical framework				
	Family-centred practice [46]	**Natural learning theory [47]**	**Peer support theory [48]**	**Self-efficacy theory [49]**	**Self-determination theory [51]**
Finding	Relational practices Technical skills and expertise Participatory practices	Context based Interest based Functional based	Shared social identity Learning from/ supporting others Personal growth	Mastery Modelling Social persuasion Reinterpreting symptoms	Relatedness Autonomy Competence
Perceived effectiveness					
Child	Child development	Child enjoyment Socialisation	Socialisation	Socialisation	Child enjoyment Socialisation
Parent	Parent-child relationships Learning strategies and skills		Learning strategies and skills Social connections	Learning strategies and skills	Parent-child relationships Learning strategies and skills Social connections
Early intervention service	Transdisciplinary practice				Transdisciplinary practice

At an organisational level, facilitators reported LEaP was an effective model for engaging families with the service, perceiving LEaP attendance to be higher than other parenting programs. At an organisational level, facilitators reported LEaP was an effective model for engaging families with the service, noting that LEaP attendance was higher than other previous parenting programs. Both facilitators and parents attributed attending LEaP with establishing foundational skills, such as parental responsiveness, 'activating' families for other therapies. In the context of the RCT study it was not ethical to withhold standard care until the effectiveness of LEaP was established. The experience of accessing other therapies while also attending LEaP was mixed, with parents reporting key messages were sometimes duplicated. Research suggests accessing multiple therapies can overwhelm some families if not carefully managed, highlighting the importance of cohesive models such as transdisciplinary practice and the key worker roles which provide a central family coordinator who supports and synthesises the multiplicity of strategies and interventions [53,54]. Future research should investigate the appropriateness of LEaP as a standalone 'first contact' service, rather than combining LEaP with other services, investigating outcomes such as parenting stress.

Considering parenting programs for parents of children with developmental challenges have reported attrition rates ranging from 30 to 80 percent [55], LEaP attendance rates and recruitment reach demonstrated it was an acceptable and effective model for engaging families from a range of socioeconomically disadvantaged geographical locations. This was facilitated by the inclusive nature of the playgroup, allowing siblings and other family members to attend, which was also reported in previous research [56]. This confirms playgroups as an effective 'soft entry' model for vulnerable families entering early intervention services [57]. This is significant given 'vulnerable' and 'at risk' families have been described as 'hard to reach' on the basis of their underutilisation of traditional parent education programs and intervention services, instead preferring informal, community-based initiatives [58].

Given effective interventions depend on effective implementation [5], this process evaluation sought to understand the intervention, contextual and causal mechanisms impacting on LEaP outcomes, ensuring further LEaP research can effectively implement this intervention. Effective implementation requires a thorough knowledge of the intervention, its 'active ingredients' and overarching theory to ensure treatment fidelity measures accurately evaluate these components [17]. The systematic development and feasibility testing of LEaP identified its key principles and established fidelity measures assessing the implementation of its 'active ingredients' [12]. Qualitative and quantitative results indicate LEaP was implemented as intended, meeting dosage and fidelity requirements which are reported in the RCT [11]. The investigation of causal mechanisms enables researchers to draw assumptions between qualitative and quantitative outcomes, in an attempt to understand or justify outcomes [17]. Findings indicated key LEaP mediating factors reported by parents included facilitator, participant and playgroups' structural characteristics which reflected the core practice principles of LEaP [12]. This strengthens the argument that LEaP was implemented as intended and RCT outcomes can be attributed to the LEaP playgroup rather than as a result of poor or inconsistent implementation. It did however highlight the importance of skilled and trained clinicians facilitating LEaP, with the ability to adapt to meet the needs of children and families, ensuring fidelity and consequential positive outcomes. The LEaP facilitators had on average, 13 years clinical experience, so future research would need to consider and evaluate the implementation of LEaP with less experienced and skilled facilitators.

While this study captured qualitative data from all LEaP facilitators, four parents did not contribute feedback, two of whom withdrew from the study after one or two sessions. It would have been valuable to understand these parents' reasons for withdrawal and their perceptions of LEaP. Further, although saturation of themes was reached, with data coded by two independent researchers to reduce bias, themes were not sent to participants for member checking impacting trustworthiness. It should also be acknowledged that parent education levels were higher than the national average which may have served as a protective factor for children, with parents having more knowledge of and motivation to engage in services. Moreover, while the average participant family income was slightly less than the national average, few parents reported earning significantly less than the national average income, therefore further research is recommended to evaluate the effectiveness of LEaP for children and families facing substantial economic disadvantage. Finally, whilst implementation was evaluated, the small sample size prohibited researchers from conducting a dose-response analysis and subgroup analysis of family vulnerability and LEaP effect. Such analyses would have strengthened findings and provided valuable information on optimum LEaP dosage, most important LEaP sessions, and appropriateness of LEaP for varied family vulnerability. It is recommended future studies increase the sample size, to sufficiently power these analyses.

7.6 Conclusion

While previous work established the statistical and clinical significance of the LEaP playgroup in improving child goal achievement and family support [11] this study sought to examine its personal significance and evaluate the implementation processes to determine if LEaP is an evidence-based practice [13,15]. This process evaluation served to demonstrate that LEaP was implemented as intended with statistical, clinical and personal effectiveness a result of the intervention rather than other mediating and causal factors. Findings confirm LEaP can be defined as an evidence-based intervention [15] and through maintaining fidelity to protocol and implementation guidelines, we propose LEaP is a beneficial intervention for children with developmental delays and their families. This has significance to allied health clinicians working in the community with children with developmental delays and their families.

7.7 References

1. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: Understanding time lags in translational research. J R Soc Med. 2011; 104(12):510-520.
2. Green LW. Making research relevant: If it is an evidence-based practice, where's the practice-based evidence? Fam Pract. 2008;25(Suppl 1):i20-4.
3. Fixsen D, Blase K, Naoom S, et al. Core Implementation Components. Res Soc Work Pract. 2009;19(5):531-540.
4. Graham I, Logan J, Harrison M, et al. Lost in knowledge translation: Time for a map? J Contin Educ Health Prof. 2006;26(1):13-24.
5. Fixsen D, Blase K, Metz A, et al. Statewide implementation of evidence-based programs. Except Child. 2013;79(2):213-230.
6. Craig P, Dieppe P, Macintyre S, et al. Developing and evaluating complex interventions: The new Medical Research Council guidance. BMJ. 2008;337.
7. Saunders RP, Evans MH, Joshi P. Developing a process-evaluation plan for assessing health promotion program implementation: A how-to guide. Health Promot Pract. 2005;6(2):134-147.
8. Moore G, Audrey S, Barker M, et al. Process evaluation of complex interventions: Medical Research Council guidance. BMJ. 2015;350:1-6.
9. Oakley A, Strange V, Bonell C, et al. Process evaluation in randomised controlled trials of complex interventions. BMJ. 2006;332(7538):413-416.
10. Wright AC, Warren J, Burriel K, et al. Three variations on the Australian supported playgroup model. Int J Soc Wel. 2019;28(3):333-344.
11. Armstrong J, Girdler S, Davidson E, et al. Randomised controlled trial of a therapeutic playgroup for children with developmental delays. JADD, July 4, doi.org/10.1007/s10803-020-045807
12. Armstrong J, Pieterse B, Elliott C, et al. The development and feasibility of a manualised therapeutic playgroup for children with developmental delay. J Child Fam Stud, doi.org/10.1007/s10826-020-01789-z
13. Sackett DL, Straus SE, Richardson WS, et al. Evidence-based medicine: How to practice and teach EBM (2nd Edition). Edinburg, UK: Churchill Livingstone; 2000.
14. Sweeney K. Complexity in primary care: Understanding its value. Oxford, UK: Radcliffe Publishing; 2006.
15. Sweeney K, Macauley D, Gray D. Personal significance: The third dimension. Lancet. 1998;351(9096):134-136.

16. Moore T. Towards a model of evidence -informed decision informed decision and service delivery. Parkville, Victoria: Centre for Community Child Health, Murdoch Children’s Research Institute; 2016.
17. Moore G, Audrey S, Barker M, et al. Process evaluation in complex public health intervention studies: The need for guidance. J Epidemiol Community Health. 2014;68(2):101-102.
18. Mullen EM. Mullen Scales of Early Learning. Circle Pines, MN: American Guidance Service; 1995.
19. Dowding D, Lichtner V, Closs SJ. Using the MRC Framework for Complex Interventions to develop clinical decision support: A case study. Stud Health Technol Inform. 2017;235:544-548.
20. Hoffman KT, Marvin RS, Cooper G, et al. Changing toddlers' and preschoolers' attachment classifications: The Circle of Security intervention. J Consult Clin Psychol. 2006;74(6):1017-1026.
21. Heidlage JK, Cunningham JE, Kaiser AP, et al. The effects of parent-implemented language interventions on child linguistic outcomes: A meta-analysis. Early Child Res Q. 2018.
22. Roberts M, Kaiser A. The effectiveness of parent-implemented language interventions: A meta-analysis. Am J Speech Lang Patholol. 2011;20(3):180-199A.
23. Rush D, Shelden ML. The early childhood coaching handbook. Baltimore, MD: Paul H. Brookes; 2011. (Shelden MLL, editor.).
24. Kendall S, Bloomfield L. Developing and validating a tool to measure parenting self-efficacy. J Adv Nurs. 2005;51(2):174-181.
25. Australian Bureau of Statistics. Technical Paper Socio-Economic Indexes for Areas (SEIFA) 2033.0.55.001. Australian Bureau of Statistics; 2016.
26. Australian Government. Australian Early Development Census National Report 2018. Canberra, Australia: Commonwealth of Australia; 2019.
27. QSR International Pty Ltd. NVivo qualitative data analysis Software. 11 ed. 2012.
28. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: Bryman A, Burgess RG, editors. Analyzing qualitative data; 1994, p173- 194.
29. Strauss AL. Basics of qualitative research: Techniques and procedures for developing grounded theory / Anselm Strauss, Juliet Corbin. 2nd ed. Thousand Oaks: Sage Publications; 1998. (Corbin JM, editor.).
30. Corp I. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.; 2016.
31. Australian Bureau of Statistics. 6302.0 - Average Weekly Earnings, Australia, May 2017. Canberra, Australia: Australian Government; 2017.

32. Australian Bureau of Statistics. 6227.0 - Education and Work, Australia, May 2018. Canberra, Australia: Australian Government; 2018.
33. Boote J, Telford R, Cooper C. Consumer involvement in health research: A review and research agenda. Health Policy. 2002;61(2):213-236.
34. Nilsen ES, Myrhaug HT, Johansen M, et al. Methods of consumer involvement in developing healthcare policy and research, clinical practice guidelines and patient information material. Cochrane Db Syst Rev. 2006;19(3):Cd004563.
35. Rush D, Shelden ML, Hanft BE. Coaching families and colleagues: A process for collaboration in natural settings. Infants Young Child. 2003;16(1):33-47.
36. Friedman M, Woods J, Salisbury C. Caregiver coaching strategies for early intervention providers: Moving toward operational definitions. Infants Young Child. 2012;25(1):62-82.
37. Stratigos T, Fenech M. Supporting parents' informed early childhood education and care choices through playgroups. Aust J Early Child. 2018;43(4):14-21.
38. Jackson D. Creating a place to 'be': Unpacking the facilitation role in three supported playgroups in Australia. Eur Early Child Educ. 2013;21(1):77-93.
39. Hancock K, Cunningham N, Lawrence D, et al. Playgroup participation and social support outcomes for mothers of young children: A longitudinal cohort study. PLoS One. 2015;10(7):e0133007.
40. Strange C, Fisher C, Howat P, et al. Fostering supportive community connections through mothers' groups and playgroups. J Adv Nurs. 2014;70(12):2835-2846.
41. Armstrong J, Paskal K, Elliott C, et al. What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. Scand J Occup Ther*.* 2018:1-22.
42. Law M, King S, Stewart D, et al. The perceived effects of parent-led support groups for parents of children with disabilities. Phys Occup Ther Pediatr. 2001;21(2-3):29-48.
43. Sartore G, Lagioia V, Mildon R. Peer support interventions for parents and carers of children with complex needs (Protocol). Cochrane Db Syst Rev.2013; CD010618(6): 1-18.
44. Dunst C, Jenkins V, Trivette C. Family Support Scale. In: Dunst CJ, Trivette CM, Deal AG, editors. Enabling and empowering families: Principles and guidelines for practice Vol. 153-174. Cambridge, MA: Brookline Books; 1988.
45. Olsson N, Rautio D, Asztalos J, et al. Social skills group training in high-functioning autism: A qualitative responder study. Autism. 2016;20(8):995-1010.
46. Dunst C, Trivette C. Empowerment, effective helpgiving practices and family-centered care. Pediatr Nurs. 1996;22(4):334-7.

47. Dunst, C., Trivette, C., Humphries, T., Raab, M., & Roper, N. (2001). Contrasting approaches to natural learning environment interventions. *Infants and Young Children, 14*(2), 48-63.

48. Shilling, V., Morris, C., Thompson-coon, J., Ukoumunne, O., Rogers, M., & Logan, S. (2013). Peer support for parents of children with chronic disabling conditions: A systematic review of quantitative and qualitative studies. *Developmental Medicine and Child Neurology, 55(7),* 602-609.

49. Bandura A. Self-efficacy: Towards a unifying theory of behavioural change. Psychol Rev. 1977;84(2):191-215.

50. Armstrong J, Elliott C, Davidson E, et al. The power of playgroups: Key components of supported and therapeutic playgroups from the perspective of parents. Aust Occup Ther J [Accepted with minor revisions]. 2020

51. Gagné M, Deci E. Self-Determination Theory and Work Motivation. J Organ Behav. 2005;26:331-362.

52. Ryan R, Deci E. Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. Am Psychol. 2000;55:68-78.

53 Carpenter B. Sustaining the Family: Meeting the needs of families of children with disabilities. Br J Spec Educ. 2000;27(3):135-144.

54. Carter B, Cummings J, Cooper L. An exploration of best practice in multi-agency working and the experiences of families of children with complex health needs. What works well and what needs to be done to improve practice for the future? J Clin Nurs. 2007 Mar;16(3):527-39.

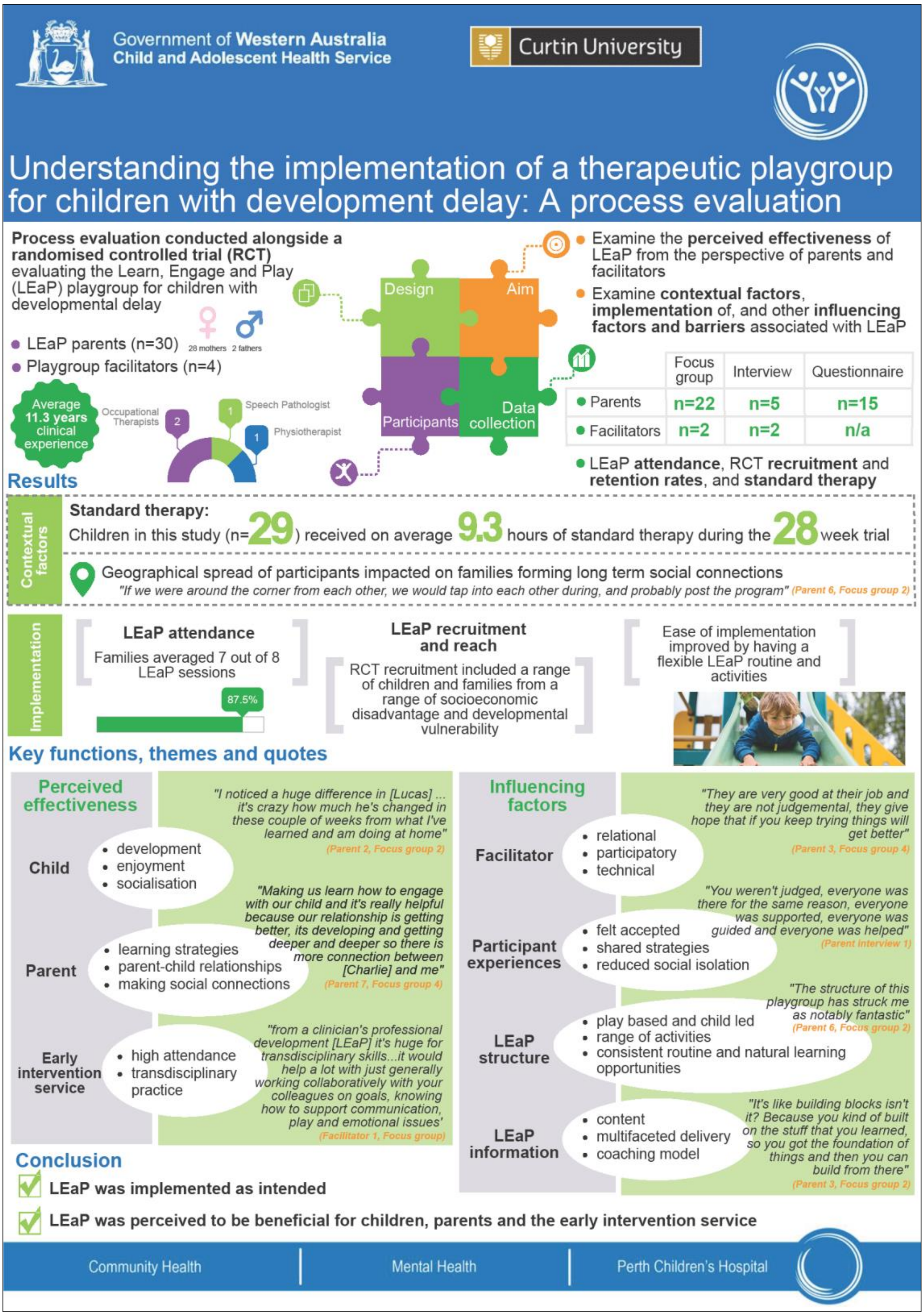
55. Duppong Hurley KL, January S-AA, Lambert MC. Using caregiver strain to predict participation in a peer-support intervention for parents of children with emotional or behavioral needs. J Emot Behav Dis.2017;25(3):170-177.

56. Armstrong J, Elliott C, Davidson E, et al. Defining therapeutic playgroups: Key principles of therapeutic playgroups from the perspective of professionals. J Child Fam Stud. 2019; 1-5, doi: 10.1007/s10826-019-01622-2

57. Williams K, Berthelsen D, Viviani M, et al. Facilitated parent-child groups as family support: A systematic literature review of supported playgroup studies. J Child Fam Stud. 2018;27(8):2367-2383.

58. Evangelou M, Coxon K, Sylva K, et al. Seeking to engage "hard-to-reach" families: Towards a transferable model of intervention. Child Soc. 2013;27(2):127-138.

7.8 Process Evaluation Infographic



Government of Western Australia
Child and Adolescent Health Service

Curtin University

Understanding the implementation of a therapeutic playgroup for children with development delay: A process evaluation

Process evaluation conducted alongside a randomised controlled trial (RCT) evaluating the Learn, Engage and Play (LEaP) playgroup for children with developmental delay

- LEaP parents (n=30) 28 mothers 2 fathers
- Playgroup facilitators (n=4)

Average **11.3 years** clinical experience

Occupational Therapists 2
Speech Pathologist 1
Physiotherapist 1

Design
Aim
Participants
Data collection

- Examine the **perceived effectiveness** of LEaP from the perspective of parents and facilitators
- Examine **contextual factors**, **implementation** of, and other **influencing factors and barriers** associated with LEaP

	Focus group	Interview	Questionnaire
● Parents	n=22	n=5	n=15
● Facilitators	n=2	n=2	n/a

- LEaP **attendance**, RCT **recruitment** and **retention rates**, and **standard therapy**

Results

Contextual factors

Standard therapy:
Children in this study (n=29) received on average 9.3 hours of standard therapy during the 28 week trial

Geographical spread of participants impacted on families forming long term social connections
"If we were around the corner from each other, we would tap into each other during, and probably post the program" (Parent 6, Focus group 2)

Implementation

LEaP attendance
Families averaged 7 out of 8 LEaP sessions
87.5%

LEaP recruitment and reach
RCT recruitment included a range of children and families from a range of socioeconomic disadvantage and developmental vulnerability

Ease of implementation improved by having a flexible LEaP routine and activities

Key functions, themes and quotes

Perceived effectiveness

Child
- development
- enjoyment
- socialisation

"I noticed a huge difference in [Lucas] ... it's crazy how much he's changed in these couple of weeks from what I've learned and am doing at home" (Parent 2, Focus group 2)

Parent
- learning strategies
- parent-child relationships
- making social connections

"Making us learn how to engage with our child and it's really helpful because our relationship is getting better, its developing and getting deeper and deeper so there is more connection between [Charlie] and me" (Parent 7, Focus group 4)

Early intervention service
- high attendance
- transdisciplinary practice

"from a clinician's professional development [LEaP] it's huge for transdisciplinary skills...it would help a lot with just generally working collaboratively with your colleagues on goals, knowing how to support communication, play and emotional issues' (Facilitator 1, Focus group)

Influencing factors

Facilitator
- relational
- participatory
- technical

"They are very good at their job and they are not judgemental, they give hope that if you keep trying things will get better" (Parent 3, Focus group 4)

Participant experiences
- felt accepted
- shared strategies
- reduced social isolation

"You weren't judged, everyone was there for the same reason, everyone was supported, everyone was guided and everyone was helped" (Parent Interview 1)

LEaP structure
- play based and child led
- range of activities
- consistent routine and natural learning opportunities

"The structure of this playgroup has struck me as notably fantastic" (Parent 6, Focus group 2)

LEaP information
- content
- multifaceted delivery
- coaching model

"It's like building blocks isn't it? Because you kind of built on the stuff that you learned, so you got the foundation of things and then you can build from there" (Parent 3, Focus group 2)

Conclusion

✓ **LEaP was implemented as intended**

✓ **LEaP was perceived to be beneficial for children, parents and the early intervention service**

Community Health | Mental Health | Perth Children's Hospital

Chapter 8 Discussion

Foreword

This doctorate used the Knowledge to Action (KTA) framework[8] in combination with the Medical Research Councils' (MRC-DECI) framework[9] for the development and evaluation of complex interventions to tailor the Learn, Engage and Play (LEaP) playgroup to the needs of the Child Development Service (CDS) and its consumers. Chapters 2 to 7 document the systematic development and evaluation of the LEaP playgroup using the rigorous MRC-DECI framework.[9]

This final chapter provides an overview and synthesis of thesis stages and findings, demonstrating how the KTA framework[8] underpinned each thesis stage, ensuring research relevance and applicability to the local context, the CDS. The KTA framework comprises two stages, knowledge creation and action,[8] these are fluid and can occur simultaneously. This chapter discusses how this doctoral thesis aligns with the KTA stages, providing recommendations on how each stage could be expanded in future research. Thesis chapters and corresponding KTA stages are displayed in Figure 8.1. This chapter summaries the new knowledge this thesis contributes to the field of early intervention, outlines the strengths and limitations of this thesis, and discusses the significance of research findings for the CDS and other early intervention service providers.

8.1 Overview

This thesis aimed to systematically develop and evaluate a therapeutic playgroup for children referred to an early intervention service (CDS) with developmental delays. The incorporation of knowledge translation principles throughout the study increases the research relevance and impact.[132] Partnering and collaborating with over 150 key stakeholders during the planning, development, evaluation and implementation design ensured the LEaP playgroup addressed consumer, health service and practitioner needs while mapping a path for implementation directly into the CDS clinical practice and policy.

This thesis used the KTA framework[8] in combination with the MRC-DECI's framework[9] for the development and evaluation of complex interventions. This combination enabled research to systematically define, implement and evaluate the complex intervention of playgroups whilst ensuring the creation of playgroup knowledge and the developed LEaP playgroup was tailored to meet the needs of knowledge end-users; CDS and children with developmental delay, thus enhancing research translation.

Thesis chapters and corresponding papers detailed the sequential development and evaluation of a therapeutic playgroup, structured according to the MRC-DECI framework.[9] The overarching KTA framework[8] ensured study phases were tailored to the context of the CDS and its' consumers. Papers I, II and III synthesised playgroup knowledge to identify key principles or 'active ingredients' of therapeutic playgroups. This involved conducting a scoping review of playgroup research and gathering the perspectives of caregivers (n=23) and professionals (n=40) with experience attending or facilitating a playgroup for children with developmental delay and/or disability. In Paper IV, findings were triangulated to identify the overarching theoretical frameworks of playgroups. The LEaP therapeutic playgroup was then developed in collaboration with a working group of CDS professionals and caregivers (n=12) to target the needs of the CDS and resulted in the creation of knowledge tools and products in the form of the LEaP manual and training guidelines. Paper IV also outlined LEaP feasibility testing using a pre-test post-test design (n=8). It evaluated preliminary effectiveness and fidelity to the LEaP protocol in preparation for more rigorous evaluation. Paper V then documented the empirical efficacy testing of LEaP, using a single-blind two-armed randomised control trial (RCT) (n=71). LEaP combined with standard care was compared to standard care only, within the CDS context. The process evaluation summarised in Paper VI was conducted in conjunction with the RCT and examined the perceived effectiveness from the perspectives of participants and facilitators and evaluated implementation and causal factors of LEaP success.

In this final chapter, thesis findings are synthesised against the KTA framework[8] of knowledge creation and action, with results and future research and implementation recommendations discussed. Thesis chapters, corresponding KTA stages and key findings are displayed in Figure 8.1.

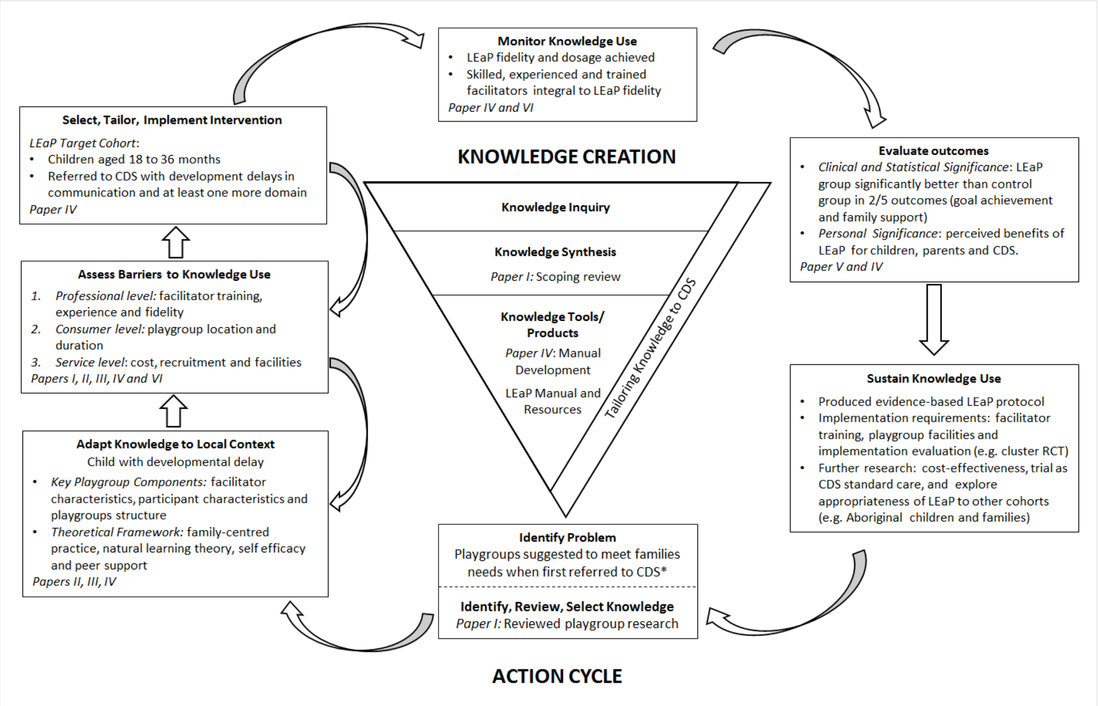


Figure 8.1 **Thesis chapters, papers and findings mapped to Knowledge to Action Framework[8]**

8.1.1 Knowledge Creation

The thesis created new knowledge by synthesising playgroup knowledge and developing playgroup knowledge tools and products in the form of the LEaP manual and resources.

Knowledge synthesis

The scoping review (Paper I) synthesised literature on supported and therapeutic playgroups with the aim of identifying core principles of playgroups that enhance parent and child outcomes and engagement. This review focused on supported and therapeutic playgroup models that targeted children at risk of or with identified developmental delays or disabilities. Findings confirmed playgroups were a complex intervention influenced by parent, facilitator and structural components and underpinned by family-centred practice,[133] peer support theory,[134] and self-efficacy theory.[135] This review reinforced the lack of robust playgroup research and highlighted the need for greater clarity on playgroup definitions and practice principles to facilitate empirical research. It also consolidated previous literature, revealing playgroups are an effective 'soft entry' point for vulnerable families accessing early intervention services.[52] Supported and therapeutic playgroups were demonstrated to be beneficial for a range of vulnerable families based on socioeconomic disadvantage, geographical isolation, parental mental health issues and/or drug and alcohol abuse, cultural and linguistic diversity, refugee status or Aboriginal and Torres Strait Islander heritage.

While this stage was limited by the availability of robust playgroup studies, wide variability in playgroup models and target cohorts, and a lack of intervention fidelity measures, it formed the first paper to articulate key principles of therapeutic and supported playgroups. In a research context hindered by inconsistent playgroup definitions and practice principles,[4,93,106] these findings were significant in laying the foundation for further studies to continue building the practice model of playgroups, enabling the systematic development, implementation and evaluation of therapeutic playgroups.

This stage formed the foundation for LEaP development. It consolidated key components of playgroups from the literature that could be built upon and adapted to the specific needs of the CDS, children and families in the action cycle.

Knowledge tools/ products

This doctorate developed new knowledge tools and products for end-user implementation in the form of a LEaP playgroup manual and associated resources, a fidelity checklist and a training package. The creation of knowledge tools facilitates knowledge uptake, making it easier for end-users to implement recommendations.[8,115]

An excerpt of the LEaP manual and associated resources are attached in Appendix C. Publishing the manual is beyond of the scope of this doctorate, but funding has been secured from the Western Australian Health Translation Network (WAHTN) and Curtin University to ensure this is completed by 2020. This will make it the first published evidence-based therapeutic playgroup manual developed in collaboration with consumers for children with development delays. The manual will be published, and training will be offered to interested parties, making implementation easier and more efficient, and to safeguard fidelity to research translation. Research findings have already been presented at six national and four international conferences, with an anticipated six papers to be published in peer reviewed journals. This has already resulted in both national and international interest in the LEaP manual and training package. Researchers plan to offer national and potentially international training for early intervention services and government departments interested in implementing the LEaP playgroup starting in 2020.

8.1.2 Action Cycle

This thesis showcased a consumer driven and collaborative research project that partnered with consumers and key stakeholders in each stage of the action cycle. The importance of consumer involvement in health research and service development is emphasised both nationally and internationally,[136] improving health research methodology by ensuring the clinical relevance of research, the research outcomes and the research implementation and translation.[108,109,137] The phases of the KTA action cycles[8] were conducted simultaneously with knowledge creation, developing and tailoring knowledge to the needs of the CDS, children with developmental delay and their parents/caregiver. These are discussed in conjunction with recommendations on how to improve each stage in future research and implementation.

Phase 1: Identify Problem

Overview

This thesis was initiated in response to a CDS quality assurance project that identified families wanted more responsive services when first referred, with CDS consumers and staff suggesting playgroups as a potential alternative to the service or as a solution to this issue.[75,76]

Recommendations for future research

The problem of waiting lists in the context of early intervention services is pertinent to many other Australian and international early intervention services,[70-72] and therefore it is suspected that study findings are applicable to a wide range of services. However, to ensure knowledge is tailored to each early intervention service's specific needs, it is recommended future research start with a preliminary needs assessment as was done prior to this study. This would include consulting with consumers and early intervention service stakeholders to ensure the perceived research problem and potential response are relevant to their needs.

Phase 2: Adapt Knowledge to the Local Context

Overview

This doctorate was designed to ensure each research stage was adapted to the needs of the CDS. The collaborative research team comprising university academics and senior CDS management including the CDS Director, Senior Policy and Portfolio Officer and Senior Clinical Advisor, strengthened research relevance and adaptation to the CDS context. Research stages also underwent consultation with CDS clinical and managerial advisory groups to ensure research complied with CDS governance. This stakeholder partnership and engagement further enhanced research relevance to the CDS.

Papers II, III and IV formed key components of this stage, building on previous scoping review (Paper I) findings to systematically develop a therapeutic playgroup for children with developmental delay. Considering the complex nature of playgroups, the MRC-DECI[9] provided a comprehensive framework to adapt knowledge to CDS, gathering the perspective of professionals (Paper II) and consumers (Paper III) to identify and define core playgroup principles for children with developmental delay and/or disability. Paper II provided the first definition of therapeutic playgroups as follows; 'therapeutic playgroups provided parents with access to multidisciplinary support and the expertise of qualified facilitators who worked in partnership with parents, providing them with therapeutic information and support relating to child developmental concerns and priorities. Therapeutic playgroups were underpinned by routines and consistent structure, emphasising parent-child relationships whilst facilitating parent peer relationships and supporting parents to learn new skills to support their child’s development through play’(p10).[138]

Paper IV then triangulated findings from Papers I, II and III to identify the overarching theoretical principles of therapeutic playgroups for children with developmental delay. The results reinforced scoping review findings (knowledge synthesis) revealing therapeutic playgroups are influenced by facilitator, participant and structural characteristics and underpinned by family-centred practice,[133] natural learning theory,[139] self- efficacy theory,[140] and peer support.[134] It was also suggested in Paper III and VI that key components of therapeutic playgroups align with self-determination theory’s basic psychological needs of relatedness, autonomy and competence,[141,142] highlighting the imortance of parental motivation and empowerment. Whilst the definition of therapeutic playgroups provided by Paper II alludes to some core theoretical underpinnings, chiefly family-centred practice and peer support, it is recommended the definition be extended to articulate the theoretical foundations of family-centred practice,[133] natural learning theory,[139] self-efficacy theory,[140] and self-determination theory[141] inclusive of peer support.[134]

Facilitator characteristics

Playgroup facilitators and their adoption of family-centred practice[133] was inherent to successful and engaging therapeutic playgroups and was a distinguishing feature between supported and therapeutic playgroup models. Across thesis papers the importance of having skilled facilitators that worked in partnership with, and had positive relationships with families was fundamental to playgroup fidelity and success. This ensured families felt accepted and comfortable, got relevant support and information to address their concerns, and learnt new skills and strategies to support their child’s development. This aligns with best practice principles of early intervention service delivery and working with children and families[143,144] and also corresponds with parents self-determination theory’s needs of autonomy, competence and relatedness.[141,142] Although the supported playgroup model also required that facilitators have relationship and participatory practices,[1] the presence of skilled facilitators that provide therapeutic strategies and support to enhance child development was a distinguishing feature of therapeutic playgroups, as outlined in Paper II. In this thesis, clinicians selected to facilitate LEaP playgroups in the feasibility study (Paper IV) and RCT study (Paper V) required a minimum of five years' clinical experience working with children with developmental delays and/or disabilities. On average, facilitators in the RCT study (Paper V) had 12.8 years of clinical experience.

Participant characteristics

The facilitation of parent networking and support emerged as a central component of playgroups and distinguished this from other early intervention models, supporting broader playgroup literature.[86,91] Therapeutic and supported playgroups facilitated key components of peer support, targeting families with shared experiences, fostering the reciprocal exchange of experience and advice, empowering and validating parenting expertise.[134] Across papers, parents and professionals emphasised the importance of playgroups in enabling parents to meet and connect with other parents who have the shared experience of parenting a child at risk of a developmental disability. The benefits were twofold; it increased the parents' sense of belonging and provided valuable opportunities for parents to share and learn strategies from each other to support their child's development. This reflects self-determination theory's psychological needs of relatedness and competence[141,142] serving to empower parents.

The high level of stress, social isolation and social exclusion faced by parents of children with developmental delay and/or disability are well documented,[145,146] along with the importance of these parents building social connections with other parents to buffer stress and improve parent functioning.[134,146-148] The increased motivation of parents to engage in local communities and build social capital,[80,83] means playgroups have particular utility in countering the social isolation commonly reported among parents of children with disabilities,[149] improving social connections, reducing parenting stress, and increasing parenting capacity and functioning.[146,149] However, a key finding emerging from this thesis (Paper VI) was the geographical location of families impacted on parents' ability to maintain social support and connections made within LEaP playgroups. This emphasises the need for playgroups to be offered in parent's local community to increase accessibility and ability to sustain these social connections, consolidating the importance of playgroups being a place-based intervention. Although peer support may happen incidentally in other therapeutic group models, it is often not a key focus and parents attending individual therapy sessions with their child may miss out on this completely. The need to actively facilitate parental peer support and social support whilst addressing the developmental concerns of children is advocated for[146] and this thesis demonstrated the playgroup model is unique and valuable within the early intervention sector given its ability to facilitate both.

Playgroup structure

The consistent structure used across community, supported and therapeutic playgroup models was inherent to perceived effectiveness and distinguished playgroups from other therapeutic group models. Thesis findings revealed the consistent range of indoor and outdoor unstructured play, song/book time and snack time that ran for two hours once a week, facilitated natural learning opportunities and child-led play, parent and child socialisation, child developmental opportunities and parent coaching. This range and variety of activities was also perceived as valuable by playgroup facilitators, because it provided more opportunities to observe children's interaction, play and development to better understand their needs and to refer to appropriate services as required.

Playgroups were also perceived to create a safe and accessible environment for parents to learn and connect with other families and services and provide opportunities to enhance child development and play. These findings reflect broader playgroup literature.[91,150] Routine consistency provided a range of benefits to children, parents and the service that was not perceived to be possible within the confines of regular therapeutic services and groups. Compared to traditional therapy group sessions the findings also demonstrated the informal and flexible two-hour playgroup session facilitated child-led play, natural learning opportunities and lent itself more effectively to a coaching model, all of which are recognised as best practice principles of early intervention.[92,151] Natural learning theory emphasises the importance of using everyday contextualised, functional and interest-based activities as learning opportunities and is associated with improved outcomes.[139,152] Playgroups emerged as a service model that effectively facilitated this within sessions, making it unique to many other group models. Other services may benefit from investigating therapeutic playgroups as a model to meet the developmental needs of children whilst facilitating parental support networks within a structured framework that inherently supports child-led play, natural learning opportunities, family-centred practice, transdisciplinary practice and parent coaching.

Recommendations for future research

This thesis addresses a substantial evidence gap by providing a clear definition and practice principles of therapeutic playgroups. In a research environment impeded by inconsistent playgroup definitions and practice principles, this study is the first to provide a definition and identify practice principles of therapeutic playgroups for children with developmental delays. This was essential in enabling researchers to develop and rigorously evaluate the LEaP playgroup. However, this stage also lays the foundation for future therapeutic playgroup studies to build on and continue enhancing the research profile of playgroups, enabling it to become more widely evaluated and utilised.

Given the inconsistencies within the varying playgroup models and definitions, researchers sought to determine the distinguishing factors between supported and therapeutic playgroup models but acknowledge other research that emerged since this doctorate started may not adhere to or agree with such definitions. In examining the similarities in practices across three supported playgroups, one recent study concluded that the supported playgroup conceptual framework comprised parent-child relationships, peer support and learning, building community networks and connecting families to services.[91] Whilst this thesis focused on defining therapeutic playgroups rather than supported playgroups, there are similarities across models, particularly the emphasis on peer support. Community connections and parent-child relationships are also included in the therapeutic playgroup framework but are discussed within the context of the playgroup structural components. Future research is recommended to continue evaluating the proposed practice principles of therapeutic playgroups to examine if these remain consistent in other clinical cohorts. For this reason, future therapeutic playgroups research is recommended to select outcome measures that reflect the proposed theoretical constructs of playgroups such as parental self-efficacy, family and parental social support, and parental motivation and wellbeing.

Further research is also required to continue to clearly articulate the practice principles of community and supported playgroup models to determine if they reflect those outlined in this study. Given the complex nature of playgroups, the adoption of the MRC-DECI framework[9] was effective in systematically developing and evaluating this intervention model and it is recommended that other researchers adopt this approach when defining other playgroup models.

Finally, this study was conducted in the Perth metropolitan area and therefore whilst findings might be relevant to children with developmental delay and their families in rural and remote and other urban areas across Australia it cannot be assumed. It is recommended future studies examine the applicability of therapeutic playgroups to other early intervention service environments across urban, regional and remote contexts.

Phase 3: Assess Barriers to Knowledge Use

Overview

Identifying potential barriers to knowledge use is a key component of knowledge implementation.[8] Qualitative data gathered in the feasibility study (Paper IV) and process evaluation (Paper VI) informed the professional, consumer and service barriers for LEaP playgroup implementation. The collaborative research team in conjunction with CDS governance requirements throughout the project facilitated the identification of service barriers, especially clinical and operational governance, staffing requirements and costing.

Thesis findings identified the presence of professional, consumer, and service/resource barriers to LEaP implementation. Professional barriers included facilitator training, experience and fidelity requirements. Qualitative data from parents and professionals in both the feasibility study (Paper IV) and process evaluation (Paper VI) revealed that successful LEaP implementation required highly trained and experienced facilitators. This potential barrier highlights the importance of facilitator selection, training and supervision. The scoping review (Paper I) and process evaluation (Paper VI) findings revealed that playgroup location and duration was a potential barrier for consumers' engagement, impacting accessibility, durability and lasting community connections. Families participating in the RCT (Paper V) were recruited from a larger geographical area to account for randomisation with some families stating this negatively impacted the ease of attending playgroup sessions and maintaining connections with other parents. The feasibility study (Paper IV) and process evaluation (Paper VI) revealed that social support, sense of belonging and community connectedness were negatively impacted when LEaP finished or was offered to families from widely dispersed geographical areas. This emphasises the need for therapeutic playgroups to be offered in families' local community, be ongoing or actively facilitate families' transition to locally available supported or community playgroups, and to support community connections once a therapeutic playgroup ends.

Service barriers to LEaP implementation were identified as playgroup cost, participant recruitment, and the availability of physical spaces to run playgroup sessions. Health services are under increasing pressure to ensure they are providing effective services and utilising limited resources in the most efficient manner.[153-155] Consequently, the cost of LEaP compared to other standard services is an important consideration and potential implementation barrier. The health economic evaluation of LEaP was beyond the scope of this thesis and conducted separately,[19] but the feasibility study (Paper IV) reported the estimated cost of LEaP was comparable to other CDS groups.

Recruitment rates were also a core consideration for LEaP implementation, impacting LEaP logistics such as playgroup location. Playgroup locations were situated closest to the largest referral sites however, given LEaP could only accommodate a maximum of eight families, RCT recruitment from one site ceased due to LEaP reaching capacity. Recruitment numbers need to be monitored, ensuring there are enough LEaP playgroups to accommodate referred families. Finally, to physically accommodate LEaP, a large group room with indoor and outdoor facilities and kitchen was required. These facilities were unavailable within CDS sites prompting researchers to partner with community services to use their group space. The requirement of such group rooms could serve as a potential service barrier to widespread LEaP implementation.

Recommendations for future research

Successful implementation of LEaP was influenced by facilitator experience, training and fidelity; therefore, publishing the LEaP manual and training package is recommended. This would support the wider adoption of LEaP across therapeutic services. Learning from this study, the LEaP playgroup could be improved by reducing the geographical spread of participants and enhancing the place-based approach by holding playgroups in families' local community. Within a funding context of economic rationalism[156] it is recommended that further economic analysis be conducted if sessions increase over eight weeks. However, greater emphasis must be placed on linking families with local community or supported playgroups to continue ongoing social connections. It is recommended these changes be made and LEaP be re-evaluated to monitor long term social outcomes.

Further cost evaluation is recommended to rigorously evaluate the cost of LEaP compared to other CDS therapy groups and services. It is suggested future research conduct a cost-effectiveness and cost-benefit analysis of LEaP compared to standard care, and cost-analysis relative to LEaP dosage. These health economic evaluations provide valuable information to service providers on clinical effectiveness relative to resources use,[157] enabling the most efficient use of resources to maximise beneficial outcomes for children and families.

Other studies revealed common consumer implementation barriers include lack of awareness of intervention,[158,159] cost, and willingness and desire to participate.[159] Common professional barriers encompass consistent guideline implementation and fidelity, professional experience of interdisciplinary and/or transdisciplinary working,[160] time pressure, capacity and competing demands.[161-164] Finally, common service implementation barriers include appropriate patient selection,[163] lack of administrative support and inadequate intervention manual instructions.[165] Future playgroup research should monitor these frequently reported barriers using a range of qualitative (focus group, interview or survey) and quantitative (fidelity checklist)[16] methods. Considering this study focused on parents already engaging with services, research should also focus on identifying and recruiting parents of children that are not actively seeking support for their children's developmental delays.

Phase 4: Select, Tailor, and Implement Interventions

Overview

The LEaP playgroup was developed to meet the specific service demands of the CDS. The manual development and feasibility study (Paper IV) documents the comprehensive development of LEaP inclusive of a referral needs assessment to identify the target cohort and the use of a CDS consumer and professional working group (n=12) to develop LEaP content. For this reason, it targeted the highest referral cohort, children aged 18 months to 36 months demonstrating delays in communication and at least one more domain on the Ages and Stages Questionnaire (ASQ-3),[166] resulting in the development of the LEaP manual and training package. The finalised manual also required CDS clinical governance committee approval to ensure it was appropriate and feasible within the CDS prior to implementation and evaluation (Paper IV).

Another key component to this stage is the dissemination of knowledge[8] to increase potential uptake and implementation. Throughout this doctorate, knowledge dissemination strategies included: i) presenting findings at four international and six national scientific conferences; ii) regularly presenting study findings to CDS managers, advisory groups and professionals throughout the four year project; and iii) developing research lay summaries in the form of infographics that were provided to consumers, policy makers, professionals and research participants.

Recommendations for future research

The LEaP playgroup was developed for children with developmental delay and their parents, and while this increased the relevance to the CDS, it cannot be assumed the content is relevant to the service demands of other early intervention agencies. Although the key LEaP messages of parental responsiveness[167,168] and parent-child attachment[169] are universally appropriate to all families, the focus on early language facilitation[170,171] is catered more specifically to children with communication difficulties. Considering communication delays are the highest reported reason for referrals to early intervention services;[172] are closely associated with social, behavioural, cognitive and motor skills;[173] and experienced more frequently by children from socioeconomically disadvantaged families;[174] LEaP may be considered appropriate for other services.

Developmental delays can be indicative of undiagnosed developmental disabilities or neurodevelopmental disorders with some suggesting the term ‘early developmental impairment’ is more appropriate than developmental delay.[175] Theoretically, the children from the therapeutic playgroup cohort chosen to participate in the research addressed in this thesis may have met the criteria for global developmental delay as per the DSM-V manual.[176] However, the children were not assessed by a physician before assignment to treatment. The developmental profile of children who participated in the feasibility study (Paper IV) and RCT (Paper V) indicated they were significantly delayed, scoring a mean of 65.1 (SD 13.1) on the Early Learning Composite of the Mullen’s Scale of Early Learning (equating to percentile score of 1). As the Early Learning Composite score is considered the equivalent to a cognitive or intelligence quotient score[177] this demonstrated the significant delays with which children were presenting. Additionally, given early language delay in the presence of broader cognitive and motor delays is an early predictor of autism spectrum disorder[178] it may be assumed children recruited in this study had a higher risk of this disability diagnoses. Children in this study were targeted early in their therapeutic journey, with a diagnosis typically undertaken 13 months from referral.[17=9] This study did not follow children up to establish the proportion who received a disability diagnosis, but this is recommended in future research. Given the developmental complexity and higher probability of a disability diagnosis of LEaP participants, it is suggested future research could evaluate the application of LEaP to children with an established disability diagnosis, such as children with global developmental delay or autism spectrum disorder and their transition to other services.

Phase 5: Monitor Knowledge Use

Overview

The feasibility study (Paper IV) and process evaluation (Paper VI) monitored LEaP implementation and fidelity. The feasibility study employed the National Institute of Health's (NIH) Behavioural Change Consortium's treatment fidelity framework to assess fidelity, comprising: i) treatment design; ii) facilitator training; iii) treatment delivery; iv) treatment receipt; and v) enactment of treatment skills.[180] This stage was critical in ensuring that LEaP was implemented as intended prior to moving onto the larger RCT. The process evaluation (Paper VI) conducted in conjunction with the RCT monitored LEaP implementation in relation to facilitator fidelity adherence, LEaP dosage and attendance, and perceived usability from the perspectives of parents and facilitators. Findings from both studies demonstrated LEaP was implemented as intended but highlighted the presence of skilled, experienced and trained LEaP facilitators was integral to maintaining LEaP fidelity.

Recommendations for future research

Effective interventions require effective implementation[15] and therefore the ongoing monitoring of LEaP implementation and fidelity is an essential component of future research. In the future adapting of LEaP or developing new therapeutic playgroups it is recommended researchers adopt the fidelity framework used in the feasibility study (Paper IV).[180] The use of a mixed method approach further strengthens fidelity studies, with qualitative data from participants and facilitators central to examining intervention usability and implementation. It is also recommended that future research conduct process evaluations alongside RCTs to examine intervention implementation quality and fidelity whilst also identifying potential contextual or causal factors that influence intervention outcomes.[9]

Phase 6: Evaluate Outcomes

Overview

The feasibility (Paper IV), RCT (Paper V) and process evaluation (Paper VI) evaluated LEaP outcomes. These studies contributed to the evidence base for therapeutic playgroups for children with developmental delay, establishing the areas in which LEaP was found to be effective and reinforcing the suitability of therapeutic playgroups for vulnerable children and families.

LEaP effectiveness

The LEaP playgroup was perceived to be effective by parents and facilitators and uniquely supported child development and parent's capacity, sense of autonomy, and socialisation. The feasibility study (Paper IV) and RCT (Paper V) demonstrated LEaP effectiveness on child and family outcomes and the incorporation of the process evaluation (Paper VI) confirmed LEaP was implemented as intended, ensuring RCT results were valid.

In evaluating the evidence of any intervention, one must first choose the definition of evidence-based practice and the method to rate quality and certainty of the evidence before drawing conclusions. Adopting Sackett and colleagues'[181] definition of evidence-based practice, interventions are evaluated on personal, clinical and statistical significance.[182-184] The RCT demonstrated clinically and statistically significant results for LEaP in some domains and the process evaluation demonstrated personal significance of LEaP. Consequently, if this definition is applied it can be concluded LEaP is an evidence-based intervention in the domains of child goal achievement and family support. Additionally, the most recent global survey of early childhood intervention programs, defined effective early childhood intervention services to include the following factors: individualised, family-centred; intensive, team-based; interdisciplinary or transdisciplinary; evidence informed; outcome driven; and located within the natural environment of the child and family.[185] If this framework is applied, it is proposed that LEaP meets this criterion given it is provided within a naturalistic environment, held in local community centres, focuses on individual family and child goals, and is facilitated by experienced allied health professionals working within a transdisciplinary framework for at least an intensive eight-week period. However, this requires further replication independent of the developer.

Adopting the Oxford levels of evidence[186] this thesis has contributed a Level II RCT and a Level IV feasibility study to the evidence for therapeutic playgroup effectiveness for children with developmental delays and their families. In examining the quality of evidence and strength of recommendation the GRADE[187] system can be applied. Using this five-scale scoring framework the RCT study is assessed on risk of bias; inconsistency; indirectness; imprecision; and publication bias. If the GRADE was to be applied to the RCT it would be rated down on risk of bias, due to performance bias as participants and LEaP facilitators were not blind to allocations. This is a common methodological limitation in intervention research.[188] The study would also be rated down in imprecision due to small participant numbers and not meeting the power calculation sample size. Although moderate effects were found for between group change on secondary outcomes of goal achievement (function: -0.7 to -0.6; performance: -0.6 to -0.5) and family social support (0.44), no between group effect was found on the primary outcome of parenting stress. However, data were analysed using intention to treat, and on average, parents reached the minimum six session LEaP dosage as per protocol, thus upgrading study ratings. Consequently, LEaP has a moderate certainty of evidence and, for children with developmental delay, LEaP is likely to increase children's goal achievement and family social support.

The Evidence Alert Traffic Light System[189] is a knowledge translation tool that complements the GRADE system, providing a clinically useful explanation and recommendations for intervention use.[190] Defining interventions as green, yellow and red; green indicates the presence of high quality effectiveness evidence and consequently the intervention is recommended to be used; yellow specifies conflicting or low-level evidence for intervention effectiveness, recommending the intervention continue to be used but requires ongoing measurement and evaluation; and red indicates the intervention has high level evidence demonstrating its ineffectiveness or harmful effects, with the recommendation this be stopped in clinical practice.[191] In summarising the evidence for therapeutic playgroups for children with developmental delay presented in this thesis, it is suggested that the LEaP playgroup, be classified 'yellow' with the recommendation it be implemented within the clinical setting but requires ongoing evaluation and monitoring.

Vulnerable families

Papers II, III, IV and VI confirmed previous research that therapeutic playgroups are an effective service option for vulnerable families.[52] To effectively engage vulnerable and 'hard to reach' families, services are recommended to provide community-based and contextualised services; that are located in familiar and accessible community settings; provide services in casual, informal, flexible and non-stigmatising formats; foster social interaction between families; build connections with communities; and have relational and welcoming facilitators.[192-196] Accordingly, it's not surprising the community-based and widely available playgroup model was found to be an appropriate model for these families. They are generally perceived to be less daunting and more accessible than traditional therapeutic services.[90,91] The professional (Paper II) and caregiver papers (Paper III) confirmed these assumptions, concluding supported and therapeutic playgroups are inclusive, accessible, safe and non-judgemental environments where families develop social and community connections, and access timely developmental intervention and/or referrals to early intervention services. The qualitative data from the feasibility study (Paper IV) and process evaluation (Paper VI) further consolidated this, reporting the flexible playgroup model was perceived as a 'safe' and welcoming environment, less daunting and more natural than traditional clinical settings.

Recruitment and retention data from the feasibility study (Paper VI), RCT (Paper V) and the process evaluation (Paper VI) further reinforced this, demonstrating LEaP was an acceptable and engaging intervention for families from CALD backgrounds and those with socioeconomic vulnerability. Seventy-five percent of families in the feasibility study and almost 40 percent of families in the RCT identified as CALD. Further, the process evaluation demonstrated the varied socioeconomic vulnerability associated with the geographical locations where participants were recruited. Despite the range of CALD and socioeconomic vulnerability, LEaP attendance was high with limited dropouts (n=2). Although, the scoping review (Paper I) indicated playgroups are beneficial to Aboriginal families no families in either the feasibility or RCT study identified as Aboriginal or Torres Strait Islander. Therefore, no assumptions can be made regarding the appropriateness of LEaP and playgroups for Aboriginal or Torres Strait Islander families from the doctorate findings.

Recommendations for future research

This doctorate highlighted the numerous challenges of developing, implementing and evaluating complex interventions, such as therapeutic playgroups. It did however, clearly articulate an evidence-based definition and practice principles for therapeutic playgroups and establish the effectiveness of a therapeutic playgroup for children with developmental delay. The findings from the feasibility study (Paper IV), RCT (Paper V) and process evaluation (Paper VI) revealed the challenges associated with choosing sensitive and appropriate outcome measures for playgroups. Given the variety of potential child, parent and community/service outcomes there is a need to identify valid and reliable measures and to increase evaluation consistently across playgroup research to ensure findings can be compared, and the evidence base for playgroups can be extended and strengthened.[197] This study confirmed the appropriateness of adopting goal-based measures to detect changes in child outcomes in a novel intervention[190] and recommends the ongoing use of these in playgroup research whilst researchers continue to evaluate the appropriateness of parent outcomes.

This thesis also showcased the value of a using a mixed method approach to evaluate the effectiveness of LEaP. Qualitative data gathered during the process evaluation study enabled researchers to better interpret quantitative findings whilst ensuring the LEaP playgroup was implemented as designed to ensure valid RCT results. Process evaluations are increasingly recognised as integral to evaluating intervention implementation and identifying intended and unexpected mediating factors.[198] This study reiterated the importance of this process and future studies, specifically those evaluating playgroups or other complex interventions should adopt a process evaluation within their methodology to better understand RCT results and to avoid type II errors.

Thesis findings reiterated the effectiveness and suitability of playgroups for families from CALD backgrounds and socioeconomic vulnerability, which has implications for further research. However, it must be noted that families who needed interpreters were not included in the study, so assumptions cannot be made for the appropriateness of LEaP for these families. Nevertheless, considering 23 percent of the Western Australian population[199] were born overseas and approximately 17 percent of Australians have English as their second language[200] evaluating therapeutic models that appear to be relevant and effective for a diverse population, particularly CALD children and families is important. Additionally, children from CALD families, socioeconomic disadvantaged families or other minority families are more likely to have developmental delays that are undetected and experience difficulties accessing early intervention services.[53,59,67] Consequently, there is increased need to coordinate early intervention services and improve referral pathways and responsive services to prevent these children and families from missing out or going unseen.[52] The finding that playgroups were suitable and engaging for these families is therefore promising and it is recommended playgroups continue to be offered as a ‘soft entry’ point for these children and families.[52,68] Research is also recommended to explore and evaluate the effectiveness of LEaP and other therapeutic playgroup models for other family vulnerabilities, such as parents with mental health issues, single parents and teenage mothers.

The dual focus on improving child outcomes and facilitating parent capacity building, social connections and supports makes playgroups unique in the early intervention service environment. Despite the overwhelming evidence showing parents of children with developmental delay and disability experience more social isolation than other parents[145,146] and report an increased desire to connect with parents who understand and relate to their experience,[201] this is not always addressed by early intervention services. Increasing the awareness of family social needs and actively addressing these factors alongside other early intervention goals is recommended.

While the LEaP playgroup served as a promising method to achieve such outcomes additional research is required to further evaluate LEaP effectiveness. The RCT was limited by a small sample size and it is recommended future LEaP efficacy studies have larger samples sizes to be sufficiently powered to conduct further cost-evaluation, including cost-effectiveness and cost-benefit analysis; and compare LEaP to standard care, instead of LEaP plus standard care to standard care alone. Given the current LEaP dosage was based on research conducted on a supported playgroup model,[202] a dose-response analysis for LEaP is also recommended to assess the required LEaP dosage for effect. This was not possible in this study due to the small sample size. If implemented, LEaP scaling should also be monitored to determine the effectiveness of providing LEaP within place-based local geographical areas in improving and sustaining families' social support and connections. Finally, this thesis presented the first RCT to evaluate LEaP effectiveness and further research is required to replicate research findings, independent of the developer to establish the effectiveness of LEaP for children with developmental delay and their families.

Phase 7: Sustain Knowledge Use

This thesis has systematically explored and defined key therapeutic playgroup components and demonstrated the clinical, statistical and personal significance of the LEaP playgroup for children with developmental delay. Despite study limitations this thesis provided an evidence-based playgroup protocol and evaluated this using a feasibility study (Paper IV) and RCT (Paper V) with results demonstrating LEaP had beneficial outcomes on child goal achievement and family support. Adopting the Evidence Alert Traffic Light System,[189] LEaP is classified 'yellow' with authors recommending LEaP be more widely adopted and independently tested within the clinical setting, suggesting clinicians and researchers continue to monitor outcomes using sensitive outcome measures. Therefore, within the CDS it is recommended that LEaP be trialled as a standard care option for children with developmental delay referred to the services. Given cost-effectiveness or cost-benefit analysis were not evaluated, to ensure LEaP sustainability, the cost of LEaP compared to other standard options should be assessed. More widely, the 'yellow' classification indicates LEaP may also be suitable to be adopted by other early intervention services for children with communication and other developmental delays aged 18 months to 36 months. The publication of the LEaP playgroup manual, fidelity checklists and training package will support the wider implementation, standardisation and adoption of LEaP by other services.

Given LEaP was found to possibly be an effective intervention for CALD and varied socioeconomically disadvantaged families, the exploration of LEaP's relevance to other populations and clinical cohorts is warranted. For researchers developing or adapting therapeutic playgroups for other clinical cohorts or population groups it is suggested that the manual development framework and feasibility testing outlined in Chapter 5

(Paper IV) provides an effective example of how this can be systematically developed and evaluated. Identified as an acceptable ‘soft entry’ point to services, it is suggested research explore the potential of working with Aboriginal and Torres Strait Islander families to assess the need for similar types of place-based services for families with young children who have developmental delays. In approaching this research question, a participatory action research framework method is suggested, with the project co-designed and co-led with Aboriginal researchers, families and community[203,204] to maximise their service utilisation.[53]

In support of the translational nature of this study, the project was awarded a Western Australian Health Translation (WAHTN) grant of $180,000 with the specific aim to extend research translation, exploring the wider implementation of LEaP as standard care within the CDS, publishing the LEaP manual and training package and investigating the appropriateness of adapting LEaP to other cultural groups.

In the context of the CDS implementation and sustained intervention use, this thesis identified a number of considerations for further evaluation and monitoring. At a logistical level, LEaP requires experienced and trained facilitators who practise within a transdisciplinary model. The process evaluation (Paper VI) demonstrated LEaP fidelity required 15 hours of training and supervision per facilitator. This equates to intensive and expensive training which may impact on the sustainability of the intervention. Fidelity requirements and associated facilitator time and cost would need ongoing monitoring.

Secondly, to physically accommodate LEaP a large community-based group room with indoor, outdoor and kitchen facilities are required. During this study, this physical space was unavailable in CDS sites and so researchers partnered with community services. If the CDS is to implement LEaP it is suggested that the CDS continue to partner with community services. This partnership could also explore and evaluate a co-facilitated model. Developing such a community partnership may serve to increase community capacity, and reduce LEaP cost, thus increasing sustainability. Working collaboratively with community services located in geographical areas of high family vulnerability may also serve to potentially involve the families who are not engaging with or do not take up the CDS service, providing an effective ‘soft entry’ point to services. Furthermore, establishing a community partnership to ensure sustainability, co-location of services; and targeting children in their first three years align with the Western Australia's Sustainable Health Review strategies.[47]

Finally, the RCT conducted within this doctorate was relatively small (n=71) and it is recommended that further effectiveness evaluation be embedded within ongoing or future LEaP implementation. Adopting a cluster randomised control trial design, or step-wedged randomised control trial is recommended to evaluate the potential roll out of LEaP across CDS sites. These designs allow some sites to implement LEaP as standard care and evaluate child, parent and service outcomes and compare this to current service delivery at other sites. Findings would inform CDS management if implementing LEaP across all sites is warranted. These study designs would also resolve issues identified in the RCT including reducing the geographical spread of participants that was associated with cross site recruitment. It would also provide an opportunity to evaluate outcomes considered important such as parent autonomy not included in this thesis. In designing further evaluative studies, it is recommended that researchers continue to partner with the CDS adopting the KTA framework[8] to identify potential barriers to LEaP implementation and to select outcomes to inform LEaP feasibility for the CDS. Cost-effectiveness, cost-benefit analysis, cost-analysis relative to LEaP dosage, participant recruitment and ongoing LEaP facilitator training requirements would also need to be included in such evaluations. Given this study was conducted in the Perth metropolitan area, evaluation of LEaP in rural and remote areas is also recommended where access to experienced therapists may be more challenging.

8.2 Significance

Decades of research from the fields of developmental psychology, neuroscience and economics have confirmed the importance of the early years in influencing individual and societal long-term outcomes.[22] The social, emotional and cognitive development during this time predicts a child's long term economic, productivity and educational achievements.[27] Given the importance of a child's early environment in providing supportive, responsive and nurturing experiences to cognitively stimulate and optimally develop neurological growth,[26] the role of a child's family (and specifically their caregivers) cannot be overestimated.[23,36]

The importance of intervening promptly with development issues is well recognised to take advantage of neuroplasticity in children whilst providing support to parents to reduce stress associated with developmental concerns, enabling them to better support their child’s development.[73,95] Early intervention improves a child’s education, social, health and financial outcomes and also benefits wider society’s economic and social outcomes.[29] Nevertheless, the prevalence of developmental delay[49] combined with population growth[69] has increased early intervention service demand, creating waiting lists for some services. Operating with waiting lists is a problem many early intervention services face and has resulted in pressure to consider alternative models of delivering services, including those which engage vulnerable children and their families in services.

This thesis showcases the use of a playgroup intervention model that attempts to enhance outcomes for children demonstrating developmental delays and their families. Arising from a gap in service delivery, the concept of a therapeutic playgroup was suggested by consumers and staff, as a potential model to increase parent capacity and knowledge whilst facilitating parent networking and social connections when first referred to an early intervention service (CDS). Despite playgroups being widely implemented and attended by families across Australia[205,206] and recognised as an effective ‘soft entry’ point for vulnerable families accessing early intervention services,[92,93] there is an identified need for more research to examine playgroups efficacy.[207] Therefore, the systematic development and evaluation of playgroups is novel and important to establish evidence-based practice with findings directly beneficial to CDS consumers and to the wider community where playgroups are being implemented across Western Australia and Australia. These findings contribute to our understanding of the role that playgroups have in facilitating child and parent outcomes in children at risk of developmental delay, whilst providing a protocol for how to develop and deliver effective playgroups.

This is the first project to systematically define, develop and evaluate a therapeutic playgroup for children with developmental delays. In a research context hindered by inconsistent playgroup definitions and practice principles,[4,93,106] this is the first study to articulate an evidence-based definition and set of practice principles for therapeutic playgroups. It demonstrated that therapeutic playgroups are underpinned by family-centred practice,[133] peer support theory,[134] natural learning theory,[139] and self-efficacy theory,[135] which align with self-determination theory's core psychological needs of autonomy, competence, and relatedness.[141,142] This lays the critical foundation for future development, implementation and evaluation of therapeutic playgroups, significantly contributing new knowledge to the field of early intervention.

Moreover, this consumer driven study addresses a clinical need and was also developed and evaluated in conjunction with consumers, practitioners, policy makers, and community members. This makes it the first published evidence-based playgroup manual developed in collaboration with consumers that aims to support young children with development delays and their families. This process ensured the playgroup intervention was developed to target the specific needs of CDS consumers and staff whilst allowing a path for evidence-based practice to be implemented directly into the CDS clinical practice and policy. It has resulted in the first Grade II study demonstrating therapeutic playgroup effectiveness for children with developmental delays and produced a playgroup protocol that could be adopted by other agencies to meet the needs of children and families referred to and waiting for early intervention services. To the best of the author's knowledge, only one other RCT on therapeutic playgroup effectiveness has been published since this study began in February 2015. This study focused on mothers of infants with postnatal mental health challenges[209] rather than children with developmental delays, making outcomes non-comparable to this population.

While the intervention has immediate implications for the many families accessing the CDS, it also provides the first evidenced based protocol for how to develop and deliver effective playgroups, which has broader national and international implications. This community-based model may also serve as an effective early intervention model to provide locally based services in regional and remote Australian communities where therapy access is often limited,[112] but needs further evaluation in this environment. Since the introduction of the National Disability Insurance Scheme (NDIS), there has been greater demand for evidence-based early intervention programs and services for children with developmental delay and disability. The NDIS is anticipated to fund early intervention services for approximately 70,000 children with developmental delay and disability under the NDIS Early Childhood Early Intervention (ECEI) Scheme in 2019.[209] Accordingly, the demand for an effective and evidence-based therapeutic playgroup, such as LEaP is anticipated to increase dramatically. Therefore, the opportunity to scale the LEaP playgroup is vast and there has already been widespread interest in the research findings and playgroup protocol from playgroup organisations, therapy centres and government departments.

Considering children from families of lower socioeconomic status and non-dominant ethnic and cultural backgrounds are at higher risk of developmental delays,[26,28,51,210] the finding that LEaP was potentially effective and relevant to these families is substantial. The effect of family socioeconomic status and cultural background has been comprehensively studied, with poverty and low socioeconomic status strongly correlated with adverse health and wellbeing in later life.[22] Perceived as beneficial and engaging, thesis findings suggested LEaP appeared to be an appropriate 'soft entry' service for these children and families. While this thesis only presented qualitative and descriptive data (Paper IV and VI) supporting these conclusions and further empirical data is required to establish LEaP's effectiveness for CALD and socially disadvantaged families, these preliminary findings are promising. Whilst further research is recommended, findings are relevant to other community-based intervention services and agencies engaging with CALD and socially disadvantaged families and communities.

Lastly, this study is one of the first collaborative research projects to be embedded into the CDS clinical practice. The integration of research within clinical practice improves research relevance, translation of findings and service outcomes.[201] Collaborative partnerships between research institutes and health services facilitate the co-production of knowledge and reduce the research to practice gap.[212,213] This project served to strengthen relationships between research institutes and the Health Department and improved CDS research pathways to create further opportunities for higher degree projects to be embedded into the CDS clinical practice. This is significant in facilitating further consumer driven and translational research studies.

8.3 Limitations

Due to the scope of the doctoral thesis the study limitations are related to the RCT methodology, outcome measures and the study sample. This section describes these limitations to identify areas to be addressed or considered in future research.

RCT methodology

In evaluating the LEaP playgroup, methodological limitations of the RCT (Paper V) reduced the certainty of evidence and consequential strength of recommendations. The RCT potentially had performance bias so it is recommended that future research blind professionals and parents to treatment allocation. The geographical spread of participants enrolled in the RCT study was another methodological limitation, reducing LEaP accessibility and disrupting long-term social connections between parents. The wider geographical recruitment areas were a necessity within the RCT design, but it is recommended that future studies take this into account by using methodologies such as a cluster randomised control trial to reduce geographical spread of participants.

It is also acknowledged that greater consultation with playgroup organisations and research academics throughout research stages would have enhanced the credibility of research findings. Given that playgroups are widely implemented throughout the Australian community, the input of relevant state and territory playgroup organisations may have strengthened research findings and interpretations. The research team comprised of university academics and CDS stakeholders, the sensitivity of Health Department data and the introduction of NDIS created a potential conflict of interest with other organisations because of likely creation of a product with intellectual property and ownership. For this reason, collaboration and consultation with such organisations were limited. It is recommended that future research incorporate a representative from the relevant state or territory playgroup organisation(s) to enhance knowledge partnerships.

The location of the study and control group allocation also limited generalisability and impact on study findings. Implemented and evaluated within the Perth metropolitan area (Australia), it cannot be assumed findings can be generalised to rural or remote regions of Australia, or other metropolitan areas across Australia or internationally. Secondly, the intervention group received LEaP plus treatment a usual (TAU) whilst the control group received TAU. Although TAU was equal across groups, it is not possible to separate the effects of TAU and LEaP. Accordingly, further studies should evaluate the implementation of LEaP in other metropolitan areas and rural and/or remote settings, and examine the effectiveness of LEaP only compared to TAU only.

Outcome measures

Playgroups are shown to provide many benefits to parents, children and the community.[79-81] This wide range of outcomes resulted in multiple measurements options when deciding how to evaluate LEaP effectiveness.

Parent measures

In this thesis, the Parenting Stress Index- Short Form (PSI-4 SF)[125] was adopted as the primary outcome measure. This was chosen because parents of children with developmental challenges have higher rates of stress than parents of typically developing children[146,214,215] and this is further heightened when parents are waiting for early intervention services.[214] This measure is also frequently used in intervention studies for children with developmental delay and disability.[216,217] Unexpectedly, the feasibility study (Paper IV) and RCT (Paper V) indicated parenting baseline stress was much lower than anticipated, falling well below the clinically significant range[125] and expected range for parents of children with disabilities.[218] Given parents elected to participate in the trial, and baseline measures were taken after parents enrolled and prior to random allocation this may have also been impacted by self-selection bias. Despite the feasibility study showing baseline parent stress was lower than expected, it remained the primary outcome for the RCT under the assumption scores may have been impacted by the small sample size (n=8) and given the strong link between parents of children with developmental delay and/or disability and parenting stress.[214,219] Although underpowered, the RCT (Paper V) demonstrated a reduction in stress across groups, with a significant within group reduction in the parenting distress subscale for parents attending LEaP. It is recommended this measure continue to be used to evaluate playgroup effectiveness in larger and sufficiently powered efficacy and effectiveness trials given the importance of this measure for parent wellbeing.

Baseline parenting self-efficacy scores as measured using the Tool to Measure Parenting Self-Efficacy (TOPSE)[126] were also higher than expected, creating a data ceiling effect. Qualitative data in both the feasibility study (Paper IV) and process evaluation (Paper VI), indicated a significant improvement in parental confidence, knowledge and play with their children, but this was not supported by changes in TOPSE subscales or total score. Although the RCT (Paper V) was underpowered, it questions the sensitivity of this parenting self-efficacy measure in this paradigm. Given self-efficacy is an underpinning theoretical framework of therapeutic playgroups, parenting self-efficacy should remain an outcome measure, however it is recommended that a more sensitive measure be used for this population. A recent systematic review of parenting self-efficacy measures suggested using the Self-Efficacy for Parenting Tasks Index- Toddler Scale (SEPTI-TIS)[220] when conducting research with parents of children aged between 13 months and 36 months.[221] Accordingly, it is recommended that future research evaluating LEaP consider using the SEPTI-TIS[220] to determine if LEaP improves parenting self-efficacy.

Child measures

The MacArthur-Bates Communicative Developmental Inventories (CDI) Words and Sentences and CDI:III[130] were used to measure children's communication in the feasibility study (Paper IV) and RCT (Paper V). Due to the range of children's ages (18 to 36 months) both measures were used. However, in the RCT numerous children (n=13) were older than the cut off for CDI-III scoring at the final follow up, creating challenges with comparing outcomes. The difficulty in choosing communication measures for this age range is that many standardised and validated measures are normed up to 36 months. Therefore, this issue is likely to continue to arise if children are followed beyond 36 months. For this reason, if future studies continue to use CDI measures, it is recommended only the CDI Words and Sentences measure is used with raw vocabulary scores compared rather than scaled scores or identify other measures. Alternatively, researchers can reduce the age range of children, so no child is older than 36 months at final follow up, or reduce the length of follow-up.

The RCT study consolidated the importance of using goal-based outcome measures in assessing new and novel interventions.[190] It is recommended that further research evaluating playgroups use goal achievement outcomes such as the Goal Attainment Scale[222] and the Canadian Occupational Performance Measure[129] as the primary outcome measures. This ensures sensitivity to change whilst identifying other measures of interest that may change within the limitation of the population and sample size that is studied. Given these are client centred measures it also guarantees the clinical appropriateness and relevance of study outcomes.

Although children's engagement in play was an important component of the LEaP playgroup neither the feasibility study nor RCT incorporated a play outcome measure.

In early intervention play can be viewed and used in two distinct ways; as a core developmental domain to be targeted; or as the context for other developmental goals.[223] When play is recognised as a developmental domain, early intervention aims to enhance a child's play skills. Research has demonstrated interventions that target and teach play skills can dramatically increase children's play and development in other areas.[224] Alternatively, intervention can take the approach of using play as the context to embed developmental goals. This approach is widely advocated for across early intervention and shown to be an effective method of working with children and families.[225] Whilst both distinct approaches have evidence demonstrating their effectiveness, when developing and evaluating new intervention models it is important to distinguish which approach is used given this influences outcome measurement selection and evaluation. The LEaP playgroup adopted the second approach, using play as the context for child learning and skill development. Whilst the LEaP playgroup provided wide-ranging play options to cater for children's varied interests, play served as the context for parent-child relationship and communication strategies to be applied, rather than play itself being the intervention target. For this reason, outcome measures focused on child goal achievement and parent confidence in engaging in play (TOPSE), rather than child play skills. Considering the relationship between child development and play it is recommended further playgroup studies include a measure of child playfulness such as the Test of Playfulness[226] to evaluate the potential impact of therapeutic playgroups on child play outcomes.

Community measures

The Family Support Scale[121] was chosen to measure each family's community and social connections. Although published in 1988, this measure was still found to be relevant and appropriate to detect changes in family support and is recommended for ongoing use in playgroup evaluative research.

Study sample

This thesis involved partnering and collaborating with over 150 allied health professionals, policy makers, consumers and community professionals, providing multiple perspectives and representation. This included consumers with lived experience contributing to study design and LEaP manual development as well as trial participants. In the feasibility study (Paper IV) and RCT (Paper V), this included a range of CALD families and low socioeconomic families and therefore study findings can be applied to these groups. There was limited involvement of Aboriginal and Torres Strait Islander families in the study and therefore it cannot be assumed the findings are applicable to this population. Three mothers that participated in the consumer study (Paper III) to inform on key components of playgroups identified as Aboriginal or Torres Strait Islander and two allied health clinicians from the Aboriginal Health Service were members of the LEaP working group (Paper IV). However, no caregivers in feasibility study (Paper IV) and RCT (Paper V) identified as Aboriginal or Torres Strait Islander. Accordingly, further research is warranted to determine if playgroups are a culturally appropriate method of service delivery for these families. The gender of professionals and caregivers that participated in studies was disproportionally female. There were no male professionals involved in the LEaP development or evaluation and only eight male caregivers were involved across studies compared to 95 female caregivers. Whilst this is a common limitation in early intervention research with health professionals and caregivers, it is acknowledged that further research should explore the relevance of therapeutic playgroups for fathers and other male caregivers.

Secondly, the RCT sample was underpowered, only recruiting 71 children (69 families) instead of the 86 participants required to detect a moderate clinically significant change in the primary outcome (PSI-4 SF).[118] This may have impacted on the RCT outcomes, so future research is recommended to extend testing in larger samples of children and families to ensure it is adequately powered.

Finally, the recruitment and selection criteria for the feasibility study and RCT required families be referred to and engaged with CDS clinical services. Therefore, although participant characteristics and geographical recruitment data revealed a variation of developmental and socioeconomic vulnerability it cannot be assumed LEaP is effective in engaging vulnerable or 'hard to reach' families who have not yet engaged with services. Of the 111 families who did not meet RCT inclusion criteria, for some this was because they did not respond to the CDS service offer and were discharged prior to being contacted by researchers. Accordingly, although LEaP is suggested to be an effective 'soft entry' point for vulnerable families, further research is required to evaluate LEaP acceptability for vulnerable families who do not initially engage with early intervention services.

8.4 Conclusion

Informed by the KTA framework[8] this doctorate was initiated in response to an identified need by CDS service providers and consumers to have earlier access to developmental support and to connect with other families when first referred to early intervention services. Conducted in partnership with early intervention service stakeholders (including consumers), this thesis was designed to tailor knowledge creation and products to the needs of the service, specifically children with developmental delays and their families. It is the first study to systematically establish the definition and practice principles of a therapeutic playgroup and establish the evidence base for therapeutic playgroups for children with developmental delays. Considering empirical playgroup research has been impeded by the lack of a playgroup 'blueprint,'[86,99] this thesis lays the foundation for further studies to extend research by adopting and evaluating therapeutic playgroup principles.

This study also resulted in the creation of the LEaP playgroup protocol and training for children with developmental delay. This was systematically developed in conjunction with early intervention service professionals and consumers, and evaluated using a Level IV feasibility study and Level II RCT. Although the RCT did not show significant differences in the primary outcome measure of parenting stress, it did show the LEaP playgroup had beneficial impacts on family support and child goal achievement. Qualitative findings also indicated LEaP was perceived to increase parent-child attachment, parent confidence and knowledge, child development and family support.

Using the Evidence Alert Traffic Light System[182] for this study, LEaP can be classified as 'yellow,' so notwithstanding minor manual revision, further implementation is warranted with ongoing monitoring, evaluation and research enquiry. In an environment of increasing population growth, high rates of developmental vulnerability, and focus on early intervention, the thesis adds new knowledge to help address an important problem. This doctorate has demonstrated the appropriateness and effectiveness of therapeutic playgroups as a service option for children with developmental delay when first referred to an early intervention service, and produced a LEaP playgroup protocol (manual, resources and training package) that enhances the ability to implement and adapt this model across early intervention settings.

Thesis Reference List

1. Jackson D. Creating a place to 'be': unpacking the facilitation role in three supported playgroups in Australia. *Eur Early Child Educ.* 2013;21(1):77-93. doi: 10.1080/1350293X.2012.760345
2. McEwin S, Stagnitti K, Andrews F. The efficacy of co-locating a supported playgroup in a shopping centre. *Comm Child Fam Aus.* 2015;9(1):69-85.
3. Warr D, Mann R, Forbes D, Turner C. Once you've built some trust: Using playgroups to promote children's health and wellbeing for families from migrant backgrounds. *Aust J Early Child.* 2013;38(1):41-48.
4. Williams K, Berthelsen D, Viviani M, Nicholson J. Facilitated parent-child groups as family support: A systematic literature review of supported playgroup studies. *J Child Fam Stud.* 2018;27(8):2367-2383.
5. Child Development Service. *Clinical Service Redesign Implementation Plan 2015 - 2017.* Perth, Australia. Child and Adolescent Health Service, Western Australian Government Department of Health; 2015.
6. Levy Y. 'Developmental delay' reconsidered: The critical role of age-dependent, co-variant development. *Front Psychol.* 2018;9(503); 1-10.
7. American Association on Intellectual and Developmental Disabilities. *Intellectual disability: Definition, classification, and systems of supports.* 11 ed. Washington, DC: American Association on Intellectual and Developmental Disabilities; 2010.
8. Graham I, Logan J, Harrison M, et al. Lost in knowledge translation: Time for a map? *J Contin Educ Health Prof.* 2006;26:13-24.
9. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: The new Medical Research Council guidance. *BMJ.* 2008;337:a1655.
10. Kastner M, Straus SE. Application of the Knowledge-to-Action and Medical Research Council frameworks in the development of an osteoporosis clinical decision support tool. *J Clin Epidemiol.* 2012;65(11):1163-1170.
11. Straus SE, Brouwers M, Johnson D, et al. Core competencies in the science and practice of knowledge translation: Description of a Canadian strategic training initiative. *Implement Sci.* 2011;6:127-34.
12. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: Understanding time lags in translational research. *J Res Soc Med.* 2011;104(12):510-520.

13. Balas EA, Boren SA. Managing clinical knowledge for health care improvement. In: Bemmel J, McCray AT, editors. *Yearbook of medical informatics 2000*. Patient-centred systems. Stuttgart, Germany: Scattauer Verlagsgesellschaft mbH; 200.65-70.

14. Scott SD, Albrecht L, O'Leary K, et al. Systematic review of knowledge translation strategies in the allied health professions. *Implement Sci.* 2012;7(1):70-87.

15. Fixsen D, Blase K, Metz A, Van Dyke M. Statewide implementation of evidence-based programs. *Except Child.* 2013;79(2):213-230.

16. Field B, Booth A, Ilott I, Gerrish K. Using the Knowledge to Action Framework in practice: A citation analysis and systematic review. *Implement Sci.* 2014;9(1):172.

17. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth I, Petticrew M. Developing and evaluating complex interventions: The new Medical Research Council guidance. *Int J Nurs Stud.* 2013;50(5):587-592.

18. Moore G, Audrey S, Barker M, et al. Process evaluation of complex interventions: Medical Research Council guidance. *BMJ.* 2015;350:h1258.

19. Davidson E. An economic evaluation of the use of therapeutic playgroups for children with developmental delay [Masters Thesis]. Perth, Western Australia: School of Public Health, Curtin University; 2018.

20. Barker DJP. Developmental origins of chronic disease. *Public Health.* 2012;126(3): 185-189.

21. Fox SE, Levitt P, Nelson CA. How the timing and quality of early experiences influence the development of brain architecture. *Child Dev.* 2010;81(1):28-40.

22. Moore T, Arefadib N, Deery A, West S. *The first thousand days: An evidence paper.* Parkville, Victoria: Centre for Community Child Health, Murdoch Children's Research Institute; 2017.

23. Walker SP, Wachs TD, Grantham-McGregor S, et al. Inequality in early childhood: Risk and protective factors for early child development. *Lancet.* 2011;378 (9799):1325-1338.

24. Ismail FY, Fatemi A, Johnston MV. Cerebral plasticity: Windows of opportunity in the developing brain. *Eur J Paediatr Neurol.* 2017;21(1):23-48.

25. Gluckman PD, Hanson MA, Buklijas T. A conceptual framework for the developmental origins of health and disease. *J Devel Orig Health Dis.*12010:6-18.

26. Knudsen EI, Heckman JJ, Cameron JL, Shonkoff JP. Economic, neurobiological, and behavioral perspectives on building America's future workforce. *Proceedings of the National Academy of Sciences.* 2006;103(27):10155.

27. Shonkoff JP, Phillips DA. *From neurons to neighborhoods: The science of early childhood development.* Washington, DC: National Academy Press; 2000.

28. Doyle O, Harmon CP, Heckman JJ, Tremblay RE. Investing in early human development: Timing and economic efficiency. *Econ Hum Biol.* 2009;7(1):1-6.

29. Heckman JJ. The economics of investing in early childhood. Niftey Conference. University of New South Wales, Sydney, NSW; 2006.

30. Center on the Developing Child at Harvard University. *Applying the science of child development in child welfare systems.* Cambridge, Massachusetts: Harvard University: Centre on the Developing Child;2016.

31. Szyf M. Early life, the epigenome and human health. *Acta Paediatr.* 2009;98(7): 1082-1084.

32. Heckman JJ. Skill formation and the economics of investing in disadvantaged children. *Science.* 2006;312(5782):1900-1902.

33. Lewis AJ, Olsson CA. Early life stress and child temperament style as predictors of childhood anxiety and depressive symptoms: Findings from the longitudinal study of Australian children. *Depress Res Treat.* 2011; 296026:1-9.

34. Goldfeld S, O’Connor M, Cloney D, et al. Understanding child disadvantage from a social determinants perspective. *J Epidemiol Community Health*. 2018;72(3):223-229.

35. Goldfeld S, O’Connor M, Chong S, et al. The impact of multidimensional disadvantage over childhood on developmental outcomes in Australia. *Int J Epidemiol*. 2018;47(5):1485-1496.

36. Belsky JAY, Fearon RMP. Infant–mother attachment security, contextual risk, and early development: A moderational analysis. *Dev Psychopath.* 2002;14(2):293-310.

37. Ginsburg R. The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Peds Jan.* 2007: 119(1): 182-191.

38. Bundy AC. Play and playfulness: What to look for. In Parham LD, Fazio LS, eds., *Play in Occupational Therapy for Children*. St. Louis, MO: Mosby Inc;1997.

39. Smith P, Takhvar M, Gore N, Vollstedt R. *Play in young children: Problems of Definition, Categorization and Measurement*. New York: Gordon and Breach; 1986.

40. Office of the United Nations High Commissioner for Human Rights. Convention on the Rights of the Child. General Assembly Resolution 44/25 of 20 November 1989. www.unhchr.ch/html/menu3/b/k2crc.htm.

41. Brumariu L. Parent–child attachment and emotion regulation. *Dir Child Adolesc Dev*. 2015:148; 31-45.

42. Okimoto A M, Bundy A, Hanzlik J. Playfulness in children with and without disability: Measurement and intervention. *Am J Occup Ther.* 2000*;* 54: 73–82.

43. Stagnitti K, Malakellis M, Kenna R, Kersha B, Hoare M, Silva-Sanigorski A. Evaluating the feasibility, effectiveness and acceptability of an active play intervention for disadvantaged preschool children: A pilot study. *AJEC.* 2011; 36(3): 65-72.

44. United Nations. *Convention on the Rights of the Child.* Geneva, Switzerland: United Nations;1990.

45. Rolnick A, Grunewald R. Early childhood development: Economic development with a high public return. *Fedgazette.* 2003 (March).

46. Black MM, Walker SP, Fernald LCH, et al. Early childhood development coming of age: Science through the life course. *Lancet.* 2017;389(10064):77-90.

47. Sustainable Health Review. *Sustainable Health Review: Final Report to the Western Australian Government*. Perth, Western Australia. Department of Health; 2019.

48. Halfon N, Houtrow A, Larson K, Newacheck P. The changing landscape of disability in childhood. *Future Child.* 2012;22(1):13-42.

49. Australian Government. *Australian Early Development Census national report 2018*. Canberra, Australia: Commonwealth of Australia; 2019.

50. Feldman DE, Swaine B, Gosselin J, Meshefedjian G, Grilli L. Is waiting for rehabilitation services associated with changes in function and quality of life in children with physical disabilities? *Phys Occ Ther Pediatr.* 2008;28:291-304.

51. Li J, D'Angiulli A, Kendall GE. The Early Development Index and children from culturally and linguistically diverse backgrounds. *Early Years.* 2007;27(3):221-235.

52. Woolfenden S, Posada N, Krchnakova R, et al. Equitable access to developmental surveillance and early intervention – understanding the barriers for children from culturally and linguistically diverse (CALD) backgrounds. *Health Expect.* 2014: 18(6):3286-3301.

53. DiGiacomo M, Davidson PM, Abbott P, et al. Childhood disability in Aboriginal and Torres Strait Islander peoples: A literature review. *Int J Equity Health.* 2013;12:7-25.

54. Hackman DA, Farah MJ. Socioeconomic status and the developing brain. *Trends Cogn Sci.* 2009;13(2):65-73.

55. Kruk KE. Parental income and the dynamics of health inequality in early childhood-Evidence from the UK. *Health Econ.* 2013;22(10):1199-1214.

56. Marmot Review. *Fair Society, Healthy Lives: Strategic review of health inequalities in England post-2010.* London, UK: Global Health Equity Group, Department of Epidemiology and Public Health, University College London;2010.

57. O'Connor M, Chong S, Hutchinson D, et al. Socioeconomic disadvantage in infancy and academic and self-regulation outcomes. *Pediatrics.* 2019;143(5).

58. Feinstein L. Inequality in the early cognitive development of British children in the 1970 cohort. *Economica.* 2003;70(277):73-97.

59. Woolfenden S, Goldfeld S, Raman S, Eapen V, Kemp L, Williams K. Inequity in child health: The importance of early childhood development. *J Paediatr Child Health.* 2013;49(9):E365-E369.

60. Engle PL, Fernald LCH, Alderman H, et al. Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *Lancet.* 2011;378(9799):1339-1353.

61. Bailey DB, Hebbeler K, Scarborough A, Spiker D, Mallik S. First experiences with early intervention: A national perspective. *Pediatrics.* 2005;113:887-896.

62. Tuominen-Eriksson AM, Svensson Y, Gunnarsson RK. Children with disabilities are often misdiagnosed initially and children with neuropsychiatric disorders are referred to adequate resources 30 months later than children with other disabilities. *J Autism Dev Disord.* 2013;43(3):579-584.

63. Tuominen-Eriksson A, Svensson Y, Gunnarsson R. Children with disabilities are often misdiagnosed initially and children with neuropsychiatric disorders are referred to adequate resources 30 months later than children with other disabilities. *J Autism Dev Disord.* 2013;43(3):579-584.

64. Karoly LA, Kilburn MR, Cannon JS. *Early Childhood Interventions Proven Results, Future Promise.* 1 ed: RAND Corporation; 2005.

65. Duncan KM, Macgillivray S, Renfrew MJ. Costs and savings of parenting interventions: Results of a systematic review. *Child Care Health Dev.* 2017;43(6):797-811.

66. Francesconi M, Heckman JJ. Child development and parental investment: introduction. *Econ J.* 2016;126(596):F1-F27.

67. Pote I, Doubell L, Brims L, Larbie J, Stock L, Lewing B. *Engaging disadvantaged and vulnerable parents: An evidence review.* London, United Kingdom: Early Intervention Foundation; 2019.

68. Oberklaid F, Baird G, Blair M, Melhuish E, Hall D. Children's health and development: Approaches to early identification and intervention. *Arch Dis Child.* 2013;98(12):1008-1011.

69. Commissioner for Children and Young People. *Profile of children and young people in WA – January 2019.* WA, Perth: Commissioner for Children and Young People 2019.

70. Feldman DE, Swaine B, Gosselin J, Meshefedjian G, Grilli L. Is waiting for rehabilitation services associated with changes in function and quality of life in children with physical disabilities? *Phys Occup Ther Pediatri.* 2008;28(4):291-304; 305-297.

71. Miller AR, Armstrong RW, Mâsse LC, Klassen AF, Shen J, O'Donnell ME. Waiting for child developmental and rehabilitation services: An overview of issues and needs. *Dev Med Child Neurol.* 2008;50(11):815-821.

72. Boshoff K, Hartshorne S. Profile of occupational therapy practice in rural and remote South Australia. *Aust J Rural Health.* 2008;16(5):255-261.

73. Johnston MV. Plasticity in the developing brain: Implications for rehabilitation. *Dev Disabil Res Rev.* 2009;15(2):94-101.

74. Child Development Service. *Emerging trends in early intervention and CDS service delivery. Phase IV: Final recommendations*. Perth, Australia: Child and Adolescent Health Service, Government of Western Australia; 2015.

75. Child Development Service. *Emerging Trends in early intervention and CDS service delivery. Phase III: Staff consultation*. Perth, Australia: Child and Adolescent Health Service, Government of Western Australia; 2015.

76. Child Development Service. *Emerging trends in early intervention and CDS service delivery. Phase II: Consumer consultation on CDS service delivery*. Perth, Australia: Child and Adolescent Health Service, Government of Western Australia; 2015.

77. Hancock K, Lawrence D, Mitrou F, et al. The association between playgroup participation, learning competence and social-emotional wellbeing for children aged four-five years in Australia. *Aust J Early Child.* 2012;37(2):72-81.

78. ARTD Consultants. *Evaluation of the playgroup program: Final report for the Department of Families, Housing, Community Services, and Indigenous Affairs*. Sydney, NSW: ARTD Consultants; 2008.

79. Cumming T, Wong S. *SDN PlayLinks: Dimensions of a Relationships-Based Services.* Sydney, NSW: SDN Children's Services Inc; 2008.

80. Centre for Community Child Health. *Early Intervention Parenting Project: Improving access to playgroups for all families project: Final report*. Melbourne, Victoria: Department of Family and Community Services, Centre for Community Child Health, Royal Children's Hospital; 2003.

81. Children and Early Childhood Development. *Supported playgroups and parent groups: Program guidelines.* Melbourne, Victoria: Department of Education and Early Childhood Development; 2008.

82. Dadich A, Spooner C. Evaluating playgroups: An examination of issues and options. *Aust Community Pyschol.* 2008;20(1):95-104.

83. Strange C, Fisher C, Howat P, Wood L. Creating a village in modern suburbia: Parenthood and social capital. *Urban Pol Res.* 2015;33(2):160-177.

84. Gerometta J, Haussermann H, Longo G. Social innovation and civil society in urban governance: Strategies for an inclusive city. *Urban Stud.* 2005;42(11):2007-2021.

85. Wellman B. Computer networks as social networks. *Science.* 2001;293(5537): 2031-2034.

86. Jackson D. What's really going on?: Parents' views of parent support in three Australian supported playgroups. *Aust J Early Child.* 2011;36(4):29-37.

87. Ginsburg KR. The Importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics.* 2007;119(1):182-191.

88. Gregory T, Harman-Smith Y, Sincovich A, Wilson A, Brinkman S. *It takes a village to raise a child: The influence and impact of playgroups across Australia.* South Australia: Telethon Kids Institute;2016.

89. Brodin J. Diversity of aspects of play in children with profound and multiple disabilities. *Early Child Dev Care.* 2005;175(2):105-116.

90. Stratigos T, Fenech M. Supporting parents’ informed early childhood education and care choices through playgroups. *Aust J Early Child.* 2018;43(4):14-21.

91. Wright A, Warren J, Burriel K, Sinnott L. Three variations on the Australian supported playgroup model. *Int J Soc Wel.* 2019;28(3):333-344.

92. Early Childhood Intervention Australia. *National guidelines: Best practice in early childhood intervention.* Sydney NSW: Early Childhood Intervention Australia;2016.

93. Commerford J, Robinson E. *Supported playgroups for parents and children: The evidence for their benefits.* Melbourne, Victoria: Australian Institute of Family Studies;2016.

94. Wright AC, Warren J, Burriel K, Sinnott L. Three variations on the Australian supported playgroup model. *Int J Soc Wel.* 2019;28(3):333-344.

95. Moore T. *Early childhood and long-term development: The importance of the early years.* Western Australia, Australia: Australian Research Alliance for Children and Youth; 2006.

96. Rivard M, Terroux A, Parent-Boursier C, Mercier C. Determinants of stress in parents of children with autism spectrum disorders. *J Autism Dev Disord.* 2014;44(7):1609-1620.

97. Ehrmann Feldman D, Couture M, Grilli L, Simard MN, Azoulay L, Gosselin J. When and by whom is concern first expressed for children with neuromotor problems? *Arch Pediatr Adolesc Med.* 2005;159(9):882-886.

98. Carlson G, Armitstead C, Rodger S, Liddle G. Parents' experiences of the provision of community-based family support and therapy services utilizing the strengths approach and natural learning environments. *J Appl Res Intellect Disabil.* 2010;23(6):560-572.

99. Foran S, Sweeney J. Accessing specialist early intervention services for pre-school children. *Learn Dis Prac.* 2010;13(2):30-35.

100. Hiebert-Murphy D, Trute B, Wright A. Patterns of entry to community-based services for families with children with developmental disabilities: Implications for social work practice. *Child Fam Soc Work.* 2008;13(4):423-432.

101. Boshoff K, Alant E, May E. Occupational therapy managers' perceptions of challenges faced in early intervention service delivery in South Australia. *Aust Occ Ther J.* 2005;52(3):232-242.

102. Kolehmainen N, MacLennan G, Francis J, Duncan E. Clinicians' caseload management behaviours as explanatory factors in patients' length of time on caseloads: A predictive multilevel study in paediatric community occupational therapy. *BMC Health Serv Res.* 2010;10(1):1-9.

103. Kolehmainen N, Francis JJ, McKee L, Duncan EA. Beliefs about responsibilities, the aims of therapy and the structure of the therapy process: A qualitative study of caseload management issues in child health occupational therapy. *Child Care Health Dev.* 2012;38(1):108-116.

104. Anderson LM, Shinn C, Fullilove MT, et al. The effectiveness of early childhood development programs. A systematic review. *Am J Prev Med.* 2003;24(3 Suppl):32-46.

105. Nores M, Barnett WS. Benefits of early childhood interventions across the world: (Under) Investing in the very young. *Econ Educ Rev.* 2010;29(2): 271-282.

106. Pourliakas A, Sartore G-M, Macvean M, Devine B. *Supported playgroups for children from birth to five years.* Victoria, Australia: Parenting Research Centre prepared for the Benevolent Society; 2016.

107. National Health and Medical Research Council. *Statement on Consumer and Community involvement in Health and Medical Research*. Australia: Consumers Health Forum of Australia; 2016.

108. Boote J, Telford R, Cooper C. Consumer involvement in health research: A review and research agenda. *Health Policy.* 2002;61(2):213-236.

109. Crozier K, Moore J, Kite K. Innovations and action research to develop research skills for nursing and midwifery practice: The Innovations in Nursing and Midwifery Practice Project study. *J Clin Nurs.* 2012;21(11/12): 1716-1725.

110. Child Development Service. *Child Development Information Services: Summary of referrals and discharges for Child development Services 01/07/13 - 30/06/1*. Perth, W.A: Child and Adolescent Health Service, Department of Health; 2014.

111. Moore T. *Early childhood and long-term development: The importance of the early years.* Melbourne: Centre for Community Child Health, Murdoch Children's Research Centre, Royal Children's Hospital, Australian Research Alliance for Children and Youth;2006.

112. Doherty SR. Could we care for Amillia in rural Australia? *Rural Remote Health.* 2007;7(4);768.

113. Dew A, Veitch C, Lincoln M, et al. The need for new models for delivery of therapy intervention to people with a disability in rural and remote areas of Australia. *J Intellect Dev Disabil.* 2012;37(1):50-53.

114. Straus SE, Tetroe JM, Graham ID. Knowledge translation is the use of knowledge in health care decision making. *J Clin Epidemiol.* 2011;64(1):6-10.

115. Davis D, Davis ME, Jadad A, et al. The case for knowledge translation: Shortening the journey from evidence to effect. *BMJ.* 2003;327(7405):33.

116. Craig P, Dieppe P, Macintyre S, Michie S, Nazareth N, Petticrew M. *Developing and evaluating complex interventions: New guidance.* United Kingdom: Medical Research Council;2006.

117. Dowding D, Lichtner V, Closs SJ. Using the MRC Framework for Complex Interventions to develop clinical decision support: A case study. *Stud Health Technol Inform.* 2017;235:544-548.

118. Missiuna C, Pollock N, Campbell WN, et al. Use of the Medical Research Council Framework to develop a complex intervention in pediatric occupational therapy: Assessing feasibility. *Res Dev Disabil.* 2012;33(5):1443-1452.

118. Lakshman R, Griffin S, Hardeman W, Schiff A, Kinmonth AL, Ong KK. Using the Medical Research Council framework for the development and evaluation of complex interventions in a theory-based infant feeding intervention to prevent childhood obesity: The baby milk intervention and trial. *J Obes.* 2014; 646504.

120. Divan G, Hamdani SU, Vajartkar V, et al. Adapting an evidence-based intervention for autism spectrum disorder for scaling up in resource-constrained settings: The development of the PASS intervention in South Asia. *Glob Health Action.* 2015;8:27278.

121. Bowen DJ, Kreuter M, Spring B, et al. How we design feasibility studies. *Am J Prev Med.* 2009;36(5):452-457.

122. Strauss AL. Basics of qualitative research: Techniques and procedures for developing grounded theory. 2nd ed. Thousand Oaks: Sage Publications; 1998.

123. Colaizzi PE. Psychological research as the phenomenologist views. In: Valle R, King M, eds. *Existential-phenomenological alternatives for psychology.* New York: Oxford University Press; 1978:48-71.

124. Ritchie J, Spencer L. Qualitative data analysis for applied policy research. In: Bryman A, Burgess RG, eds. *Analyzing qualitative data.*1994:173- 194.

125. Abidin R. Parenting Stress Index. 4th ed. Lutz, Florida: Psychological Assessment Resources, Inc; 2012.

126. Kendall S, Bloomfield L. Developing and validating a tool to measure parenting self-efficacy. *J Adv Nurs.* 2005;51(2):174-181.

127. Rand Trust. 12-Item Short Form Survey (SF-12). http://www.rand.org/health/surveys_tools/mos/12-item-short-form.html. Published 2006.

128. Dunst C, Jenkins V, Trivette C. Family Support Scale. In: Dunst CJ, Trivette CM, Deal AG, eds. *Enabling and empowering families: Principles and guidelines for practice* Vol 153-174. Cambridge, MA: Brookline Books; 1988.

129. Law M, Baptiste S, Carswell A, McColl M, Polatajko H, Pollock N. *The Canadian Occupational Performance Measure.* 4th ed. Ottowa Canada: Canadian Association of Occupational Therapists; 2005.

130. Fenson L, Dale P, Reznick J. *The MacArthur Communicative Development Inventories: User's guide and technical manual*. San Diego, CA: Singular Publishing Group; 1993.

131. King G, Currie M, Petersen P. Child and parent engagement in the mental health intervention process: A motivational framework. *Child Adolesc Ment Health.* 2014;19(1):2-8.

132. Helfrich CD, Damschroder LJ, Hagedorn HJ, et al. A critical synthesis of literature on the promoting action on research implementation in health services (PARIHS) framework. *Implement Sci.* 2010;5:82-102.

133. Dunst C, Trivette C. Empowerment, effective help giving practices and family-centered care. *Pediatr Nurs.* 1996;22(4):334-337.

134. Shilling V, Morris C, Thompson-coon J, Ukoumunne O, Rogers M, Logan S. Peer support for parents of children with chronic disabling conditions: A systematic review of quantitative and qualitative studies. *Dev Med Child Neurol*, 55(7), 602-609.

135. Bandura A. Self- efficacy: Toward a unifying theory of behavioral change. *Psychol Rev.* 1977;84(2):191-215.

136. World Health Organisation. *Ninth future forum on health systems governance and public participation.* Copenhagen: WHO Regional Office for Europe;2005.

137. Mathie E, Wilson P, Poland F, et al. Consumer involvement in health research: A UK scoping and survey. *Int J Consum Stud.* 2014;38(1):35-44.

138. Armstrong J, Elliott C, Davidson E, Mizen J, Wray J, Girdler S. Defining therapeutic playgroups: Key principles of therapeutic playgroups from the perspective of professionals. *J Child Fam Stud.* 2019; 1-5, doi: 10.1007/s10826-019-01622-2.

139. Dunst C, Trivette C, Humphries T, Raab M, Roper N. Contrasting approaches to natural learning environment interventions. *Infants Young Child.* 2001;14(2):48-63.

140. Bandura A. *Self-efficacy: The exercise of control.* New York: Freeman; 1997.

141. Gagné M, Deci E. Self-Determination theory and work motivation. *J Organ Behav.* 2005;26:331-362.

142. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol.* 2000;55(1):68-78.

143. Dunst C, Trivette C, Hamby D. Meta-analysis of family-centered helpgiving practices research. *Ment Retard Dev Disabil Res Rev.* 2007;13(4):370-378.

144. Kingsley K, Mailloux Z. Evidence for the effectiveness of different service delivery models in early intervention services. *Am J Occ Ther.* 2013;67(4):431-436.

145. Solomon M, Pistrang N, Barker C. The benefits of mutual support groups for parents of children with disabilities. *Am J Community Psychol.* 2001;29(1):113-132.

146. Boyd BA. Examining the relationship between stress and lack of social support in mothers of children with autism. *Focus Autism Other Dev Disabil.* 2002;17(4):208-215.

147. Kerr SM, McIntosh JB. Coping when a child has a disability: Exploring the impact of parent-to-parent support. *Child Care Health Dev.* 2000;26(4):309-322.

148. Plant KM, Sanders MR. Predictors of caregiver stress in families of preschool-aged children with developmental disabilities. *J Intellect Disabil Res.* 2007;51(Pt 2):109-124.

149. Weiss MJ. Hardiness and social support as predictors of stress in mothers of typical children, children with autism, and children with mental retardation. *Autism.* 2002;6(1):115-130.

150. Armstrong J, Paskal K, Elliott C, et al. What makes playgroups therapeutic? A scoping review to identify the active ingredients of therapeutic and supported playgroups. *Scand J Occup Ther.* 2018:1-22.

151. Friedman M, Woods J, Salisbury C. Caregiver coaching strategies for early intervention providers: Moving toward operational definitions. *Infants Young Child.* 2012;25(1):62-82.

152. Hanft B. Therapy in natural environments: The means or end goal for early intervention? *Infants Young Child.* 2000;12(4):1-13.

153. Duckett S, Willcox S. *The Australian health care system.* 4th ed. South Melbourne: Oxford University Press; 2011.

154. Gomersall JS, Jadotte YT, Xue Y, Lockwood S, Riddle D, Preda A. Conducting systematic reviews of economic evaluations. *Int J Evid Based Healthc.* 2015;13:170-178.

155. Currie G, Curtis S, Klassen T. Evidence-based decision-making in child health: The role of clinical research and economic evaluation. In: Ungar WJ, ed. *Economic evaluation in child health*. Oxford: Oxford University Press; 2009.

156. Maddison S, Hamilton C. Non-government organisations. In: Hamilton C, Maddison S, eds. *Silencing dissent: How the Australian government is controlling public opinion and stifling debate.* Crows Nest, NSW: Allen & Unwin; 2007:78-100.

157. Hoch JS, Dewa CS. An introduction to economic evaluation: What's in a name? *Can J Psychiatry.* 2005;50(3):159-166.

158. Keyser S. The implementation of a delirium knowledge translation product for families of the elderly. Ontario, Canada: School of Nursing, Queen’s University; 2010.

159. Claude KM, Juvenal KL, Hawkes M. Applying a knowledge-to-action framework for primary prevention of spina bifida in tropical Africa. *Matern Child Nutr.* 2012;8(2):174-184.

16. Munce S, Kastner M, Cramm H, et al. Applying the knowledge to action framework to plan a strategy for implementing breast cancer screening guidelines: An interprofessional perspective. *J Cancer Educ.* 2013;28(3):481-487.

161. Stacey D, Higuchi KA, Menard P, Davies B, Graham ID, O'Connor AM. Integrating patient decision support in an undergraduate nursing curriculum: An implementation project. *Int J Nurs Educ Scholarsh.* 2009;6(10):1548-923X.

162. Straus SE, Graham ID, Taylor M, Lockyer J. Development of a mentorship strategy: A knowledge translation case study. *J Contin Educ Health Prof.* 2008;28(3):117-122.

163. Molfenter S, Ammoury A, Yeates EY, Steele CM. Decreasing the knowledge-to-action gap through research-clinical partnerships in speech-language pathology. *Commun Sci Disord.* 2009;33(2):82-88.

164. Tugwell PS, Santesso NA, O'Connor AM, Wilson AJ. Knowledge translation for effective consumers. *Phys Ther.* 2007;87(12):1728-1738.

165. Bjork IT, Lomborg K, Nielsen CM, et al. From theoretical model to practical use: An example of knowledge translation. *J Adv Nurs.* 2013;69(10):2336-2347.

166. Squires J, Bricker D. *Ages & Stages Questionnaires.* 3rd ed. Baltimore, MD: Brookes Publishing; 2009.

167. Reichmuth K, Embacher AJ, Matulat P, Am Zehnhoff-Dinnesen A, Glanemann R. Responsive parenting intervention after identification of hearing loss by Universal Newborn Hearing Screening: The concept of the Muenster Parental Programme. *Int J Pediatr Otorhinolaryngol.* 2013;77(12):2030-2039.

168. Roberts M, Kaiser A. The effectiveness of parent-implemented language interventions: A meta-analysis. *Am J Speech Lang Patholol.* 2011;20(3):180-199A.

169. Hoffman KT, Marvin RS, Cooper G, Powell B. Changing toddlers' and preschoolers' attachment classifications: The Circle of Security intervention. *J Consult Clin Psychol*. 2006;74(6):1017-1026.

170. Hancock T, Ledbetter-Cho K, Howell A, Lang R. Enhanced Milieu Teaching. In: Lang R, Hancock TB, Singh NN, eds. *Early Intervention for young children with autism spectrum disorder.* Cham: Springer International Publishing; 2016:177-218.

171. Heidlage JK, Cunningham JE, Kaiser AP, et al. The effects of parent-implemented language interventions on child linguistic outcomes: A meta-analysis. *Early Child Res Q.* 2018.

172. Hebbler K, Spiker D, Bailey D, et al. *Early intervention for infants and toddlers with disabilities and their families: Participants, services, and outcomes. Final Report of the National Early Intervention Longitudinal Study (NEILS*). Menlo Park, CA: Stanford Research Institute;2007.

173. Kaiser AP, Roberts MY. Advances in early communication and language intervention. *J Early Interv*. 2011;33(4):298-309.

174. Nicholson J, Berthelsen D, Williams K, Abad V. National study of an early parenting intervention: Implementation differences on parent and child outcomes. *Prev Sci.* 2010;11(4):360-370.

175. Francoeur E, Ghosh S, Reynolds K, Robins R. An international journey in search of diagnostic clarity: Early developmental impairment. *J Dev Behav Pediatr.* 2010;31(4):338-340.

176. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders.* 5 ed. Washington, DC: American Psychiatric Association; 2013.

177. Staples KL, MacDonald M, Zimmer C. Chapter Seven - Assessment of motor behavior among children and adolescents with autism spectrum disorder. In: Hodapp RM, ed. *International Review of Research in Developmental Disabilities.* Vol 42. Academic Press; 2012:179-214.

178. Jeans LM, Santos RM, Laxman DJ, McBride BA, Dyer WJ. Early predictors of ASD in young children using a nationally representative data set. *J Early Interv.* 2013;35(4):303-331.

179. Wiggins LD, Baio J, Rice C. Examination of the time between first evaluation and first autism spectrum diagnosis in a population-based sample. *J Dev Behav Pediatr.* 2006;27(2 Suppl):S79-87.

180. Borrelli B, Sepinwall D, Ernst D, et al. A new tool to assess treatment fidelity and evaluation of treatment fidelity across 10 years of health behavior research. *J Consult Clin Psychol.* 2005;73(5):852-860.

181. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. *Evidence-based medicine: How to practice and teach EBM (2nd Edition).* Edinburg, UK: Churchill Livingstone; 2000.

182. Sweeney K, Macauley D, Gray D. Personal significance: The third dimension. *Lancet.* 1998;351(9096):134-136.

183. Sweeney K. *Complexity in primary care: Understanding its value.* Oxford, UK: Radcliffe Publishing; 2006.

184. Moore T. *Towards a model of evidence-informed decision making and service delivery.* Parkville, Victoria: Centre for Community Child Health, Murdoch Children’s Research Institute;2016.

185. Vargas-Barón E, Small J, Wertlieb D, Hix-Small H, Gómez Botero R, Diehl K, Vergara P, Lynch P. *Global Survey of Inclusive Early Childhood Development and Early Childhood Intervention Programs*. Washington, DC: RISE Institute; 2019

186. OCEBM Levels of Evidence Working Group. *The Oxford Levels of Evidence 2*. Retrieved from https://www.cebm.net/index.aspx?o=5653. Published 2016.

187. Iorio A, Spencer FA, Falavigna M, et al. Use of GRADE for assessment of evidence about prognosis: Rating confidence in estimates of event rates in broad categories of patients. *BMJ.* 2015;350:h870.

188. Jackman M, Novak I, Lannin N. Effectiveness of hand splints in children with cerebral palsy: A systematic review with meta-analysis. *Dev Med Child Neurol.* 2014;56(2):138-147.

189. Novak I, McIntyre S. The effect of education with workplace supports on practitioners' evidence-based practice knowledge and implementation behaviours. *Aust Occup Ther J.* 2010;57(6):386-393.

190. Novak I, McIntyre S, Morgan C, et al. A systematic review of interventions for children with cerebral palsy: State of the evidence. *Dev Med Child Neurol.* 2013;55(10):885-910.

191. Novak I. Evidence to practice commentary: The evidence alert traffic light grading system. *Phys Occup Ther Pediatr.* 2012;32(3):256-259.

192. Coe C, Gibson A, Spencer N, Stuttaford M. Sure start: Voices of the 'hard-to-reach'. *Child Care Health Dev.* 2008;34(4):447-453.

193. Hackworth NJ, Matthews J, Westrupp EM, et al. What influences parental engagement in early intervention? Parent, program and community predictors of enrolment, retention and involvement. *Prev Sci.* 2018;19(7):880-893.

194. Cortis N, Katz I, Patulny R. *Engaging hard-to-reach families and children: Stronger Families and Communities Strategy 2004–2009.* Canberra, ACT: Department of Families, Housing, Community Services and Indigenous Affairs, Australian Government; 2009.

195. Evangelou M, Coxon K, Sylva K, Smith S, Chan LLS. Seeking to engage "hard-to-reach" families: Towards a transferable model of intervention. *Child Soc.* 2013;27(2):127-138.

196. Boag-Munroe G, Evangelou M. From hard to reach to how to reach: A systematic review of the literature on hard-to-reach families. *Res Pap Educ.* 2012;27(2):209-239.

197. Australian Institute of Family Studies. Playgroups outcomes measurement matrix. Retrieved from https://aifs.gov.au/cfca/sites/default/files/playgroups_outcomes_measurement_matrix_with_explanatory_notes_0.pdf. Published 2017.

198. Oakley A, Strange V, Bonell C, Allen E, Stephenson J. Process evaluation in randomised controlled trials of complex interventions. *BMJ.* 2006;332(7538):413-416.

199. Plant AJ. *Migrant health review: Speaking for health.* Joondalup, W.A: Multicultural Access Unit; 2000.

200. Australian Bureau of Statistics. 3412.0 - Migration, Australia, 2016-17 3412.0 - Migration, Australia, 2016-17 http://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/3412.0. Published 2018. Accessed 04/02/2019.

201. Law M, King S, Stewart D, King G. The perceived effects of parent-led support groups for parents of children with disabilities. *Phys Occup Ther Pediatr.* 2001;21(2-3):29-48.

202. Williams K, Berthelsen D, Nicholson JM, Walker S, Abad V. The effectiveness of a short-term group music therapy intervention for parents who have a child with a disability. *J Music Ther.* 2012;49(1):23-44.

203. Wright M, Lin A, O'Connell M. Humility, inquisitiveness, and openness: Key attributes for meaningful engagement with Nyoongar people. *Advan Mental Health.* 2016;14(2):82-95.

204. Wright M, O'Connell M. Negotiating the right path: Working together to effect change in healthcare service provision to Aboriginal peoples. *Action Learn Action Res J.* 2015;21(1):108-123.

205. Cumming T, Wong S. *SDN PlayLinks: Dimensions of a Relationships-Based Services: The Fifth of Eight Reports Investigating SDN's Child, Family and Children's Services Programs*. Sydney, NSW: SDN Children's Services Inc; 2008.

206. ARTD Consultants Australia. *Evaluation of the playgroup program: Final report*. Brunswick, Victoria: Department of Families, Housing and Community Services and Indigenous Affairs; 2008.

207. Matthews J, Kendall T, Plowman K. *Playgroup research agenda.* Victoria, Australia: Parenting Research Centre, Playgroup Victoria; 2009.

208. Ericksen J, Loughlin E, Holt C, et al. A therapeutic playgroup for depressed mothers and their infants: Feasibility study and pilot randomised trial of community HUGS. *Infant Ment Health J.* 2018;39(4):396-409.

209. Early Childhood Intervention Australia. *The Possibility Project.* Sydney, NSW: Early Childhood Intervention Australia;2019.

210. Currie J, Lin W. Chipping away at health: More on the relationship between income and child health. *Health Aff (Millwood).* 2007;26(2):331-344.

211. Nyström ME, Karltun J, Keller C, Andersson Gäre B. Collaborative and partnership research for improvement of health and social services: Researcher's experiences from 20 projects. *Health Res Policy Syst.* 2018;16(1):46.

212. Redwood S, Brangan E, Leach V, Horwood J, Donovan JL. Integration of research and practice to improve public health and healthcare delivery through a collaborative 'Health Integration Team' model: A qualitative investigation. *BMC Health Serv Res.* 2016;16(1):201.

213. Walshe K, Davies HT. Health research, development and innovation in England from 1988 to 2013: From research production to knowledge mobilization. *J Health Serv Res Policy.* 2013;18(3 Suppl):1-12.

214. Hayes SA, Watson SL. The impact of parenting stress: A meta-analysis of studies comparing the experience of parenting stress in parents of children with and without autism spectrum disorder. *J Autism Dev Disord.* 2013;43(3):629-642.

215. Hassall R, Rose J, McDonald J. Parenting stress in mothers of children with an intellectual disability: The effects of parental cognitions in relation to child characteristics and family support. *J Intellect Disabil Res.* 2005;49(6):405-418.

216. Callanan J, Ronan K, Signal T. Activating parents in early intervention: Preliminary findings from an empirical case study. *Intl J Disabil Dev Educ.* 2019:1-17.

217. Dunn W, Cox J, Foster L, Mische-Lawson L, Tanquary J. Impact of a contextual intervention on child participation and parent competence among children with autism spectrum disorders: A pretest–posttest repeated-measures design. *Am J Occ Ther.* 2012;66(5):520-528.

218. Oelofsen N, Richardson P. Sense of coherence and parenting stress in mothers and fathers of preschool children with developmental disability. *J Intellect Dev Disabil.* 2006;31(1):1-12.

219. Hsiao Y-J. Parental stress in families of children with disabilities. *Interv Sch Clin.* 2017;53(4):201-205.

220. van Rijen EHM, Gasanova N, Boonstra AM, Huijding J. Psychometric qualities of the Short Form of the Self-efficacy for Parenting Tasks Index-Toddler Scale. *Child Psychiatry Hum Dev.* 2014;45(4):443-455.

221. Wittkowski A, Garrett C, Calam R, Weisberg D. Self-report measures of parental self-efficacy: A systematic review of the current literature. *J Child Fam Stud.* 2017;26(11):2960-2978.

222. King G, McDougall J, Palisano RJ, Gritzan J, Tucker MA. Goal attainment scaling: Its use in evaluating, pediatric therapy programs. *Phys Occup Ther Pediatr.* 1999;19(2):31-52.

223. Lifter K, Arzamaraski C, McClure E. Overview of play: Its uses and importance in early intervention/early childhood special education, *Infants Young Child,* 2011;24 (3), 225-245.

224. Kent C, Cordier R, Joosten A, Wilkes-Gillan S, Bundy A, Speyer R. A systematic review and meta-analysis of interventions to improve play skills in children with autism spectrum disorder. *JADD*. 2020; 7: 91-118.

225. Sandall S, Hemmeter M L, McLean M E, Smith BJ. *DEC Recommended Practices: A Comprehensive Guide for Practical Application in Early Intervention/Early Childhood Special Education*. Longmont, CO: Sopris West;2005.

226. Bundy AC, Nelson L, Metzger M, Bingaman K. Validity and reliability of a test of playfulness. *OTJR. 2001;* 21(4): 276-292.

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APPENDICES

Appendix A Researcher Profile

Jodie Armstrong

- PhD Candidate, Curtin University, School of Occupational Therapy, Social Work and Speech Pathology
- Research Fellow, Western Australian Health Translation Network (WAHTN)
- Occupational Therapist, Child Development Services

Areas of research

Early intervention service delivery, therapeutic playgroups, developmental delay, developmental coordination disorder and postnatal depression. Jodie completed a Stanford University 'Medical Statistics' online course in 2013 with a distinction and completed the Systematic Review course run by Perth Children's Hospital under the guidance of Professor Catherine Elliott, Professor Sonya Girdler and Dr Roz Ward.

Qualifications

- Bachelor of Science (Occupational Therapy)
- Honours (First Class): Piloting a Self-Management Program: A Complex Intervention for Postnatal Depression in a Mother and Baby Unit

Positions

Paediatric Occupational Therapist: Jodie has worked clinically as a paediatric occupational therapist for over 10 years. She has experience working privately and publicly and has been employed at the Child Development Service since 2010.

Senior Research Officer: In 2013 and 2014 Jodie was employed as a Senior Research Officer at the Child Development Service as part of a Telethon Kids Institute funding project called 'Emerging Trends.' This research examined the Child Development Service current model and service delivery principles and provided recommendations for service redesign. In her role, Jodie conducted a scoping review on best practice principles in early intervention and consulted with Child Development Service consumers, staff and policy makers. This research formed the basis of this doctorate.

Research Coordinator: Jodie was the research coordinator of Developmental Occupational Therapy Incorporated W.A. for over two years, and has been involved with research collaborations with The University of Western Australia's School of Sport Science, to provide interventions for children with Developmental Coordination Disorder.

Grant support in the past 5 years

Jodie has obtained four scholarships and one early career research fellowship:

- Australia Government Postgraduate Scholarship: $52,576
- Curtin University Postgraduate Top up Scholarship: $12,000
- Perth Children's Hospital Postgraduate Top up Scholarship: $24,000
- Collaborate for Kids (CoLab) Telethon Kids Institute Postgraduate Scholarship: $30,000
- Western Australian Health Translation Network (WAHTN) Early Career Research Fellowship: $180,000

Appendix B Conference Abstracts

Applying knowledge translation to tailor therapy services to address consumer needs

Armstrong, J., Wray, J., Davidson, E., Mizen, J., Girdler, S., Elliott, C. (2019) Applying knowledge translation to tailor therapy services to address consumer needs. Accepted for presentation at the Child Health Symposium, Perth, November 2019.

Background and aim: Embedded in the Child Development Services (CDS), this study was initiated in response to family's desire to have earlier access to therapy and connect with other families when first referred to the service. Playgroups were suggested by CDS consumers and staff as a potential solution to meet family's information and social needs during this time. Despite the prevalence of playgroups within the Australian community, research on playgroup effectiveness is limited by inconsistent definitions and practice principles. This study aimed to synthesise playgroup knowledge and develop, implement and evaluate a therapeutic playgroup for CDS families.

Research method: Applying a Knowledge to Action framework this six-stage study synthesised playgroup knowledge by conducting a scoping review of playgroup literature and consulting with parents (n=23) and professionals (n=40). The Learn, Engage and Play (LEaP) playgroup was then developed in collaboration with a working group of CDS staff and consumers (n=12) and evaluated using a feasibility study (n=8), randomised control trial (RCT) and process evaluation.

Results: This study created new playgroup knowledge, clarifying therapeutic playgroup practice principles and manualising the LEaP playgroup for young children with significant developmental delays. While there was no significant difference between families receiving LEaP and those receiving usual care on the primary outcome measure (parenting stress), those attending LEaP demonstrated significant improvements on the secondary outcomes of family support and child goal achievement.

Conclusion: Knowledge translation frameworks can support the partnership of research institutes and health services to address consumer identified needs and develop tailored evidence-based interventions that can be translated into usual care.

Learn, Engage and Play (LEaP) Study: Evaluating the effectiveness of a therapeutic playgroup for children with developmental delay

Armstrong, J., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2019). Learn, Engage and Play (LEaP) Study: Evaluating the effectiveness of a therapeutic playgroup for children with developmental delay. Presentation for the International Society of Early Intervention Conference, Sydney, June 2019.

Background: Playgroups serve as an important engagement model for vulnerable families accessing early intervention services for their child with developmental delay yet there is limited research defining and evaluating therapeutic playgroups.

Aim: This consumer driven six-phase study followed the Medical Research Council Framework for the Development and Evaluation of Complex Interventions to develop and evaluate the effectiveness of therapeutic playgroups.

Methods: A scoping review was undertaken and then 84 consumers, practitioners and community members were consulted to identify the definition and practice principles of therapeutic playgroups. A pilot (n=8) and a randomised control trial (n=71) were then conducted to examine playgroup efficacy with qualitative and quantitative data informing on playgroup feasibility and acceptability.

Results: Findings revealed playgroups are underpinned by family-centred practice, self-efficacy theory and peer support theory proving an effective intervention model for children with developmental delay and significantly improving parents perceived helpfulness of early intervention services.

Title: The Learn, Engage and Play (LEaP) study: The development and evaluation of a therapeutic playgroup for children with developmental delay

Armstrong, J., Girdler, S., Wray, J., Davidson, E., Mizen, J., &. Elliott, C. (2019). The Learn, Engage and Play (LEaP) Study: The development and evaluation of a therapeutic playgroup for children with developmental delay. For presentation at the Science on the Swan, Perth, June 2019.

Introduction: Playgroups are a community-based model embedded in prevention and early intervention framework and attended by over 200,000 Australian families. In recent years, playgroups have gained attention as an effective 'soft entry' model to engage vulnerable families accessing early intervention services. Despite their prevalence inconsistent playgroup definitions and practice principles have impeded rigorous playgroup research. This consumer driven study aimed to systematically define, develop and evaluate a therapeutic playgroup for children referred to the publicly funded, Child Development Service.

Methods: Adopting the Medical Research Council Framework for the Development of Complex Interventions this six-phase study comprised of: i) identifying playgroup practice principles by conducting a scoping review and consulting with caregivers (n=23) and health professions (n=40); ii) developing and manualising the playgroup protocol with a working group of professionals and caregivers (n=12); iii) pilot testing the playgroup for feasibility and acceptability (n=8); and iv) conducting a randomised control trial to evaluate playgroup efficacy (n=71).

Results: Therapeutic playgroups are underpinned by family-centred practice and peer support theory and require a complex interplay of participant, service provider and intervention characteristics to be effective. The study resulted in a manualised playgroup targeted to children aged 18 months to 36 months presenting with multiple development delays when referred to the Child Development Service. Findings revealed the playgroup was highly valued by families and associated with significantly better child outcomes (p=0.005) and family support (p=0.029) compared to standard care.

Conclusion: This is the first study to systematically develop and evaluate a therapeutic playgroup, facilitating further empirical research into evidence-based playgroups. While study outcomes have immediate implications for families accessing the Child Development Service, it also contributes to our understanding about the role playgroups have in facilitating child and parent outcomes and provides the first evidenced protocol for how to develop and deliver effective playgroups.

Informing an early intervention model for children at risk of Autism Spectrum Disorder and other developmental disabilities

Armstrong, J., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2019). Informing an early intervention model for children at risk of Autism Spectrum Disorder and other developmental disabilities. Poster presentation for the International Society for Autism Research, Montreal, May 2019.

Background: Therapeutic playgroups are increasingly recognised as an important engagement point for vulnerable families accessing early intervention services for their children at risk of Autism Spectrum Disorder (ASD) and other developmental disabilities. However, there is currently no clear description and specification for best practice in playgroup intervention which impedes effective playgroup implementation and evaluation. Researchers state inconsistent playgroup definitions, models and practice principles have hindered playgroup implementation and evaluation, calling for a common definition of playgroups components and identify the 'active ingredients' of playgroups to strengthen the evidence base for playgroup effectiveness. Therefore, the systematic development and evaluation of playgroups is novel and important to establish evidence-based practice with findings being directly beneficial to children at risk of Autism Spectrum Disorder and other developmental disabilities.

Objectives: This study aimed to address a substantial evidence gap by providing a clear definition of therapeutic playgroups and playgroup practice principles that produce the most efficacious outcomes for children at risk of developmental disabilities and their families.

Methods: Using the Medical Research Council Framework for the Development and Evaluation of Complex Interventions this study identified the 'active ingredients' of therapeutic playgroups. Initially, a scoping review was conducted to identify the evidence base for therapeutic playgroups. Secondly, parents (n=23) and health professionals (n=40) were consulted as stakeholders, and defined the 'active ingredients' of playgroup intervention and theory. Finally, findings were triangulated to identify an overarching theoretical framework, modelling therapeutic playgroup process and evaluation.

Results: Therapeutic playgroups require a complex interplay of service provider (facilitator qualities), participant (shared experiences and social networking) and intervention characteristics (format, physical resources and information provision). The overarching frameworks that defined therapeutic playgroup intervention was family-centred practice, self-efficacy theory and peer support theory.

Conclusion: These findings provide a definition of evidence-based therapeutic playgroups with a clear description of the program, including theoretical frameworks, essential functions of the program and performance assessment. The program description enables the active ingredients to be taught, learned and implemented with good outcomes. Findings also contribute to our understanding about the role playgroups have in facilitating child and parent outcomes in children at risk of ASD, whilst providing a protocol for how to develop and deliver effective playgroups which has implications nationally and international.

This study is the first to develop a therapeutic playgroup intervention framework using the Medical Research Council Framework, a critical step in establishing evidence-based therapeutic playgroups for children and their families at risk of ASD and other developmental disabilities.

The role of therapeutic playgroups in targeting children and family needs when first referred to early intervention services

Armstrong, J., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2019). The role of therapeutic playgroups in targeting children and family needs when first referred to early intervention services. Presentation for the Early Childhood Learning and Development Conference, Perth, March 2019.

Background and aim: Therapeutic playgroups are increasingly recognised as an important engagement point for vulnerable families accessing early intervention services for their children at risk of disability. The aim of the study was to develop and evaluate a therapeutic playgroup intervention as a new service model for children and families accessing the Child Development Services. The concept of a therapeutic playgroup was raised by both consumers and staff as a model of early contact for caregivers to access information, obtain support from professionals and facilitate parent networking.

Research method: This six-phase project aimed to develop and evaluate a therapeutic playgroup model for children with developmental delays when first referred to an early intervention service. The first three phases involved conducting a scoping review of playgroup literature and consulting with staff and consumers to identify the definition and practice principles of therapeutic playgroups. In phase four, findings were used to develop a playgroup protocol in conjunction with a working group of consumers and professionals. Phases five and six involved conducting a pilot trial and a randomised control trial to determine if playgroups are an effective and economically sustainable service delivery option for the CDS.

Results: This is the first study to systematically define, develop and evaluate a therapeutic playgroup for children with developmental delays. Study findings revealed therapeutic playgroups can serve as an effective early model of contact for children and families referred to early intervention services.

Conclusion: Study outcomes have immediate implications for families accessing early intervention services, contributing to our understanding about the role playgroups have in facilitating child and parent outcomes and provides the first evidenced protocol for how to develop and deliver effective playgroups. This has national and international implications. In regional and remote Australian communities, where access to therapy services is limited this model has the potential to provide families with timely and regular developmental support within their local community, a model researchers and policy makers have long been advocated for.

Defining therapeutic playgroups: The development and evaluation of therapeutic playgroups using the Medical Research Council Framework for Complex Interventions

Armstrong, J, Girdler, S, Elliott, C, Wray, J, Davidson, E & Mizen, J. (2018) Defining therapeutic playgroups: The development and evaluation of therapeutic playgroups using the Medical Research Council Framework for Complex Interventions. Presentation for the Child Health Symposium, Perth, November 2018.

Background and aim: Therapeutic playgroups are increasingly recognised as an important engagement point for vulnerable families accessing early intervention services for their children at risk of disability. However, there is currently no clear description and specification for best practice in playgroup intervention which impedes effective playgroup implementation and evaluation. This study aimed to address this evidence gap by identifying the definition and practice principles of therapeutic playgroups.

Research method: Following the Medical Research Council Framework for the Development of Complex Interventions, a scoping review was first conducted to identify the evidence base for therapeutic playgroups. Parents (n=23) and health professionals (n=40) were then consulted as stakeholders, and defined the 'active ingredients' of playgroup intervention and theory. Finally, findings were triangulated to identify an overarching theoretical framework, modelling therapeutic playgroup process and evaluation

Results: Therapeutic playgroups require a complex interplay of service provider (facilitator qualities), participant (shared experiences and social networking) and intervention characteristics (format, physical resources and information provision). The overarching frameworks defining playgroups were family-centred practice, self-efficacy theory and peer support theory.

Conclusion: These findings provide a definition of evidence-based therapeutic playgroups with a clear description of the program, including theoretical frameworks and essential program functions. The program description enables the 'active ingredients' to be taught, learned and implemented with good outcomes.

This study is the first to develop a therapeutic playgroup intervention framework using the Medical Research Council Framework, a critical step in establishing evidence-based playgroups for children at risk of disability and their families.

The power of playgroups: Parents experiences of attending therapeutic and supported playgroups

Armstrong, J., Elliott, C., Wray, J., Davidson, E., Mizen, J., & Girdler, S. (2017). The power of playgroups: Parents experiences of attending therapeutic and supported playgroups. Presentation for the Occupational Therapy National Conference, Perth, July 2017.

Introduction: Therapeutic and supported playgroups are an intervention commonly employed in the community for children with developmental delays and/or disabilities and their families with the aim of increasing parent capacity and improving child outcomes. Yet there is limited research documenting parent's experiences and expectations of playgroups, specifically therapeutic playgroups. The importance of consumer engagement in research and health care development is well established which emphasises the need to actively engage parents to enable the development of relevant and effective therapeutic playgroups.

Objective: To explore the experiences of parents attending supportive or therapeutic playgroups with their child with a developmental delay or disability and identify perceived aspects of playgroups that enhance family engagement and outcomes.

Method: This study adopted a qualitative interpretive phenomenological approach. Participants were purposively recruited through early intervention centres and community agencies. Data was collected via three focus groups and seven individual in-depth interviews. Data was analysed using Colazzi's (1978) method of qualitative data analysis and member checks were undertaken to enhance theoretical validity.

Results: Twenty-three parents participated. Aspects that most strongly impacted on playgroup enjoyment and engagement were feeling comfortable; getting their information needs met; meeting other parents with shared experiences; and providing opportunities for child development and enjoyment.

Conclusion: Parent experiences of therapeutic and supported playgroups are layered and influenced by parent, facilitator and child characteristics. These findings continue to build the knowledge on therapeutic playgroups to enable further development of evidence-based playgroups that are relevant, meaningful and effective for children with developmental delay and disabilities and their families.

Defining the key elements of therapeutic playgroups from the perspective of professionals

Armstrong, J., Girdler, S., Elliott, C., Wray, J., Davidson, E., & Mizen, J. (2017). Defining the key elements of therapeutic playgroups from the perspectives of professionals. Presentation for the Occupational Therapy National Conference, Perth, July 2017

Introduction: Therapeutic playgroups are increasingly recognised as an important engagement point for vulnerable families in accessing early intervention services for their children. However, there is no 'blueprint' for best practice in playgroup intervention and a paucity of research. More research is needed to clearly define and identify the 'active ingredients' of therapeutic playgroups to enable knowledge translation and implementation of evidence-based practice.

Objective: This study aimed to use the perspectives of professionals to establish a definition of therapeutic playgroups and identify the 'active ingredients' of therapeutic playgroups.

Method: Focus groups were used to gather the perspectives of health care professionals experienced in facilitating supported or therapeutic playgroups for children with developmental disabilities and their families. Open coding was used to analyse data and member checks were conducted to enhance interpreters' validity.

Results: A total of 40 professionals participated in nine focus groups inclusive of occupational therapists; speech pathologists; physiotherapists; social workers; clinical psychologists; therapy assistants; child health nurses; teachers; and community support workers. Findings indicated therapeutic playgroups are a complex intervention which requires five core characteristics: facilitator, parent and family characteristics, playgroup structural characteristics, information provision and playgroup logistics and administration elements.

Conclusion: Therapeutic playgroups are considered beneficial for children with developmental disabilities and their families and have a distinct set of 'active ingredients' that distinguishes them from other therapeutic models. This paper is the first to identify active ingredients of efficacious therapeutic playgroup models, an integral step to establishing evidence-based therapeutic playgroups.

Defining therapeutic playgroups: The development and evaluation of therapeutic playgroups using the Medical Research Council Framework of Complex Interventions

Armstrong, J., Girdler, S., Elliott, C., Wray, J., Davidson, E., & Mizen, J. (2017). Defining therapeutic playgroups: The development and evaluation of therapeutic playgroups using the Medical Research Council Framework of Complex Interventions. Accepted for Presentation at the European Academy of Childhood Disability Conference Amsterdam, The Netherlands, May 2015.

Introduction: Therapeutic playgroups are increasingly recognised as an important engagement point for vulnerable families accessing early intervention services for their children at risk of disability. However, there is currently no clear description and specification for best practice in playgroup intervention which impedes effective playgroup implementation and evaluation.

Patients and methods: Using the Medical Research Council Framework for the Development and Evaluation of Complex Interventions this study identified the 'active ingredients' of therapeutic playgroups. Initially, a scoping review was conducted to identify the evidence base for therapeutic playgroups. Secondly, parents (n=23) and health professionals (n=40) were consulted as stakeholders, and defined the 'active ingredients' of playgroup intervention and theory. Finally, findings were triangulated to identify an overarching theoretical framework, modelling therapeutic playgroup process and evaluation.

Results: Therapeutic playgroups require a complex interplay of service provider (facilitator qualities), participant (shared experiences and social networking) and intervention characteristics (format, physical resources and information provision). The overarching frameworks that defined therapeutic playgroup intervention was family-centred practice, self-efficacy theory and peer support theory.

Conclusion: These findings provide a definition of evidence-based therapeutic playgroups with a clear description of the program, including theoretical frameworks, essential functions of the program and performance assessment. The program description enables the active ingredients to be taught, learned and implemented with good outcomes.

This study is the first to develop a therapeutic playgroup intervention framework using the Medical Research Council Framework, a critical step in establishing evidence-based therapeutic playgroups for children and their families at risk of disability.

What makes playgroups therapeutic? A scoping review to identify the 'active ingredients' of therapeutic and supported playgroups

Armstrong, J., Paskal, K., Elliott, C., Wray., J., Davidson, E., Mizen, J., Girdler., S. (2016). What makes playgroups therapeutic? A scoping review to identify the 'active ingredients' of therapeutic and supported playgroups. Presentation for the Australasian Society for Autism Research, Perth, December 2016.

Background: Therapeutic and supportive playgroups aim to support and strengthen vulnerable children and families by increasing parenting capacity, parent-child interaction, enhancing child outcomes and increasing community networks. Therapeutic playgroups are increasingly being recognised as an effective soft entry point for children with developmental difficulties. Many children that go on to be diagnosed with Autism Spectrum Disorder are recognised as being at risk of developmental delays. One of the possible early intervention options for these children is therapeutic playgroups. This review comprehensively scoped the literature to identify the most efficacious elements of supported and therapeutic playgroups.

Method: A systematic search of grey and scholarly literature was conducted using Medline, PyschINFO, EMBASE, ERIC, CINAHL, Mednar, Informit, Scopus, Libraries of Australia and Trove. Articles were included if they: i) defined playgroup as a group of children and actively involved caregivers; ii) described a therapeutic playgroup or supported playgroup model; iii) targeted children prior to school age; and iv) measured the effect of playgroups. A total of 27 articles met the inclusion criteria. Study quality was assessed and findings were analysed using an engagement framework based synthesis.

Results: The findings identified that emotional, practical and informational components are important active ingredients of playgroups. These strongly reflected family-centred practice, self-efficacy theory and peer-support principles.

Conclusion: Therapeutic and supported playgroups are complex interventions, with numerous interacting components that make them efficacious for children and families. This review is the first to identify the 'active ingredients' of playgroups and these findings inform the design of future playgroups for children with developmental difficulties and their families.

Appendix C Learn, Engage and Play (LEaP) Playgroup Manual Excerpt

Learn, Engage, and Play
(LEaP) Playgroup

Facilitator Manual

Government of Western Australia
Child and Adolescent Health Service

Curtin University

LEaP
Study

Citation: Armstrong, J., Elliott., C., Wray., J., Davidson., E., Mizen, J. Girdler, S., & Pieterse, B. (2017). Learn, Engage and Play (LEaP) Playgroup Facilitator Manual-Perth. The Child Development Service, Perth, Western Australia.

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ACKNOWLEDGEMENTS

LEARN, ENGAGE AND PLAY (LEAP) PLAYGROUP MODEL

PLAYGROUP RESOURCES

Acknowledgements

The project was a collaboration between Curtin University and the Child Development Service, Child and Adolescent Health Service, Western Australia.

We would like to to acknowledge the professionals and consumers from the Child Development Service and the broader Western Australian community that took time to provide input on core playgroup constructs and content.

Research Team

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LEaP Working Group

In the development of this manual we would like to acknowledge the significant contribution of the LEaP working group. This group comprised of two consumers and ten staff from Child Development Service that met monthly to provide input on playgroup content and program delivery. This project would not have been possible without each member of the team as are listed as follows; Bernadette Robinson, Bridget Pieterse, Elizabeth Watson, Jean Rutherford, Julie Anne Domingo, Justine Phillips, Leigh Dix, Lisa Roberts, Louise Dudley, Loman Timms, Rosalind Garside, Shannon Van Wyk and Jane Doyle.

Funders:

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Curtin University [Post Graduate Top up Scholarship]
Perth Children's Hospital Foundation Scholarship [Post Graduate Top up Scholarship]

Playgroup Model

Playgroup Cohort

The playgroup cohort was chosen based on Child Development Service (CDS) referral data to ensure content was tailored to the highest proportion of CDS referred children and families. The LEaP Playgroup has been developed to target:

- children aged 18 months to 36 months referred to and accepted into the Child Development Service
- children identified as being ‘at risk’ as measured by the Ages and Stages Questionnaire (ASQ-3) in communication and at least one other domain.

Playgroup Objectives

Aims

- Provide information to parents about child development and how to support development through play including:
    - the importance of play
    - parent-child interaction
    - early language facilitation.
- Provide opportunities for parents to connect with other parents, learn from other parents and share knowledge with other parents.
- Provide socialisation opportunities for children.
- Provide opportunities for children and parents to practice and master new skills.
- Link parents with community resources/services.

Outcome Statements

1. Families will increase their knowledge, skills and confidence to implement strategies to support their child’s development needs.
2. Families will feel respected and supported by the facilitators (and other parents) to develop, learn and share skills and strategies to address the developmental needs of their child.
3. Families will be made aware of relevant social and community support and agencies.
4. Children and parents will increase their skills and capabilities to play and participate meaningfully within their daily lives.

Structure

Routine

The LEaP playgroup structure follows a traditional playgroup routine and this will remain consistent for each session. The repetition of this routine is important and has been shown to be a key component of effective playgroups. Each session plan includes a selection of indoor and outdoor stations/activities. A minimum of 6 must be chosen by the facilitators and set up for the indoor stations and a minimum of 6 must be chosen and set up for the outdoor stations.

Playgroup Routine		
9.30-9.45	Parents and children welcomed. Free play at stations	• Indoor stations set up. Parent and children play with these whilst people arrive. • Facilitators individually welcome each parent and child. • Children put fruit in large fruit bowl close to the entry.
9.45-10.00	Group welcome, songs and book share	1. Introduce key message of the session 2. Songs 3. Book
10.00-10.30	Indoor stations/ activities	• Books • Puzzles • Threading • Playdough • Craft • Pretend play • Cosy Corner • Junk construction • Cars, transport, blocks. • Nesting cups and stacking rings • Tongs/tweezers • Matching • Posting • Rice/tactile play • Conceptual task

10.30–11.00	Snack Time	1. Song: 'Pack away' song
		2. Snack time
		  • Children and parents to sit together.
		  • Parents offered cup of tea/coffee and children eat fruit/vegetables.
		  • Key message discussed with group.

11.00–11.25	Outdoor stations/activities	• Messy/tactile play • Active play • Water play • Painting • Obstacle course • Bubble bucket

11.25-11.30	Singing and final goodbye.	1. Songs: 'Pack away' song, 'Farewell' song 2. Encourage parents to complete home practice sheets. 3. Inform content for next week.

Themes

Playgroup will have a consistent routine but incorporate different weekly themes. Themes will be reflected in the craft activities, books and playdough toys.

Session 1: Animals- Farm	Session 5: Food 1
Session 2: Animals- Wild/Zoo	Session 6: Food 2
Session 3: Transport 1	Session 7: Clothing
Session 4: Transport 2	Session 8: Party

Playgroup Content

The playgroup content was developed in close consultation with the LEaP working group of CDS staff and consumers. The working group felt the information needs of parents entering a service can be varied and felt a range of information should be provided. These included: key messages, generic information and optional topics.

Key Messages

The key messages were identified as the important concepts for children and families to learn when first referred to CDS. With consideration to the age and clinical presentation of the LEaP target cohort, the core information to be covered includes:

- Early language facilitation strategies
- Parent-child relationship strategies

Play will be emphasised as being the context in which parent-child relationship and communication strategies are applied and where other skills can be targeted.

	Key messages	Information
1	Importance of play and different types of play	*Aim* • For parents to become more aware of the types of play their child enjoys and doesn't enjoy. • For parents to become more aware of how they play with their child and what strengths and challenges they have in interacting and playing with their child. • For parents to join in and play with their child. *Key message* Children learn best when playing and having fun interacting with you. To extend your child's skills within play it's important to discover and become aware of: • the types of play your child enjoys and doesn't enjoy • the types of play you enjoy and least enjoy with your child • joining in and playing with your child. *Poster* Notice: • what your child likes to play with • how your child plays with toys that interest them • whether your child engages in different types of play. Notice the sort of play: • you enjoy most with your child • you find more difficult or challenging to enjoy with your child.

Generic Information

As part of the playgroup program parents will have access to general information inclusive of:

- Community resources/services
- Developmental stages: knowing what is the next skill and what to do to get there
- Child Development Service:
  - Available services and therapies
  - Parent Information Workshops

Information will be presented using handouts, activity related cue cards and embedded in individual and group discussion.

Optional Topics

Parents will be provided with an opportunity to indicate what routine based topics they want covered in the playgroup content. Prior to starting playgroups, parents will be asked to set goals and identify what routine based content they want covered in Session 7 inclusive of:

- Mealtimes
- Sleep
- Toileting
- Dressing skills
- Screen time

Method of Information Provision

Information is provided in a range of formats throughout the playgroup to allow flexibility for each parent and family to access the specific information they need.

Information will be presented in the following formats:

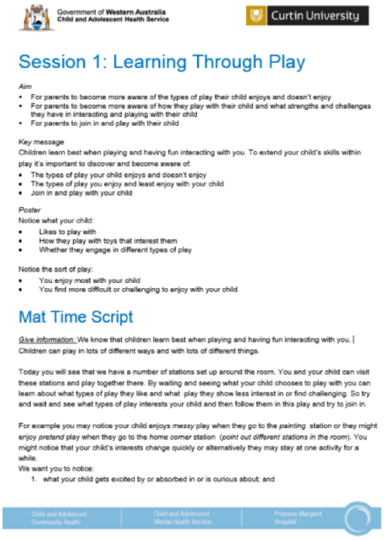
General information (G):	Facilitator presents to whole group
Modelling (M):	Facilitator models to parent or whole group
Individualised information (I):	Facilitator has individual discussion with parent
Group discussion (D):	Facilitator attempts to encourage group discussion
Written information (W):	Information is presented in written format

Structure		**Format of Information Provision**
9.30-9.45	Parents and children welcomed. Free play on stations	***(W):*** Key message is written on wall poster and stays up throughout session.
9.45- 10.00	Group welcome, songs and book share.	***(G):*** During the mat session, the facilitator draws the group's attention to key message pointing to poster and giving a brief overview, indicating why it is important and how to implement. ***(M):*** During group exercise the facilitator models key message and makes its explicit.
10.00-10.30	Indoor stations/ activities	***(I):*** Facilitator discusses key strategies individually with parents. ***(W):*** Facilitator writes specific strategies on home practice sheet for parents. ***(M):*** Facilitator models key strategy individually with parent/child.
10.30-11.00	Snack Time	***(D):*** Parents settle children into snack time (5-10mins). Parents and children sit around a table and facilitator/s tries to lead 5-minute discussion on key message/strategy and encourage parent information sharing (5-10min). Time put aside for parent only discussion without the facilitator (10 minutes–not expected to be related to key topic).
11.00-11.25	Outdoor stations/activities	***(I):*** Facilitator discusses key strategies individually with parents. ***(W):*** Facilitator writes specific strategies as discussed with parents on home practice sheet.
11.25-11.30	Singing and final goodbye	***(W):*** Parents are given the opportunity to write down additional ideas on home practice sheet.

Resources

Session Scripts

Scripts comprise of session aims, key messages, full scripts and a summary script for mat time and morning tea group discussions.



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Session 1: Learning Through Play

Aim

- For parents to become more aware of the types of play their child enjoys and doesn't enjoy
- For parents to become more aware of how they play with their child and what strengths and challenges they have in interacting and playing with their child
- For parents to join in and play with their child

Key message

Children learn best when playing and having fun interacting with you. To extend your child's skills within play it's important to discover and become aware of:

- The types of play your child enjoys and doesn't enjoy
- The types of play you enjoy and least enjoy with your child
- Join in and play with your child

Poster

Notice what your child:

- Likes to play with
- How they play with toys that interest them
- Whether they engage in different types of play

Notice the sort of play:

- You enjoy most with your child
- You find more difficult or challenging to enjoy with your child

Mat Time Script

Give information: We know that children learn best when playing and having fun interacting with you. Children can play in lots of different ways and with lots of different things.

Today you will see that we have a number of stations set up around the room. You and your child can visit these stations and play together there. By waiting and seeing what your child chooses to play with you can learn about what types of play they like and what play they show less interest in or find challenging. So try and wait and see what types of play interests your child and then follow them in this play and try to join in.

For example you may notice your child enjoys *messy* play when they go to the *painting* station or they might enjoy *pretend* play when they go to the *home corner* station (*point out different stations in the room*). You might notice that your child's interests change quickly or alternatively they may stay at one activity for a while.

We want you to notice:

1. what your child gets excited by or absorbed in or is curious about; and

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Posters

Posters summarise key messages in dot points and are designed to be placed on the wall for use in group discussions. A copy is also on the back of each home practice sheet.

Recognising How Children Communicate

Why is this important?

Children communicate in many ways and the way you notice and respond to their communication is key to their learning. It important to understand and practise:

- Waiting and paying attention to your child's communication attempts
- Responding in a way to encourage communication

How to do it

- Give your child time to start an interaction, wait quietly and keep your attention on your child
- Notice how they try to communicate (e.g. talking pointing, or looking)
- Respond by:
  - Copying what your child is doing
  - Joining in their play

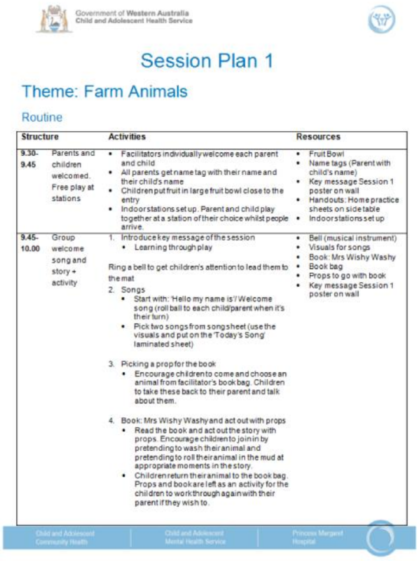
Try to Avoid

- Anticipating your child's needs…Wait for them to tell you what they want.

LEaP Study

Session Plans

Session plans outline all activities and resources required for the playgroup session.



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Session Plan 1

Theme: Farm Animals

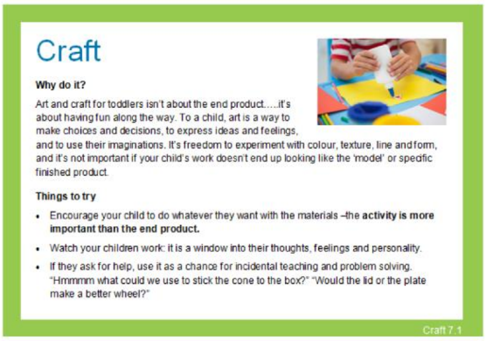
Routine

Structure		Activities	Resources
9.30-9.45	Parents and children welcomed. Free play at stations	• Facilitators individually welcome each parent and child • All parents get name tag with their name and their child's name • Children put fruit in large fruit bowl close to the entry • Indoor stations set up. Parent and child play together at a station of their choice whilst people arrive.	• Fruit Bowl • Name tags (Parent with child's name) • Key message Session 1 poster on wall • Handouts: Home practice sheets on side table • Indoor stations set up
9.45-10.00	Group welcome song and story + activity	1. Introduce key message of the session • Learning through play Ring a bell to get children's attention to lead them to the mat 2. Songs • Start with: 'Hello my name is'/ Welcome song (roll ball to each child/parent when it's their turn) • Pick two songs from song sheet (use the visuals and put on the 'Today's Song' laminated sheet) 3. Picking a prop for the book • Encourage children to come and choose an animal from facilitator's book bag. Children to take these back to their parent and talk about them. 4. Book: Mrs Wishy Washy and act out with props • Read the book and act out the story with props. Encourage children to join in by pretending to wash their animal and pretending to roll their animal in the mud at appropriate moments in the story. • Children return their animal to the book bag. Props and book are left as an activity for the children to work through again with their parent if they wish to.	• Bell (musical instrument) • Visuals for songs • Book: Mrs Wishy Washy • Book bag • Props to go with book • Key message Session 1 poster on wall

Child and Adolescent Community Health | Child and Adolescent Mental Health Service | Princess Margaret Hospital

Cue Cards

Cue cards provide additional information and ideas related to each activity. These are laminated and stuck close to activities.



Craft

Why do it?

Art and craft for toddlers isn't about the end product.....it's about having fun along the way. To a child, art is a way to make choices and decisions, to express ideas and feelings, and to use their imaginations. It's freedom to experiment with colour, texture, line and form, and it's not important if your child's work doesn't end up looking like the 'model' or specific finished product.

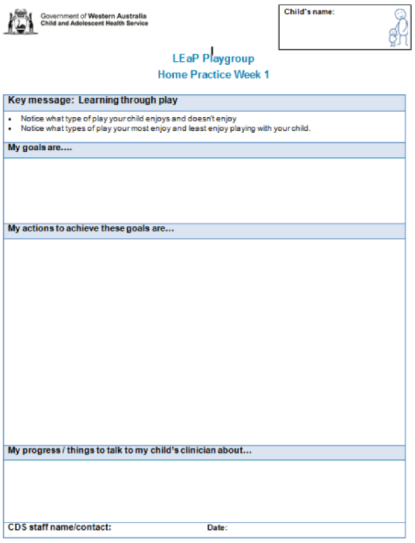
Things to try

- Encourage your child to do whatever they want with the materials –the **activity is more important than the end product.**
- Watch your children work: it is a window into their thoughts, feelings and personality.
- If they ask for help, use it as a chance for incidental teaching and problem solving. "Hmmmm what could we use to stick the cone to the box?" "Would the lid or the plate make a better wheel?"

Craft 7.1

Home practice sheets

This two-sided handout has room for individually discussed goals and strategies to be written on one side with the key message poster on the other side.



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Child's name:

LEaP Playgroup
Home Practice Week 1

Key message: Learning through play

- Notice what type of play your child enjoys and doesn't enjoy
- Notice what types of play your most enjoy and least enjoy playing with your child.

My goals are....

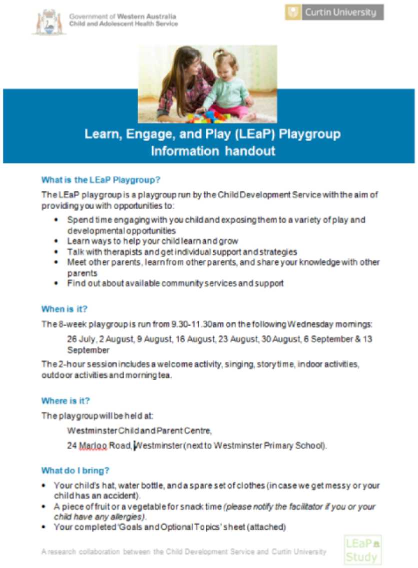
My actions to achieve these goals are...

My progress / things to talk to my child's clinician about...

CDS staff name/contact: **Date:**

'Welcome to playgroup' handout

This handout provides introductory information for parents on the playgroup session structure, key messages, location and playgroup facilitator's contact details.



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Learn, Engage, and Play (LEaP) Playgroup
Information handout

What is the LEaP Playgroup?

The LEaP playgroup is a playgroup run by the Child Development Service with the aim of providing you with opportunities to:

- Spend time engaging with you child and exposing them to a variety of play and developmental opportunities
- Learn ways to help your child learn and grow
- Talk with therapists and get individual support and strategies
- Meet other parents, learn from other parents, and share your knowledge with other parents
- Find out about available community services and support

When is it?

The 8-week playgroup is run from 9.30-11.30am on the following Wednesday mornings:

26 July, 2 August, 9 August, 16 August, 23 August, 30 August, 6 September & 13 September

The 2-hour session includes a welcome activity, singing, story time, indoor activities, outdoor activities and morning tea.

Where is it?

The playgroup will be held at:

Westminster Child and Parent Centre,
24 Marloo Road, Westminster (next to Westminster Primary School).

What do I bring?

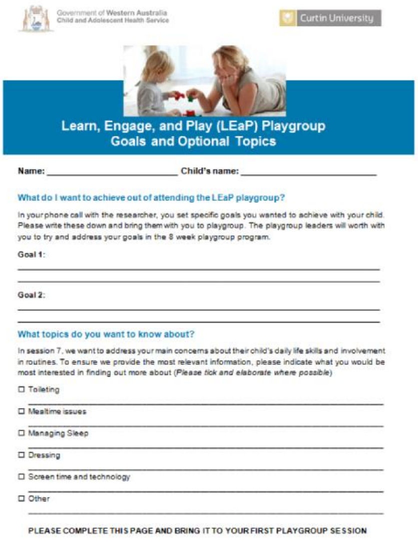
- Your child's hat, water bottle, and a spare set of clothes (in case we get messy or your child has an accident).
- A piece of fruit or a vegetable for snack time *(please notify the facilitator if you or your child have any allergies)*.
- Your completed 'Goals and Optional Topics' sheet (attached)

A research collaboration between the Child Development Service and Curtin University

LEaP Study

Goals and Optional Topics

This handout provides further information about key messages and has space for parents to write down goals and choose optional topics.



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Learn, Engage, and Play (LEaP) Playgroup
Goals and Optional Topics

Name: ______________________ **Child's name:** ______________________

What do I want to achieve out of attending the LEaP playgroup?

In your phone call with the researcher, you set specific goals you wanted to achieve with your child. Please write these down and bring them with you to playgroup. The playgroup leaders will worth with you to try and address your goals in the 8 week playgroup program.

Goal 1:

Goal 2:

What topics do you want to know about?

In session 7, we want to address your main concerns about their child's daily life skills and involvement in routines. To ensure we provide the most relevant information, please indicate what you would be most interested in finding out more about (*Please tick and elaborate where possible*)

☐ Toileting

☐ Mealtime issues

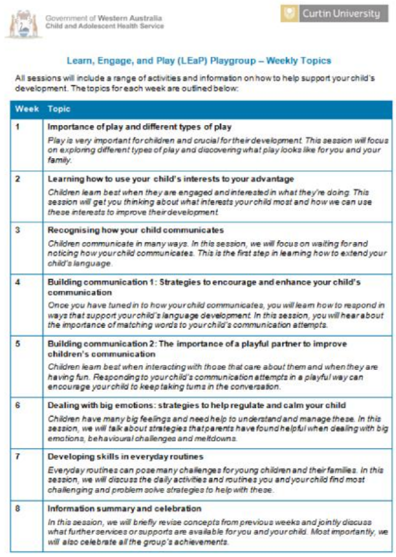
☐ Managing Sleep

☐ Dressing

☐ Screen time and technology

☐ Other

PLEASE COMPLETE THIS PAGE AND BRING IT TO YOUR FIRST PLAYGROUP SESSION



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Learn, Engage, and Play (LEaP) Playgroup – Weekly Topics

All sessions will include a range of activities and information on how to help support your child's development. The topics for each week are outlined below:

Week	Topic
1	**Importance of play and different types of play** *Play is very important for children and crucial for their development. This session will focus on exploring different types of play and discovering what play looks like for you and your family.*
2	**Learning how to use your child's interests to your advantage** *Children learn best when they are engaged and interested in what they're doing. This session will get you thinking about what interests your child most and how we can use these interests to improve their development.*
3	**Recognising how your child communicates** *Children communicate in many ways. In this session, we will focus on waiting for and noticing how your child communicates. This is the first step in learning how to extend your child's language.*
4	**Building communication 1: Strategies to encourage and enhance your child's communication** *Once you have tuned in to how your child communicates, you will learn how to respond in ways that support your child's language development. In this session, you will hear about the importance of matching words to your child's communication attempts.*
5	**Building communication 2: The importance of a playful partner to improve children's communication** *Children learn best when interacting with those that care about them and when they are having fun. Responding to your child's communication attempts in a playful way can encourage your child to keep taking turns in the conversation.*
6	**Dealing with big emotions: strategies to help regulate and calm your child** *Children have many big feelings and need help to understand and manage these. In this session, we will talk about strategies that parents have found helpful when dealing with big emotions, behavioural challenges and meltdowns.*
7	**Developing skills in everyday routines** *Everyday routines can pose many challenges for young children and their families. In this session, we will discuss the daily activities and routines you and your child find most challenging and problem solve strategies to help with these.*
8	**Information summary and celebration** *In this session, we will briefly revise concepts from previous weeks and jointly discuss what further services or supports are available for you and your child. Most importantly, we will also celebrate all the group's achievements.*

Session Plan 1

Theme: Animals- Farm

Routine

Structure		Activities	Resources
9.30-9.45	Parents and children welcomed. Free play at stations	- Facilitators individually welcome each parent and child - All parents get name tag with their name and their child's name - Children put fruit in fruit bowl - Indoor stations set up. Parent and child play together at a station of their choice whilst people arrive	- Fruit Bowl - Name tags (parent with child's name) - Key message Session 1 poster on wall - Handouts: Home practice Session 1 sheets (on side table)
9.45-10.00	Group welcome, songs and book share.	1. Introduce key message of the session - Learning through play Use musical instrument to get children's attention to lead them to the mat 2. Songs - Sing 'Welcome' song (roll ball to each child/parent when it's their turn). - Encourage children to pick two songs from song sheet (use the visuals and put on the 'Today's Song' laminated poster). 3. Picking a prop for the book - Encourage children to come and choose an animal from facilitator's book bag. Children to take these back to their parent and talk about them. 4. Book: 'Spot Goes to the Farm' and act out with props - Complete book share and act out the story with props. Encourage children to join in by matching their animal at certain parts of the story, make the animal sound. - Children return their animal to the book bag. Props and book are left as an activity for the children to work through again with their parent if they wish to.	- Musical instrument - Ball - Visuals for songs - 'Today's Songs' laminated poster - Book: 'Spot Goes to the Farm' - Book bag - Props to go with book - Key message Session 1 poster on wall
10.00-	Indoor stations/	1. Books	*Cue Card:* Book Sharing 10

Structure	**Activities**	**Resources**
10.30 activities *A minimum of 6 stations/activities need to be set up.*	- Books with photographs - Books with flaps: touch and feel - Simple sequence books - Nursery rhyme book - Everyday routine books (e.g. shopping/ bedtime)	*Other handouts:* DOT(WA) 'Book Sharing' *Resources:* books x 5 (consistent types of books- some with animal theme)
	2. Puzzles - Have a selection of puzzles available including: form boards (simple and complex), matching picture puzzles, 3-4 piece interlocking puzzles.	*Cue Cards:* Puzzles 1.1, Succeeding with Puzzles 1.2 *Resources:* puzzles x4
	3. Threading - Thread cut up paper roll with animal pictures onto the string.	*Cue Cards:* Threading 2.1, Threading Animals 2.2 *Resources*: cut up paper rolls with animal pictures, string.
	4. Playdough (Farm Animal Theme) - Emphasis on poking things in, banging, rolling and hiding things.	*Cue Cards:* Playdough 6.1, Playdough Ideas 6.2 *Resources:* playdough, rolling pin, plastic scissors, cutters, plastic knives, toy animals.
	5. Craft - Structured craft: creating and decorating a cotton wool sheep. - Unstructured craft: creating and decorating on blank paper.	*Cue Cards:* Craft 7.1, Cotton Wool Sheep Craft 7.2 *Other handouts:* - DOT(WA) 'Drawing and Writing in Everyday Activities' - DOT(WA) 'Drawing and Writing Fun' *Resources:* 'Cotton wool sheep' template, cotton wool, green paper strips, blank paper, crayons, glue, stickers, stamps.
	6. Nesting cups and stacking rings - Play with the nesting cups and stacking rings.	*Cue Card:* Nesting Cups and Stacking Rings 4 *Resources:* nesting cups, stacking rings.
	7. Pretend play - Encourage pretend play with toys.	*Cue Cards:* Blocks 8, Pretend Play 11, Encouraging Language 12 *Other handouts:* DOT(WA) 'Pretend Play' *Resources:* kitchen set, food, cars, trucks and trailer, dolls, blocks,

Structure		**Activities**	**Resources**
			puppets, dinosaurs, animals.
		8. Cosy Corner • Encourage people games using resources.	*Cue Card:* People Games 16 *Resources:* blanket, cushions, bubbles, streamers, balloons.
		9. Junk construction • Creative construction with the collection of junk resources.	*Cue Cards:* Junk Construction 9.1, Junk Construction Ideas 9.2 *Other handouts:* DOT(WA) 'Fun with Boxes' *Resources:* boxes, lids, blank paper, egg cartons, glue, sticky tape, string.
10.30-11.00	Snack Time	Consistent routine for children to follow before snack time • Sing 'Pack away' song, pack away indoor activities, push together tables, wash hands first and at the end wash plates and cups. Snack time • Children and parents to sit together • Parents offered cup of tea/coffee and children eat fruit/vegetables. • Key Message: Facilitator leads group discussion about key message and strategies whilst other facilitator interacts with the children. There is the potential for group activities to be completed, including: bubbles, balloon tap, parachute. • Facilitator leaves parent discussion and plays with children for 5-10 minutes to increase opportunity for parents to talk amongst themselves.	*Resources:* • Coffee/tea/milk • Coffee cups • Cut up fruit • Tongs • Water jug • Plastic cups • Plastic plates *The following could be used for a group activity:* • Bubbles • Balloons • Parachute
11.00-11.25	Outdoor stations/ activities *A minimum of 6 stations/activities need to be set up.*	1. Messy/tactile play • Use the washing station with a range of animal toys and dinosaurs.	*Cue Cards:* Messy Play 1, Washing Station 2.2 *Other handouts:* DOT(WA) 'Sensory Play' *Resources:* toy animals, toy dinosaurs, water, soap, paper towel/wash cloths.

Structure	**Activities**	**Resources**
	2. Painting • Structured painting: finger painting on the 'Paint the Pig' template. • Unstructured painting: finger painting on blank paper.	*Cue Card:* Finger Painting 3.2 *Resources:* 'Paint the Pig' template, paint, easel, blank paper, paint smocks, pegs.
	3. Active play stations *Any of the following can be completed:* • Jumping forward • Climbing frames • Tunnel • Trampoline • Ramp or slope • Steps or stairs • Stepping stones/ yellow pages • Animal walks – pictures of animals on a card for child to choose which animal to be • Assorted balls and a goal and/or basketball hoop.	*Cue Cards:* Jumping 5, Climbing Frames 6, Tunnels 7, Trampoline 8, Ramps and Slopes 9, Stairs and Steps 10, Stepping Stones 11, Animal Walks 12, Assorted Balls: Soccer and Basketball 13 *Resources:* climbing frames, tunnel, trampoline, ramp or slope, steps or stairs, stepping stones or yellow pages, assorted balls, goal and/or basketball hoop.
	4. Bubble bucket • Create and pop bubbles using the bubble mixture and fly swats.	*Cue Cards:* Bubble Bucket 4, People Games 14 *Resources:* fly swat, bubble mixture (detergent and water), bucket.
11.25-11.30 Singing and final goodbye.	• Sing 'Pack away' song. • Bubbles to bring the group back together. • Sing 'Farewell' song. • Inform about content for next week: 'Using children's interests to develop skills'. Encourage parents to complete home practice sheets.	*Resources:* • Bubbles • Pens • Home practice Session 1 sheet • Home Folders

Cue Cards

Indoor Cue Cards	**Outdoor Cue Cards**
• Puzzles 1.1 • Succeeding with Puzzles 1.2 • Threading 2.1 • Threading Animals 2.2 • Nesting Cups and Stacking Rings 4 • Playdough 6.1 • Playdough Ideas 6.2 • Craft 7.1 • Cotton Wool Sheep Craft 7.2 • Blocks 8 • Junk Construction 9.1 • Junk Construction Ideas 9.2 • Book Sharing 10 • Pretend Play 11 • Encouraging Language 12 • People Games 16	• Messy Play 1 • Washing Station 2.2 • Finger Painting 3.2 • Bubble Bucket 4 • Jumping 5 • Climbing Frames 6 • Tunnels 7 • Trampoline 8 • Ramp and Slopes 9 • Stairs and Steps 10 • Stepping Stones 11 • Animal Walks 12 • Assorted Balls: Soccer and Basketball 13 • People Games 14

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Session 1: Learning Through Play

Aim

- For parents to become more aware of the types of play their child enjoys and doesn't enjoy.
- For parents to become more aware of how they play with their child and what strengths and challenges they have in interacting and playing with their child.
- For parents to join in and play with their child.

Key message

Children learn best when playing and having fun interacting with you. To extend your child's skills within play it's important to discover and become aware of:

- the types of play your child enjoys and doesn't enjoy
- the types of play you enjoy and least enjoy with your child
- joining in and playing with your child.

Poster

Notice:

- what your child likes to play with
- how your child plays with toys that interest them
- whether your child engages in different types of play.

Notice the sort of play:

- you enjoy most with your child
- you find more difficult or challenging to enjoy with your child.

Mat Time Script

Give information: We know that children learn best when playing and having fun interacting with you. Children can play in lots of different ways and with lots of different things.

Today you will see that we have a number of stations set up around the room. You and your child can visit these stations and play together there. By waiting and seeing what your child chooses to play with you can learn about what types of play they like and what play they show less interest in or find challenging. So try and wait and see what types of play interests your child and then follow them in this play and try to join in.

For example you may notice your child enjoys messy play when they go to the painting station or they might enjoy pretend play when they go to the home corner station (*point out different stations in the room*). You might notice that your child's interests change quickly or alternatively they may stay at one activity for a while.
We want you to notice:

1. what your child gets excited by or absorbed in or is curious about; and
2. how comfortable you feel when playing with them in this type of play.

Some parents feel most comfortable engaging with their child in certain types of play. For example, you might really enjoy playing with the dolls because you like to pretend but you might not like playing with the shaving foam because you don't like the feeling on your hands. Be aware of what types of play you like and dislike and acknowledge that your child's interests may be different to yours.

Model: (Model appropriate interaction where possible – try to make it intentional modeling by explaining or tuning the parents into what you are doing and why, and give them something specific to watch for). During our mat session, try to notice what prop your child takes out and what interests them the most. Is it the book, the animal props or the singing? Notice how I will wait to see what each shows an interest in and I will try not to direct them to anything particular.

Practice: So today, we want you to watch what takes your child's interest the most, what do you enjoy playing with and then think about how comfortable or easy it is for you to join in with your child's play.

In the following weeks we will learn how to build upon your child's interests and strengths during their play to encourage their communication with you. It might not sound like an important thing to focus on but it is very important information to have in the following sessions.

Each play station has cue cards to give you information about the play and how you might engage and communicate during play. Don't feel that you have to look at all of these, they will be there every week and are there just to give you some extra ideas if you want them.

The stucture of each playgroup session will be the same (*point to visual schedule*). We will start the session by reading a book and singing some songs together….then we will spend 30 minutes in inside play, followed by morning tea. After the children settle into snack time we will discuss the key message more as a group. X (other faciltator) will be able to keep the children entertained so we can discuss this in more depth whilst also allowing you some time to meet and talk with each other. We will then spend 30 minutes outside with the kids before coming together in the last 5 minutes to sing goodbye. Myself and X (faciltator) will come around to talk to you individually about your child's development throughout the session. We will play this musical instrument (*show and play musical instrument)* to indicate it's time to move on to the next activity. At times, we will also sing the pack away song to help the children transition to the next activity.

So again, today your job is to try to notice all the activities and materials you and your child enjoy playing with.

After the book: Now it is time to move to our indoor play stations which are all set up. Try not to direct your child to a specific activity, let your child lead you to what they are interested in. And when you get there, make sure you get down to their level so that you are face to face with your child.

Morning Tea Script

Make it explicit to parents that morning tea is when key messages will be introduced and discussed. The other faciltator and volunteer's role is to play with the children to allow the parents to listen to key messages and engage in group discussion.

Parent Reflection

- What types of play did you notice your child liked/disliked?
- How comfortable did you feel when playing with them in this type of play?

Interest Based learning

Children are just like adults, they learn best when they are interested in something and having fun. Think about yourself, it's much easier learning about something you find interesting and stimulating compared to something you find dull or boring. You often recall more details about interesting topics and talk for longer about these topics with friends and/or family. It is exactly the same for children; they learn best when they are interested in an activity and having fun.

As adults, we can have lots of exciting and new ideas when playing with our children which are great. However, when we want them to develop and learn to communicate we need to start by joining in with what they are most interested in. Sometimes to do this, we need to take a step back from directing them in their play, and instead observe what they drawn to and then join them in this.

For some parents, this can be a challenge because sometimes what our children find most interesting might not be what you find most interesting. For example, some children might love messy play but their parents don't, or some parents might want to kick the soccer ball but their children prefer to sit and pretend to make a cup of tea. So, try to wait and notice what your child naturally gravitates towards. Try to avoid directing them in this play, instead get down to their level so you can see their face and join them in the activity, take a note of what that feels like for you and how comfortable you feel doing this.

In the following weeks we will learn how to build upon your child's interests and strengths during their play to encourage their communication and development, so it might not sound like an important thing to focus on but it will be very important to following sessions.

Outdoor play

In a few minutes, we will move outside where there are a number of play stations set up including water play, painting, bubble bucket etc.

Each play station has cue cards to give you information about the play activity and how to engage and communicate during play. Please don't feel that you need to look at all of these, they will be there every week and are there just to give you some extra ideas if you want them. Myself and X (faciltator) will come around to talk to you individually about your child's development.

Home folders and home practice sheets

Over here are home folders (*point to location of folders*). Each week you will get a home practice sheet with your goals and the key messages from the session on the back (*show example of home practice sheet*). We will bring this around to write down the individual strategies we discuss with you. It is very important to bring it back each week so we can follow up with how you went with your goals and the strategies. The *'things to talk to your child's clinician about'* section is there for you to write down any issues or questions you have during the week that you want to ask at the following session.

We also have a range of handouts here *(show where handouts are)* so feel free to take what you want. We will generally add some new ones each week.

Session 1 Summary Scripts

Mat Time

Information:

- Children learn best when having fun.
- Watch and wait to see what activities you child likes most.

Today we are focusing on:

- identifying what children like to play with
- noticing how comfortable parents feel when engaging in this play with children
- book share: notice what toy your child takes for book sharing.

Playgroup structure:

- Cue cards: provide extra information if wanted.
- Routine: mat time, inside play, morning tea, key message discussion, outdoor play, group goodbye and finish.
- Facilitators will come and talk individually with parents.

Morning Tea

Explicitly inform parents morning tea is when key messages will be introduced.

Parent reflection:

- What types of play did you notice your child liked/disliked?
- How comfortable do you feel when playing with them in this type of play?

Information:

- Interest based learning:
    - Children learn best when interested and having fun.
    - It can be difficult if parent and child have different interests.
    - Wait and notice what your child plays with.
    - Avoid directing them in play.
    - Get down to their level and join them in the activity.
- Outdoor stations:
    - Cue cards.
    - Facilitators will come and talk individually with parents.
- Home folders and home practice sheets:
    - Home practice sheet: individual strategies tailored to your goals and key messages, bring back each week.
    - Handouts: range of handouts that will be added to each week.

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Key Message Posters

Key message posters provide summaries of the key messages. The posters are designed to be placed on the wall for use during the playgroup discussion and for facilitators to refer to during the playgroup. A copy of the key message poster is also placed on the back of each home practice sheet.

Session 1

Learning Through Play

How to do it

Notice:

- what your child likes to play with
- how your child plays with toys that interest them
- whether your child engages in different types of play.

Notice the sort of play:

- you enjoy most with your child
- you find more difficult or challenging to enjoy with your child.

Why is this important?

Children learn best when playing and having fun interacting with you. To extend your child's skills within play it's important to discover and become aware of:

- the types of play your child enjoys and doesn't enjoy
- the types of play you enjoy and least enjoy with your child.

Try to Avoid

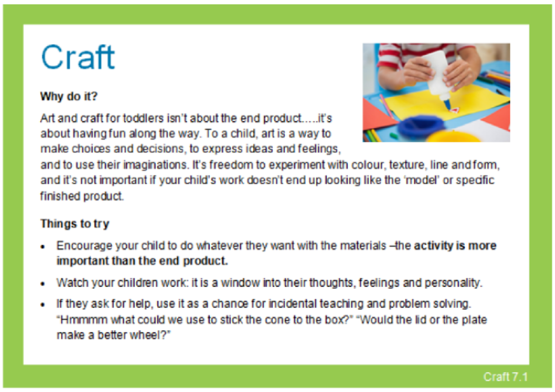
- Telling your child how to play and what to play with.

Cue Cards

Cue cards provide additional information and ideas related to each playgroup activity. These laminated cards get stuck close to activities for parents to refer to as required.

Green cue cards are designed for inside activities and purple cue cards are designed for outside activities.

Green Cue Card: Inside Activity



Craft

Why do it?

Art and craft for toddlers isn't about the end product.....it's about having fun along the way. To a child, art is a way to make choices and decisions, to express ideas and feelings, and to use their imaginations. It's freedom to experiment with colour, texture, line and form, and it's not important if your child's work doesn't end up looking like the 'model' or specific finished product.

Things to try

- Encourage your child to do whatever they want with the materials –the **activity is more important than the end product.**
- Watch your children work: it is a window into their thoughts, feelings and personality.
- If they ask for help, use it as a chance for incidental teaching and problem solving. "Hmmmm what could we use to stick the cone to the box?" "Would the lid or the plate make a better wheel?"

Craft 7.1

Purple Cue Card: Outside Activity

Messy Play

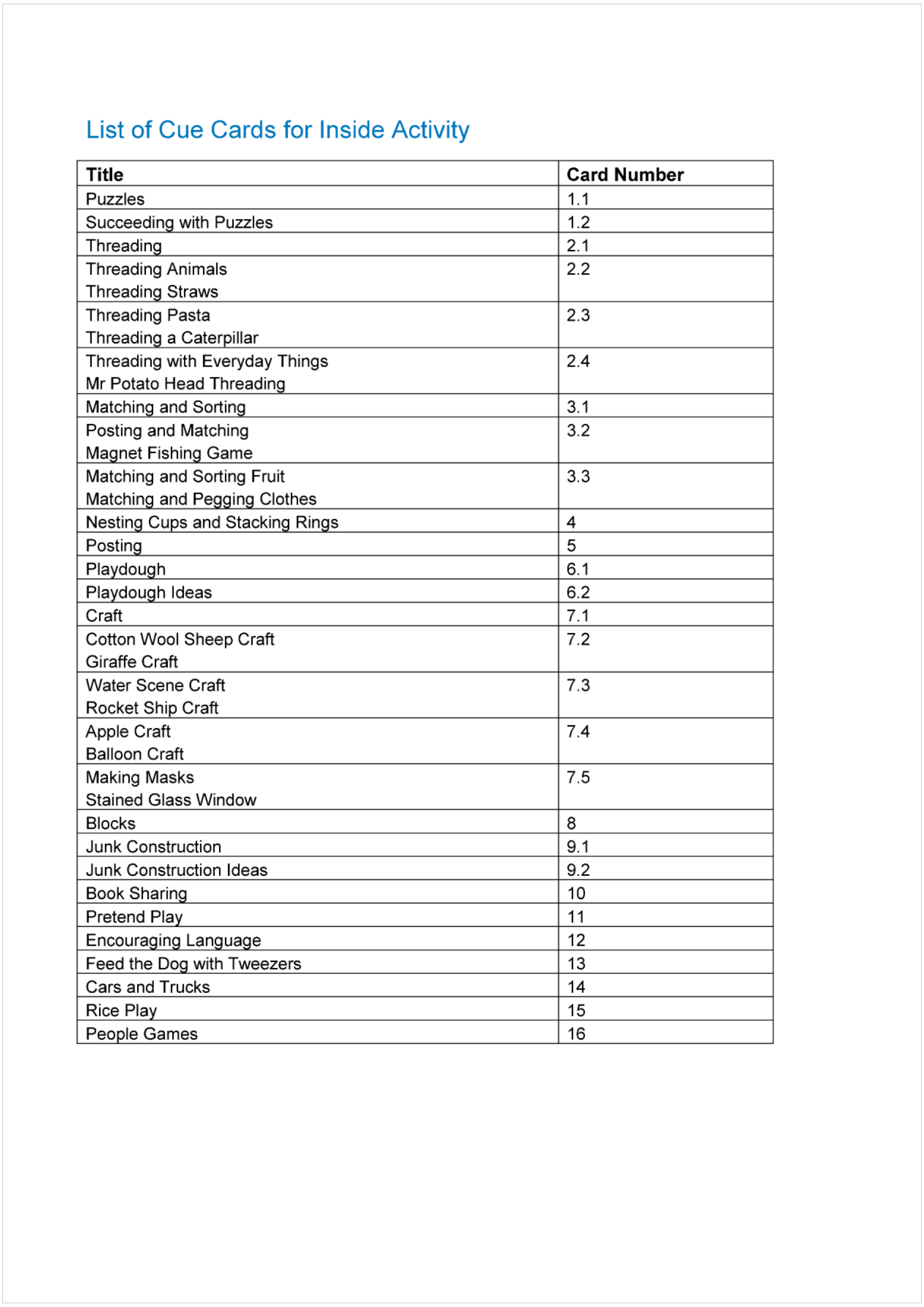
Why do it?

Messy play is creative, allowing children to explore sensory play and express feelings. Messy play can involve sand, water, clay, mud, playdough, glue, paint and other materials. Using materials with different textures can help children get used to different sensations whilst using their hands and fingers.

Things to try

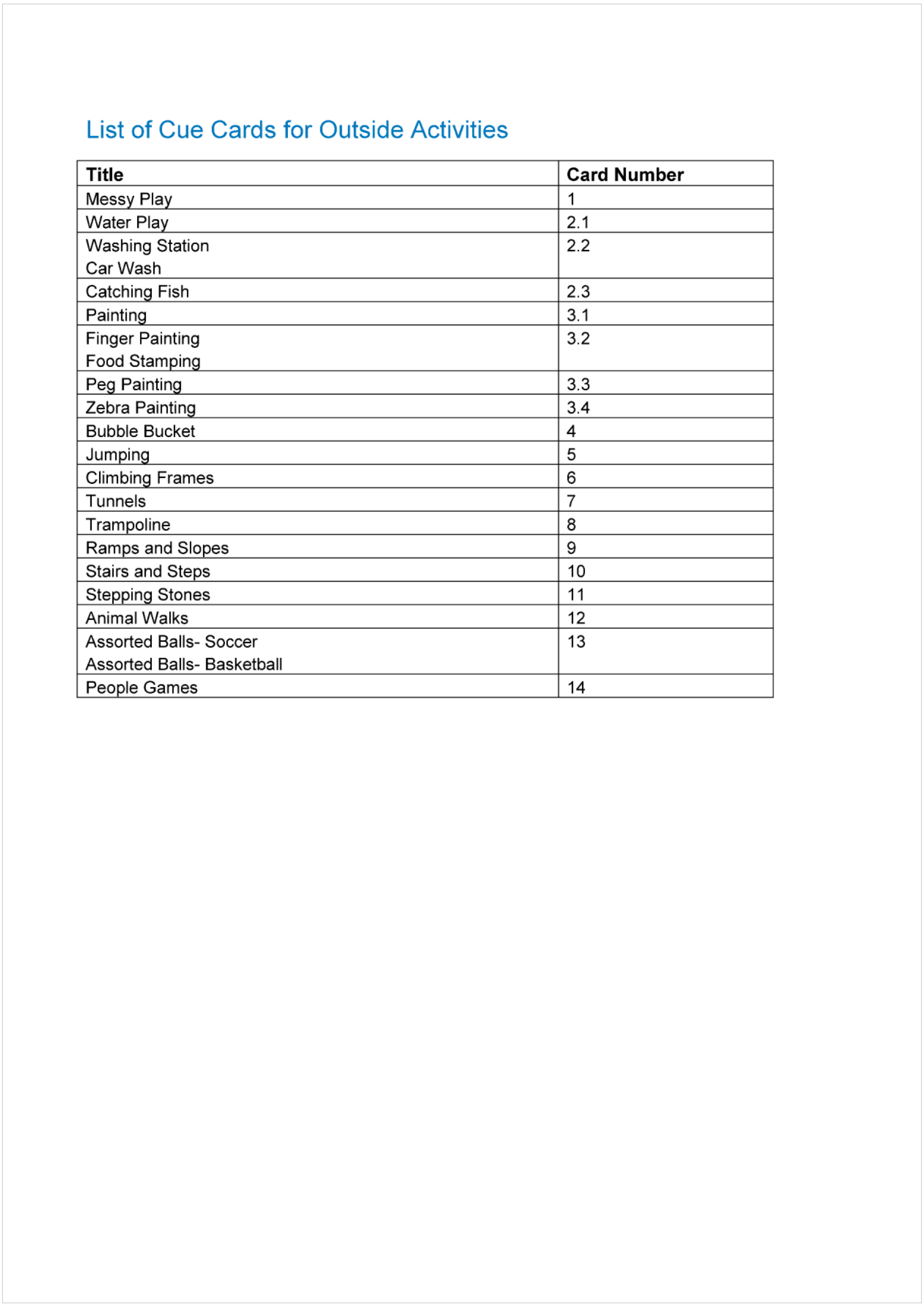
- Some children may not enjoy the feel of messy play- be sensitive to this, and playfully encourage exploration, but don't force it.
- Join in with your child's play. Follow their lead and show your child different things that you can do.
- Be prepared for mess – wear old clothes and have a wet cloth for wiping hands. Some messy play is more easily managed outside.
- Talk while you play, labelling what your child is doing and how it feels: "you're painting the dinosaur". "This paint feels cold on my fingers" "so many dinosaur foot prints, one, two, three, four!"

Messy Play 1



List of Cue Cards for Inside Activity

Title	**Card Number**
Puzzles	1.1
Succeeding with Puzzles	1.2
Threading	2.1
Threading Animals Threading Straws	2.2
Threading Pasta Threading a Caterpillar	2.3
Threading with Everyday Things Mr Potato Head Threading	2.4
Matching and Sorting	3.1
Posting and Matching Magnet Fishing Game	3.2
Matching and Sorting Fruit Matching and Pegging Clothes	3.3
Nesting Cups and Stacking Rings	4
Posting	5
Playdough	6.1
Playdough Ideas	6.2
Craft	7.1
Cotton Wool Sheep Craft Giraffe Craft	7.2
Water Scene Craft Rocket Ship Craft	7.3
Apple Craft Balloon Craft	7.4
Making Masks Stained Glass Window	7.5
Blocks	8
Junk Construction	9.1
Junk Construction Ideas	9.2
Book Sharing	10
Pretend Play	11
Encouraging Language	12
Feed the Dog with Tweezers	13
Cars and Trucks	14
Rice Play	15
People Games	16



List of Cue Cards for Outside Activities

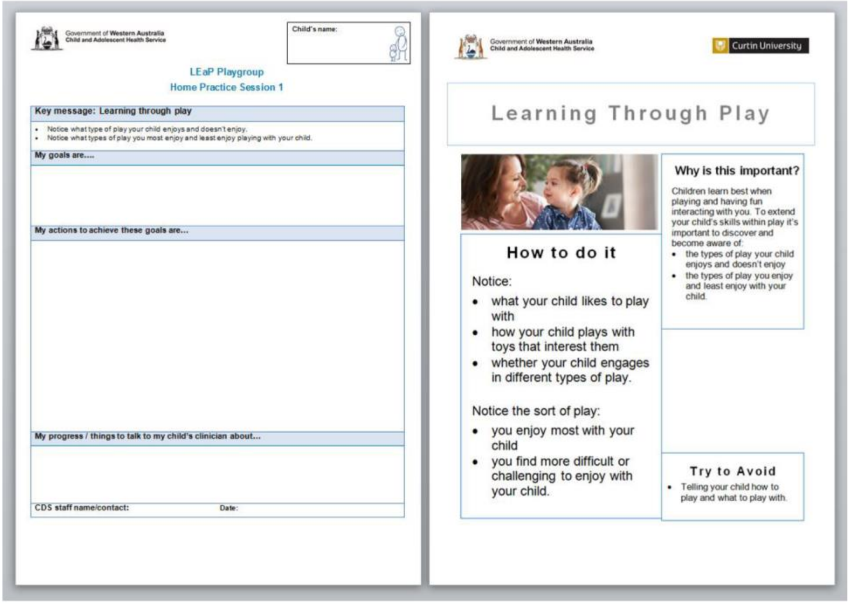
Title	**Card Number**
Messy Play	1
Water Play	2.1
Washing Station Car Wash	2.2
Catching Fish	2.3
Painting	3.1
Finger Painting Food Stamping	3.2
Peg Painting	3.3
Zebra Painting	3.4
Bubble Bucket	4
Jumping	5
Climbing Frames	6
Tunnels	7
Trampoline	8
Ramps and Slopes	9
Stairs and Steps	10
Stepping Stones	11
Animal Walks	12
Assorted Balls- Soccer Assorted Balls- Basketball	13
People Games	14

Home Practice Sheets

Home practice sheets are designed to document families' individual goals and strategies and provide a copy of the session's key messages.

Parents are encouraged to take this home and bring it back the following week so facilitators can discuss progress and offer support as required.

The following is an example of Session 1 Home Practice Sheet.



Government of **Western Australia**
Child and Adolescent Health Service

Child's name:

LEaP Playgroup
Home Practice Session 1

Key message: Learning through play

- Notice what type of play your child enjoys and doesn't enjoy.
- Notice what types of play you most enjoy and least enjoy playing with your child.

My goals are....

My actions to achieve these goals are...

My progress / things to talk to my child's clinician about...

CDS staff name/contact: **Date:**

Government of **Western Australia**
Child and Adolescent Health Service

Curtin University

Learning Through Play

How to do it

Notice:

- what your child likes to play with
- how your child plays with toys that interest them
- whether your child engages in different types of play.

Notice the sort of play:

- you enjoy most with your child
- you find more difficult or challenging to enjoy with your child.

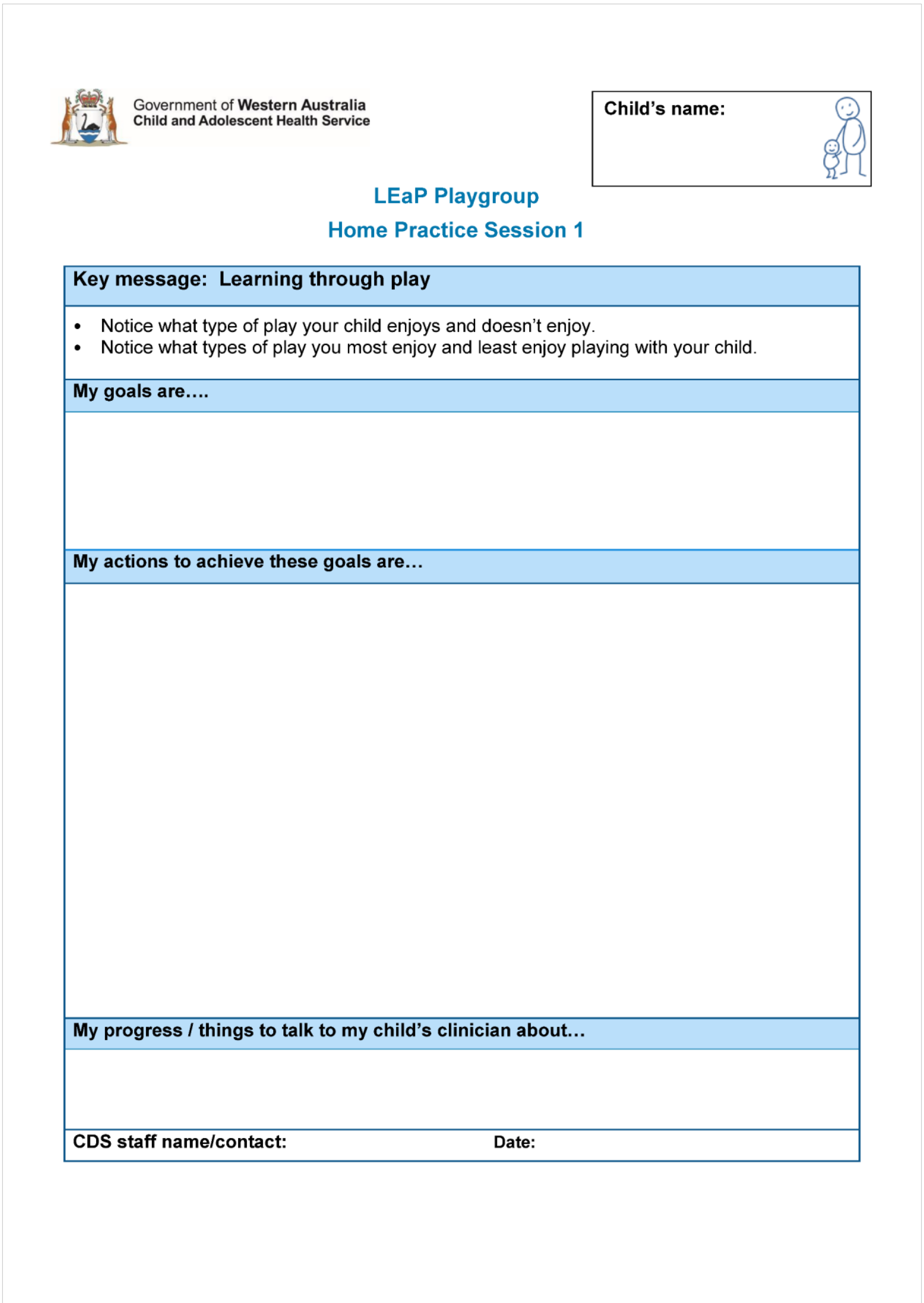
Why is this important?

Children learn best when playing and having fun interacting with you. To extend your child's skills within play it's important to discover and become aware of:

- the types of play your child enjoys and doesn't enjoy
- the types of play you enjoy and least enjoy with your child.

Try to Avoid

- Telling your child how to play and what to play with.



Government of **Western Australia**
Child and Adolescent Health Service

Child's name:

LEaP Playgroup
Home Practice Session 1

Key message: Learning through play
• Notice what type of play your child enjoys and doesn't enjoy. • Notice what types of play you most enjoy and least enjoy playing with your child.
My goals are….
My actions to achieve these goals are…
My progress / things to talk to my child's clinician about…
CDS staff name/contact: **Date:**

Appendix D Awards and Publicity

1. Awarded Best Paper at the Occupational Therapy Australia 27th National Conference in 2017, for 'The power of playgroups: Parents experiences of attending therapeutic and supported playgroups.'

CACH OT wins best paper at National Conference

Aug 17
3

Congratulations to Jodie Armstrong who won the award for best paper at the Occupational Therapy National Conference in July.

The paper, titled '*The power of playgroups: Parent's experiences of attending therapeutic and supported playgroups*' documented the experiences of parents attending supported or therapeutic playgroups with their child with a developmental delay or disability, and also identified aspects of playgroups that enhanced family engagement and outcomes.

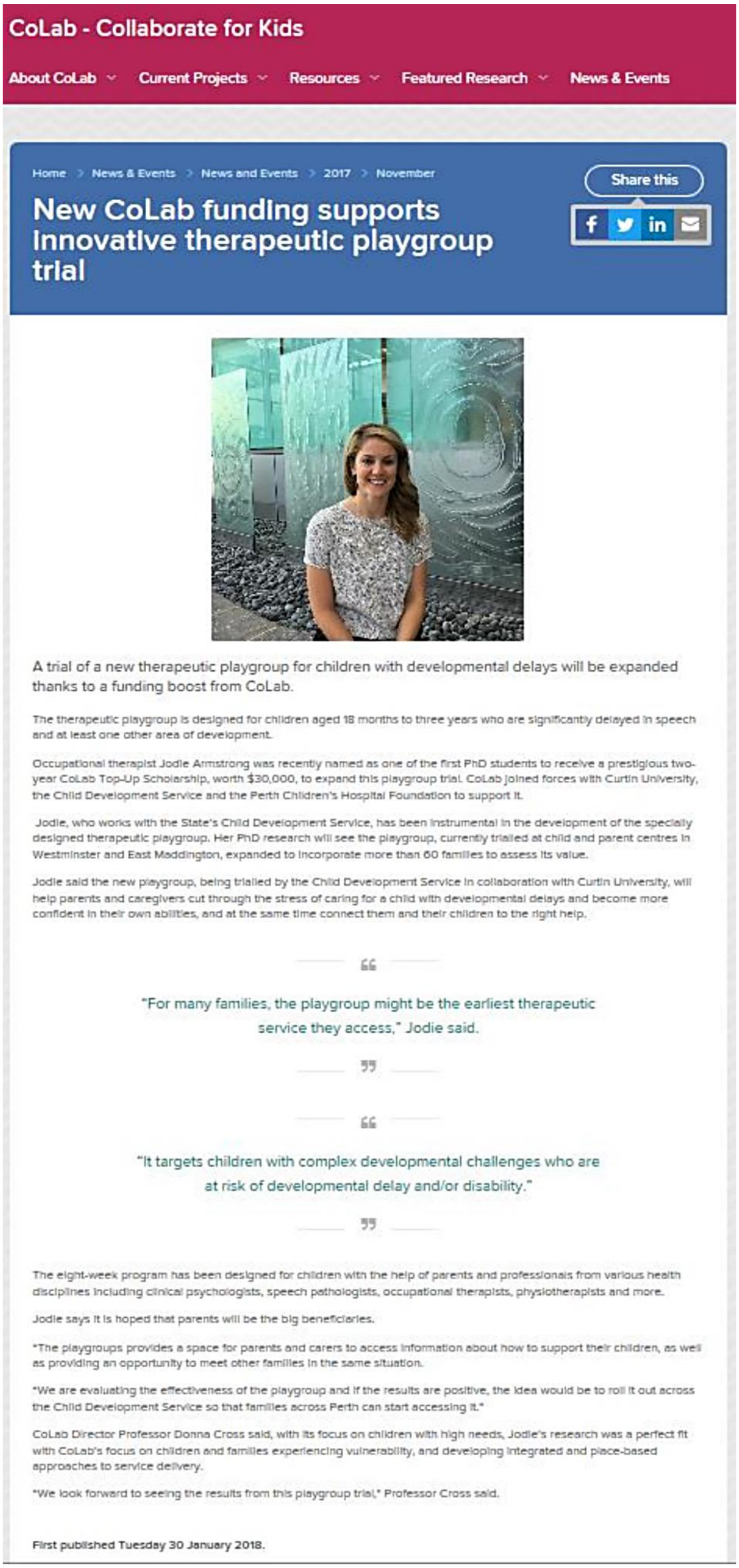
The OT National Conference is a three day biennial event attended by over 950 delegates from across Australia, New Zealand and internationally. Over 300 papers were presented at the conference this year.

The paper forms one phase of Jodie's PhD project, titled the Learn, Engage and Play (LEaP) Study.
This is a research collaboration between the Child Development Service (CDS) and Curtin University and aims to develop and evaluate a therapeutic playgroup intervention as a new service model for children and families accessing the CDS.

Jodie works at Bentley CDS one day a week while completing her PhD, and has worked with CDS for the last seven years.

Jodie wrote her paper with input from the research team, Professor Catherine Elliott, Emma Davidson, Dr John Wray, Joanne Mizen, and A/Professor Sonya Girdler. She would also like to acknowledge the CDS staff for the role they played in recruiting parents to participate in the study.

2. CoLab Scholarship Funding



New CoLab funding supports innovative therapeutic playgroup trial

A trial of a new therapeutic playgroup for children with developmental delays will be expanded thanks to a funding boost from CoLab.

The therapeutic playgroup is designed for children aged 18 months to three years who are significantly delayed in speech and at least one other area of development.

Occupational therapist Jodie Armstrong was recently named as one of the first PhD students to receive a prestigious two-year CoLab Top-Up Scholarship, worth $30,000, to expand this playgroup trial. CoLab joined forces with Curtin University, the Child Development Service and the Perth Children's Hospital Foundation to support it.

Jodie, who works with the State's Child Development Service, has been instrumental in the development of the specially designed therapeutic playgroup. Her PhD research will see the playgroup, currently trialled at child and parent centres in Westminster and East Maddington, expanded to incorporate more than 60 families to assess its value.

Jodie said the new playgroup, being trialled by the Child Development Service in collaboration with Curtin University, will help parents and caregivers cut through the stress of caring for a child with developmental delays and become more confident in their own abilities, and at the same time connect them and their children to the right help.

> "For many families, the playgroup might be the earliest therapeutic service they access," Jodie said.

> "It targets children with complex developmental challenges who are at risk of developmental delay and/or disability."

The eight-week program has been designed for children with the help of parents and professionals from various health disciplines including clinical psychologists, speech pathologists, occupational therapists, physiotherapists and more.

Jodie says it is hoped that parents will be the big beneficiaries.

"The playgroups provides a space for parents and carers to access information about how to support their children, as well as providing an opportunity to meet other families in the same situation.

"We are evaluating the effectiveness of the playgroup and if the results are positive, the idea would be to roll it out across the Child Development Service so that families across Perth can start accessing it."

CoLab Director Professor Donna Cross said, with its focus on children with high needs, Jodie's research was a perfect fit with CoLab's focus on children and families experiencing vulnerability, and developing integrated and place-based approaches to service delivery.

"We look forward to seeing the results from this playgroup trial," Professor Cross said.

First published Tuesday 30 January 2018.

3. International Day of Women and Girls in Science

International Day of Women and Girls in Science - 11 February

Feb 19
11

International Day of Women and Girls in Science is held on 11 February each year, and was adopted by the UN General Assembly to promote full and equal access to and participation in science for women and girls.

The celebration is led by UNESCO and UN-Women, in collaboration with institutions and civil society partners that promote women and girls' access to and participation in science.

Women and girls continue to be excluded from participating fully in science; less than 30% of researchers worldwide are women.

Women and girls play a critical role in science and technology and that their participation should be strengthened.

CAHS is well represented by women in science and medical research, women who are fantastic role models for girls and young women interested in STEM careers. Some of our wonderful staff members shared their thoughts on women and girls in science;

(Clockwise from top left) Dr Anita Campbell, Dr Asha Bowen, Dr Fenella Gill, Dr Kimberley Hoiles, Belinda McLean, Jade Ferullo, Dr Vinutha Shetty, Jodie Armstrong.

"Gender is no barrier to a successful and productive career in STEM. Seek out role models, mentors and people who will cheer you on as you continue to ask important questions. Never stop asking questions: this is where science begins, and if you maintain your inquiring mind you will excel as a scientist" – **Dr Asha Bowen**

"I feel very fortunate growing up to have had support from my school and family environment that valued education and fostered my interest in science. I think attitudes are changing in some workplaces in Australia, which are promoting diversity that is inclusive of gender diversity. We all play a role in ensuring this continues to progress into the future". – **Dr Anita Campbell**

"The STEM field has largely been male dominated with misconceptions and myths about women not suitable in these fields. This essentially speaks about huge untapped talent that has not come to surface. Girls and young women interested in science and technology should firstly express their interest and approach individuals in their area of interest. There are more opportunities than before which will also help balance career and family. Most importantly, it is important to believe that if you are willing, there is always a way." – **Dr Mary Abraham**

"I once cared for a paediatric patient who said that it is important to "take every opportunity to make the world a better place." Research is about discovery and improvement. Research brings so much pride, honour and reward. Find your passion, believe in yourself and be courageous- you have the capability to achieve anything". – **Jade Ferullo**

"I have been in Australia for more than10 years. I lived in India for the first 30 years of my life, then in Abu Dhabi for five years. I also spent some time in United States. There are differences in attitudes towards women and girls in science depending on where they live. Traditionally, boys are nurtured and encouraged much more than girls to participate in STEM subjects or pursue careers in science. Gender stereotypes have had a major effect in girl's attitudes towards pursuing a career in STEM fields. However this is slowly changing. Overall women are more recognised for their capabilities when compared to few decades ago. I find that their access to and participation in science and mathematics are more encouraged now. But there is still a significant underrepresentation of women in science and technical fields." – **Dr Vinutha Shetty**

< Go Back

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4. Western Australian Health Translation Network (WAHTN) Early Career Research Fellowship

WAHTN
Western Australian Health Translation Network

CERTIFICATE OF
FELLOWSHIP

This is to certify that

MS JODIE ARMSTRONG

has successfully been awarded a

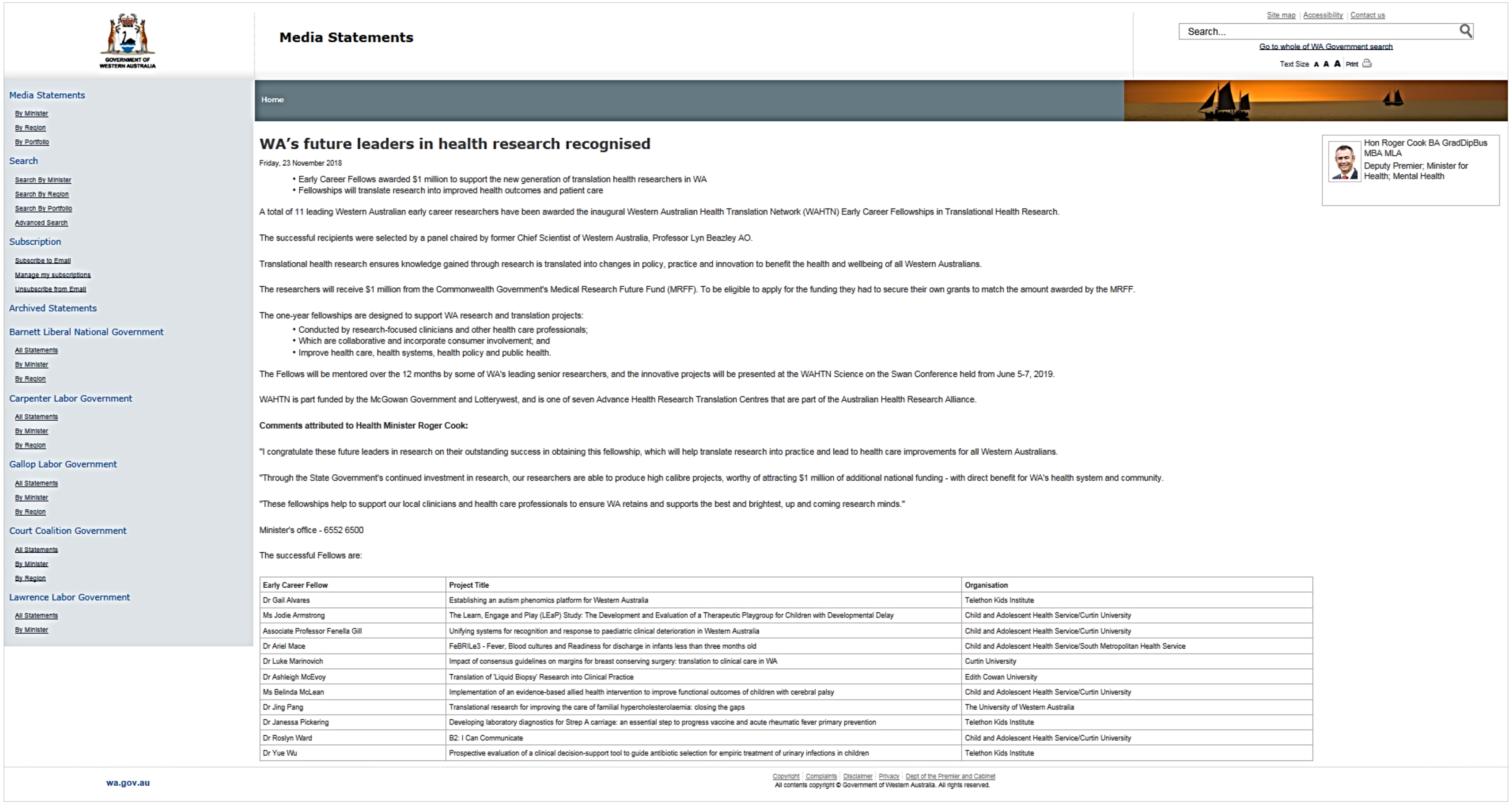
WAHTN EARLY CAREER FELLOW

For the research translation project: The Learn, Engage and Play (LEaP) Study: The Development and Evaluation of a Therapeutic Playgroup for Children with Developmental Delay

1 January to 31 December 2019

Signature Redacted	Signature Redacted
Professor Gary Geelhoed Executive Director Western Australian Health Translation Network	Professor Lyn Beasley AO Chair WAHTN Early Career Fellowship Review Panel

5. Western Australian Health Minister WAHTN media statement



WA's future leaders in health research recognised

Friday, 23 November 2018

- Early Career Fellows awarded $1 million to support the new generation of translation health researchers in WA
- Fellowships will translate research into improved health outcomes and patient care

A total of 11 leading Western Australian early career researchers have been awarded the inaugural Western Australian Health Translation Network (WAHTN) Early Career Fellowships in Translational Health Research.

The successful recipients were selected by a panel chaired by former Chief Scientist of Western Australia, Professor Lyn Beazley AO.

Translational health research ensures knowledge gained through research is translated into changes in policy, practice and innovation to benefit the health and wellbeing of all Western Australians.

The researchers will receive $1 million from the Commonwealth Government's Medical Research Future Fund (MRFF). To be eligible to apply for the funding they had to secure their own grants to match the amount awarded by the MRFF.

The one-year fellowships are designed to support WA research and translation projects:

- Conducted by research-focused clinicians and other health care professionals;
- Which are collaborative and incorporate consumer involvement; and
- Improve health care, health systems, health policy and public health.

The Fellows will be mentored over the 12 months by some of WA's leading senior researchers, and the innovative projects will be presented at the WAHTN Science on the Swan Conference held from June 5-7, 2019.

WAHTN is part funded by the McGowan Government and Lotterywest, and is one of seven Advance Health Research Translation Centres that are part of the Australian Health Research Alliance.

Comments attributed to Health Minister Roger Cook:

"I congratulate these future leaders in research on their outstanding success in obtaining this fellowship, which will help translate research into practice and lead to health care improvements for all Western Australians.

"Through the State Government's continued investment in research, our researchers are able to produce high calibre projects, worthy of attracting $1 million of additional national funding - with direct benefit for WA's health system and community.

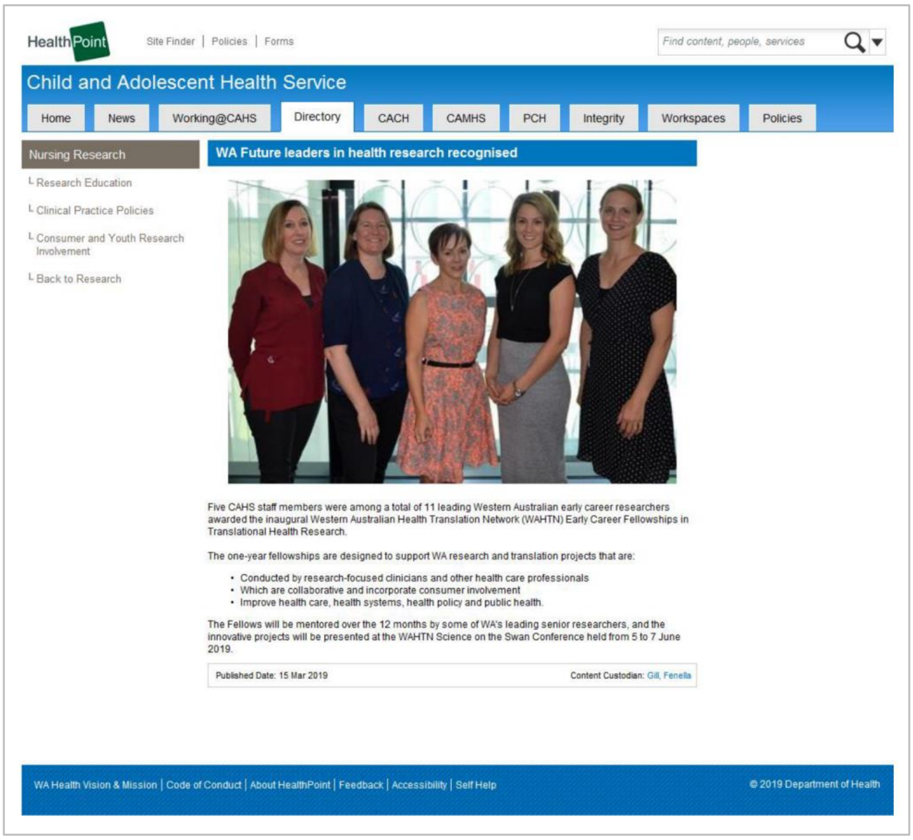
"These fellowships help to support our local clinicians and health care professionals to ensure WA retains and supports the best and brightest, up and coming research minds."

Minister's office - 6552 6500

The successful Fellows are:

Early Career Fellow	Project Title	Organisation
Dr Gail Alvares	Establishing an autism phenomics platform for Western Australia	Telethon Kids Institute
Ms Jodie Armstrong	The Learn, Engage and Play (LEaP) Study: The Development and Evaluation of a Therapeutic Playgroup for Children with Developmental Delay	Child and Adolescent Health Service/Curtin University
Associate Professor Fenella Gill	Unifying systems for recognition and response to paediatric clinical deterioration in Western Australia	Child and Adolescent Health Service/Curtin University
Dr Ariel Mace	FeBRILe3 - Fever, Blood cultures and Readiness for discharge in infants less than three months old	Child and Adolescent Health Service/South Metropolitan Health Service
Dr Luke Marinovich	Impact of consensus guidelines on margins for breast conserving surgery: translation to clinical care in WA	Curtin University
Dr Ashleigh McEvoy	Translation of 'Liquid Biopsy' Research into Clinical Practice	Edith Cowan University
Ms Belinda McLean	Implementation of an evidence-based allied health intervention to improve functional outcomes of children with cerebral palsy	Child and Adolescent Health Service/Curtin University
Dr Jing Pang	Translational research for improving the care of familial hypercholesterolaemia: closing the gaps	The University of Western Australia
Dr Janessa Pickering	Developing laboratory diagnostics for Strep A carriage: an essential step to progress vaccine and acute rheumatic fever primary prevention	Telethon Kids Institute
Dr Roslyn Ward	B2: I Can Communicate	Child and Adolescent Health Service/Curtin University
Dr Yue Wu	Prospective evaluation of a clinical decision-support tool to guide antibiotic selection for empiric treatment of urinary infections in children	Telethon Kids Institute

6. Western Australian future leaders in health research



WA Future leaders in health research recognised

Five CAHS staff members were among a total of 11 leading Western Australian early career researchers awarded the inaugural Western Australian Health Translation Network (WAHTN) Early Career Fellowships in Translational Health Research.

The one-year fellowships are designed to support WA research and translation projects that are:

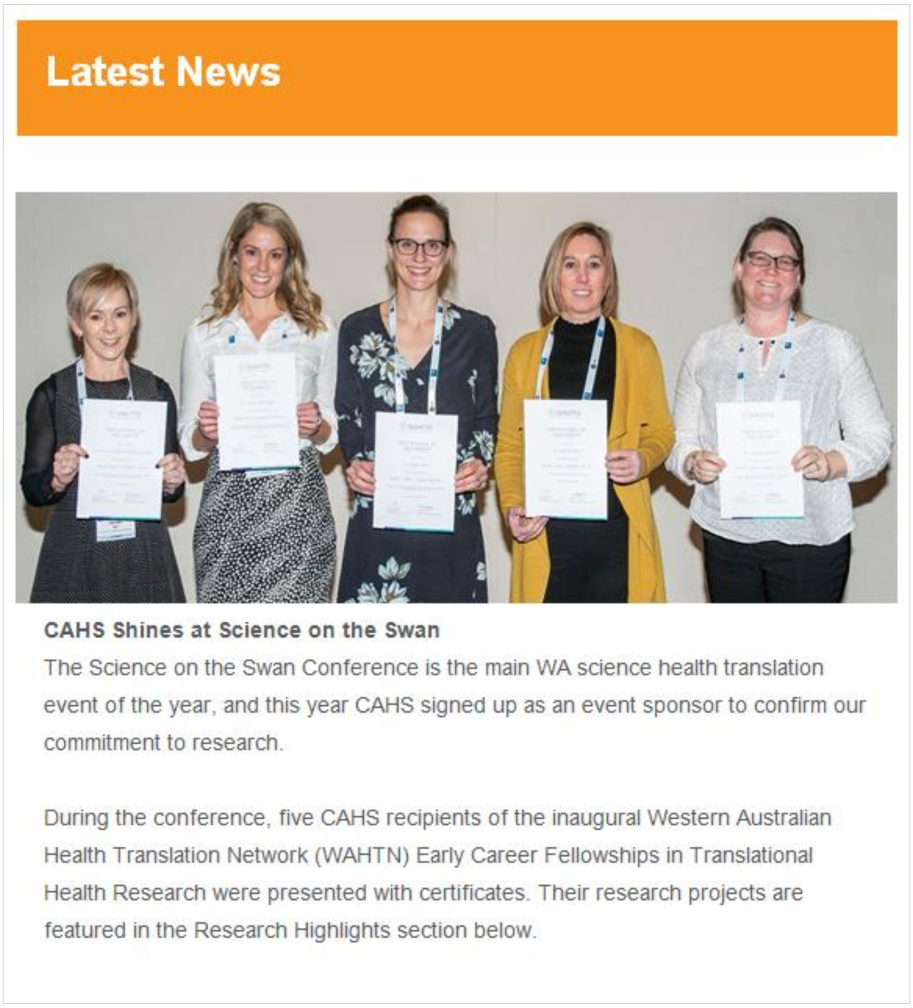
- Conducted by research-focused clinicians and other health care professionals
- Which are collaborative and incorporate consumer involvement
- Improve health care, health systems, health policy and public health.

The Fellows will be mentored over the 12 months by some of WA's leading senior researchers, and the innovative projects will be presented at the WAHTN Science on the Swan Conference held from 5 to 7 June 2019.

Published Date: 15 Mar 2019

Content Custodian: Gill, Fenella

7. Child and Adolescent Health Service latest news



Latest News

CAHS Shines at Science on the Swan

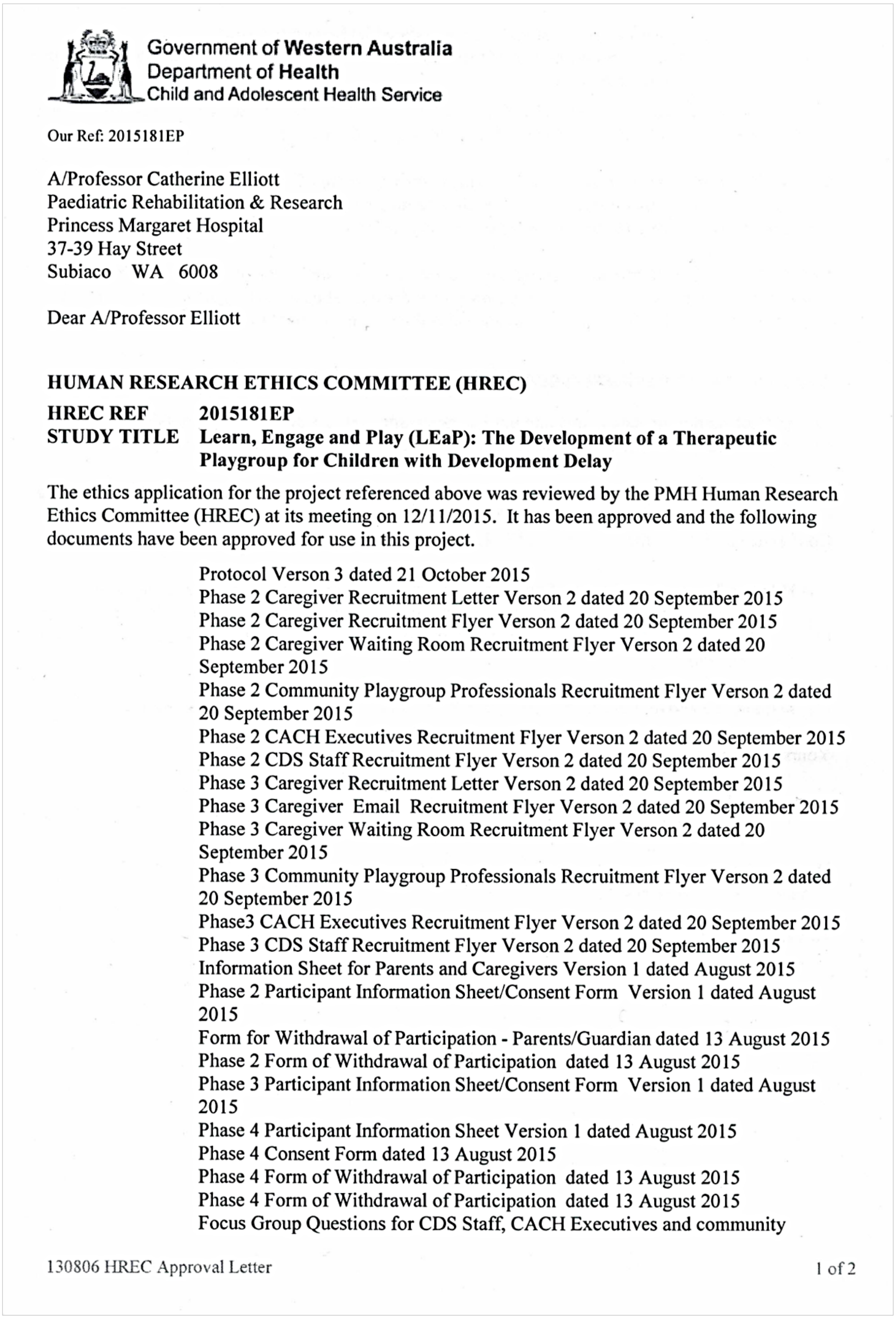
The Science on the Swan Conference is the main WA science health translation event of the year, and this year CAHS signed up as an event sponsor to confirm our commitment to research.

During the conference, five CAHS recipients of the inaugural Western Australian Health Translation Network (WAHTN) Early Career Fellowships in Translational Health Research were presented with certificates. Their research projects are featured in the Research Highlights section below.

Learn, Engage and Play Study (LEaP) Study

Jodie Armstrong's WAHTN award supported her PhD project titled 'Learn, Engage and Play Study (LEaP) Study'. This study aimed to develop and evaluate the effectiveness of a therapeutic playgroup for children with developmental delays when first referred to an early intervention service. This consumer driven study arose from parents' desire to have a way of accessing information early to support their child's development and connect with other families experiencing the same challenges.

Appendix E Perth Children's Hospital Human Research Ethics Committee Approval Letter



Government of **Western Australia**
Department of **Health**
Child and Adolescent Health Service

Our Ref: 2015181EP

A/Professor Catherine Elliott
Paediatric Rehabilitation & Research
Princess Margaret Hospital
37-39 Hay Street
Subiaco WA 6008

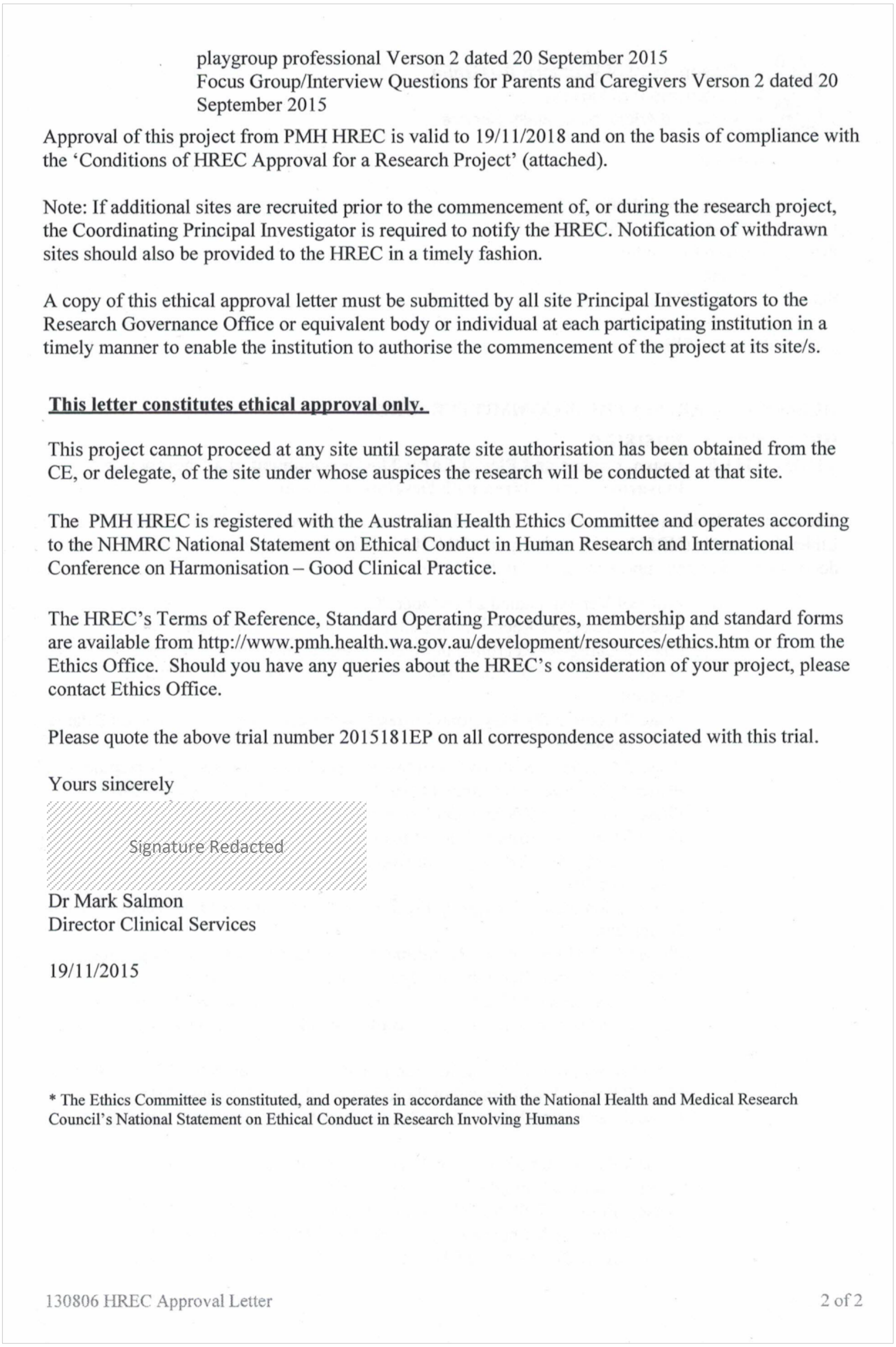
Dear A/Professor Elliott

HUMAN RESEARCH ETHICS COMMITTEE (HREC)

HREC REF **2015181EP**
STUDY TITLE **Learn, Engage and Play (LEaP): The Development of a Therapeutic Playgroup for Children with Development Delay**

The ethics application for the project referenced above was reviewed by the PMH Human Research Ethics Committee (HREC) at its meeting on 12/11/2015. It has been approved and the following documents have been approved for use in this project.

Protocol Verson 3 dated 21 October 2015
Phase 2 Caregiver Recruitment Letter Verson 2 dated 20 September 2015
Phase 2 Caregiver Recruitment Flyer Verson 2 dated 20 September 2015
Phase 2 Caregiver Waiting Room Recruitment Flyer Verson 2 dated 20 September 2015
Phase 2 Community Playgroup Professionals Recruitment Flyer Verson 2 dated 20 September 2015
Phase 2 CACH Executives Recruitment Flyer Verson 2 dated 20 September 2015
Phase 2 CDS Staff Recruitment Flyer Verson 2 dated 20 September 2015
Phase 3 Caregiver Recruitment Letter Verson 2 dated 20 September 2015
Phase 3 Caregiver Email Recruitment Flyer Verson 2 dated 20 September 2015
Phase 3 Caregiver Waiting Room Recruitment Flyer Verson 2 dated 20 September 2015
Phase 3 Community Playgroup Professionals Recruitment Flyer Verson 2 dated 20 September 2015
Phase3 CACH Executives Recruitment Flyer Verson 2 dated 20 September 2015
Phase 3 CDS Staff Recruitment Flyer Verson 2 dated 20 September 2015
Information Sheet for Parents and Caregivers Version 1 dated August 2015
Phase 2 Participant Information Sheet/Consent Form Version 1 dated August 2015
Form for Withdrawal of Participation - Parents/Guardian dated 13 August 2015
Phase 2 Form of Withdrawal of Participation dated 13 August 2015
Phase 3 Participant Information Sheet/Consent Form Version 1 dated August 2015
Phase 4 Participant Information Sheet Version 1 dated August 2015
Phase 4 Consent Form dated 13 August 2015
Phase 4 Form of Withdrawal of Participation dated 13 August 2015
Phase 4 Form of Withdrawal of Participation dated 13 August 2015
Focus Group Questions for CDS Staff, CACH Executives and community



playgroup professional Verson 2 dated 20 September 2015
Focus Group/Interview Questions for Parents and Caregivers Verson 2 dated 20 September 2015

Approval of this project from PMH HREC is valid to 19/11/2018 and on the basis of compliance with the 'Conditions of HREC Approval for a Research Project' (attached).

Note: If additional sites are recruited prior to the commencement of, or during the research project, the Coordinating Principal Investigator is required to notify the HREC. Notification of withdrawn sites should also be provided to the HREC in a timely fashion.

A copy of this ethical approval letter must be submitted by all site Principal Investigators to the Research Governance Office or equivalent body or individual at each participating institution in a timely manner to enable the institution to authorise the commencement of the project at its site/s.

This letter constitutes ethical approval only.

This project cannot proceed at any site until separate site authorisation has been obtained from the CE, or delegate, of the site under whose auspices the research will be conducted at that site.

The PMH HREC is registered with the Australian Health Ethics Committee and operates according to the NHMRC National Statement on Ethical Conduct in Human Research and International Conference on Harmonisation – Good Clinical Practice.

The HREC's Terms of Reference, Standard Operating Procedures, membership and standard forms are available from http://www.pmh.health.wa.gov.au/development/resources/ethics.htm or from the Ethics Office. Should you have any queries about the HREC's consideration of your project, please contact Ethics Office.

Please quote the above trial number 2015181EP on all correspondence associated with this trial.

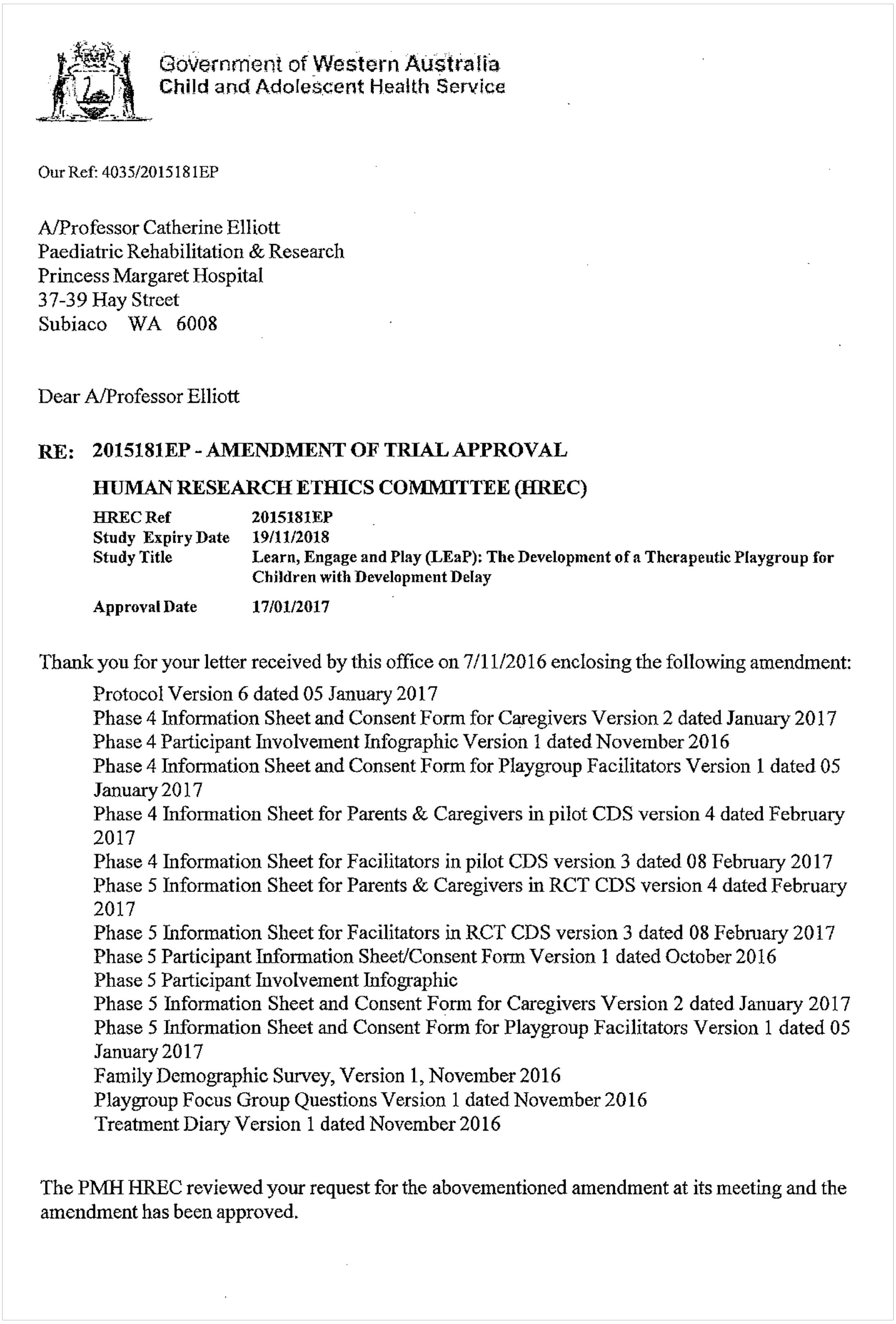
Yours sincerely

Signature Redacted

Dr Mark Salmon
Director Clinical Services

19/11/2015

* The Ethics Committee is constituted, and operates in accordance with the National Health and Medical Research Council's National Statement on Ethical Conduct in Research Involving Humans



Government of Western Australia
Child and Adolescent Health Service

Our Ref: 4035/2015181EP

A/Professor Catherine Elliott
Paediatric Rehabilitation & Research
Princess Margaret Hospital
37-39 Hay Street
Subiaco WA 6008

Dear A/Professor Elliott

RE: 2015181EP - AMENDMENT OF TRIAL APPROVAL

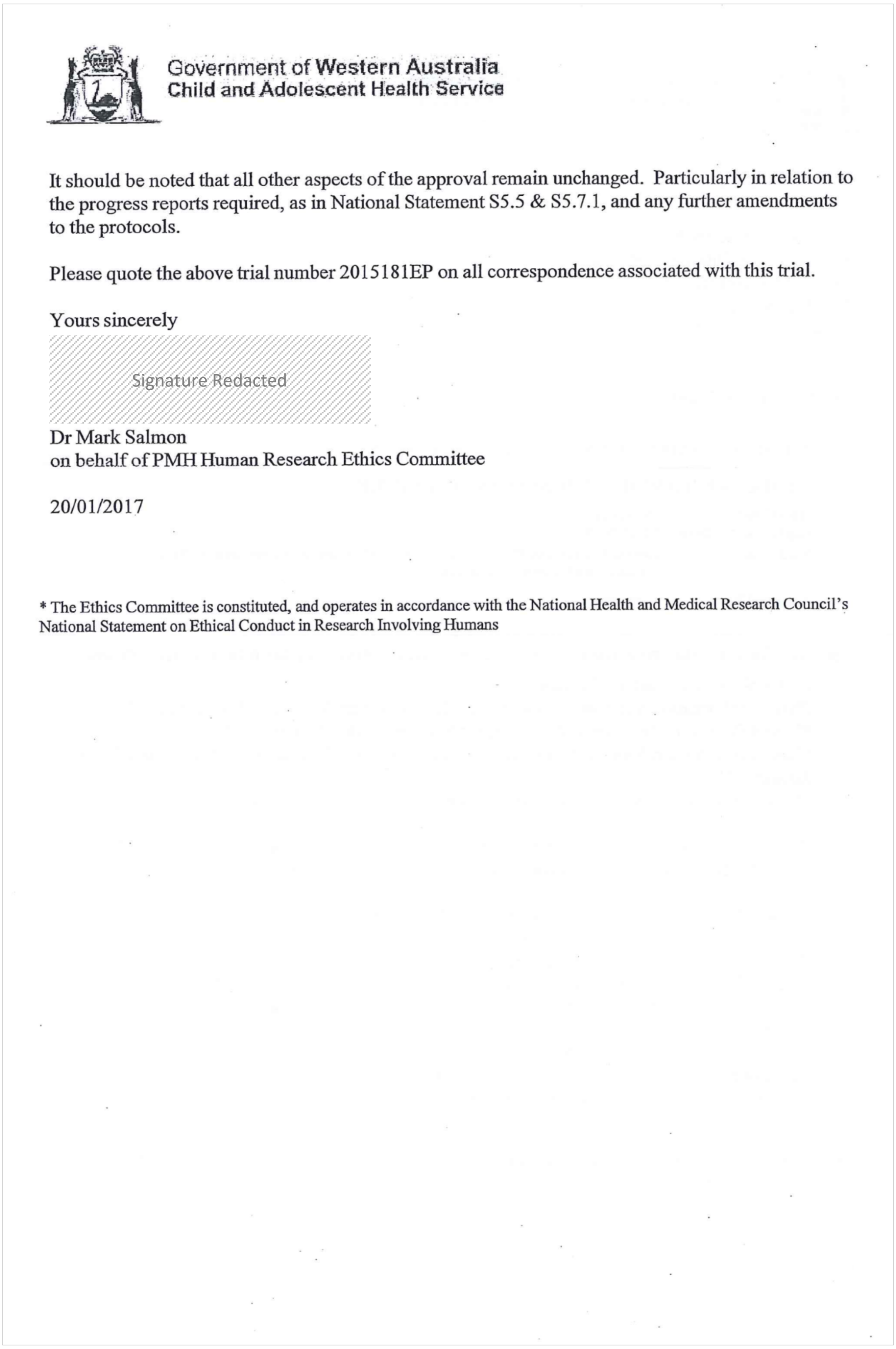
HUMAN RESEARCH ETHICS COMMITTEE (HREC)

HREC Ref	**2015181EP**
Study Expiry Date	**19/11/2018**
Study Title	**Learn, Engage and Play (LEaP): The Development of a Therapeutic Playgroup for Children with Development Delay**
Approval Date	**17/01/2017**

Thank you for your letter received by this office on 7/11/2016 enclosing the following amendment:

Protocol Version 6 dated 05 January 2017
Phase 4 Information Sheet and Consent Form for Caregivers Version 2 dated January 2017
Phase 4 Participant Involvement Infographic Version 1 dated November 2016
Phase 4 Information Sheet and Consent Form for Playgroup Facilitators Version 1 dated 05 January 2017
Phase 4 Information Sheet for Parents & Caregivers in pilot CDS version 4 dated February 2017
Phase 4 Information Sheet for Facilitators in pilot CDS version 3 dated 08 February 2017
Phase 5 Information Sheet for Parents & Caregivers in RCT CDS version 4 dated February 2017
Phase 5 Information Sheet for Facilitators in RCT CDS version 3 dated 08 February 2017
Phase 5 Participant Information Sheet/Consent Form Version 1 dated October 2016
Phase 5 Participant Involvement Infographic
Phase 5 Information Sheet and Consent Form for Caregivers Version 2 dated January 2017
Phase 5 Information Sheet and Consent Form for Playgroup Facilitators Version 1 dated 05 January 2017
Family Demographic Survey, Version 1, November 2016
Playgroup Focus Group Questions Version 1 dated November 2016
Treatment Diary Version 1 dated November 2016

The PMH HREC reviewed your request for the abovementioned amendment at its meeting and the amendment has been approved.



Government of Western Australia
Child and Adolescent Health Service

It should be noted that all other aspects of the approval remain unchanged. Particularly in relation to the progress reports required, as in National Statement S5.5 & S5.7.1, and any further amendments to the protocols.

Please quote the above trial number 2015181EP on all correspondence associated with this trial.

Yours sincerely

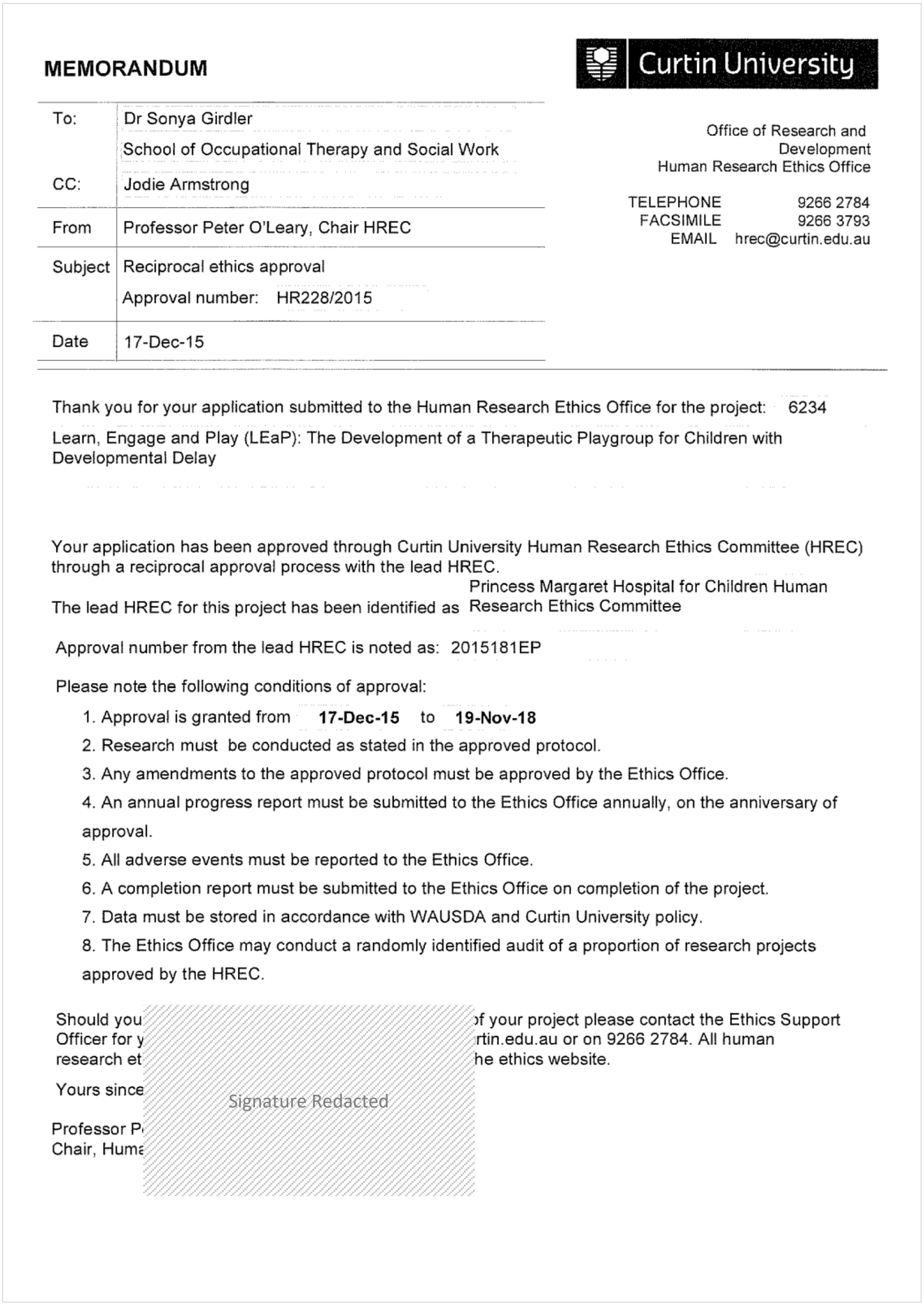
Signature Redacted

Dr Mark Salmon
on behalf of PMH Human Research Ethics Committee

20/01/2017

* The Ethics Committee is constituted, and operates in accordance with the National Health and Medical Research Council's National Statement on Ethical Conduct in Research Involving Humans

Appendix F Curtin University Human Research Ethics Committee Approval Letter



MEMORANDUM

Curtin University

To:	Dr Sonya Girdler School of Occupational Therapy and Social Work
CC:	Jodie Armstrong
From	Professor Peter O'Leary, Chair HREC
Subject	Reciprocal ethics approval Approval number: HR228/2015
Date	17-Dec-15

Office of Research and
Development
Human Research Ethics Office

TELEPHONE 9266 2784
FACSIMILE 9266 3793
EMAIL hrec@curtin.edu.au

Thank you for your application submitted to the Human Research Ethics Office for the project: 6234 Learn, Engage and Play (LEaP): The Development of a Therapeutic Playgroup for Children with Developmental Delay

Your application has been approved through Curtin University Human Research Ethics Committee (HREC) through a reciprocal approval process with the lead HREC.

The lead HREC for this project has been identified as Princess Margaret Hospital for Children Human Research Ethics Committee

Approval number from the lead HREC is noted as: 2015181EP

Please note the following conditions of approval:

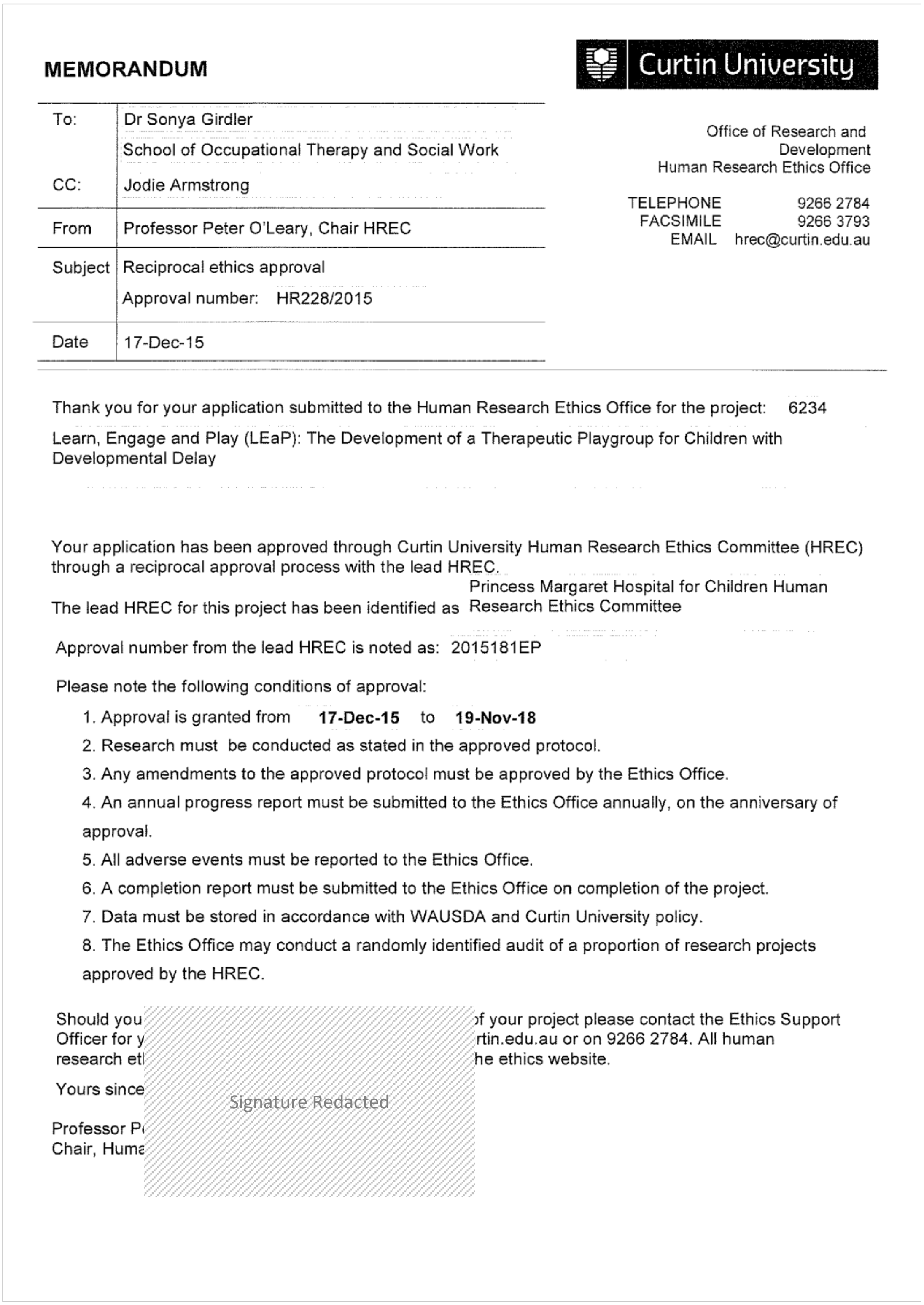
1. Approval is granted from **17-Dec-15** to **19-Nov-18**
2. Research must be conducted as stated in the approved protocol.
3. Any amendments to the approved protocol must be approved by the Ethics Office.
4. An annual progress report must be submitted to the Ethics Office annually, on the anniversary of approval.
5. All adverse events must be reported to the Ethics Office.
6. A completion report must be submitted to the Ethics Office on completion of the project.
7. Data must be stored in accordance with WAUSDA and Curtin University policy.
8. The Ethics Office may conduct a randomly identified audit of a proportion of research projects approved by the HREC.

Should you ɔf your project please contact the Ethics Support
Officer for y ɪrtin.edu.au or on 9266 2784. All human
research et he ethics website.

Yours since

Signature Redacted

Professor P
Chair, Huma



MEMORANDUM

Curtin University

Office of Research and
Development
Human Research Ethics Office

TELEPHONE 9266 2784
FACSIMILE 9266 3793
EMAIL hrec@curtin.edu.au

To:	Dr Sonya Girdler School of Occupational Therapy and Social Work
CC:	Jodie Armstrong
From	Professor Peter O'Leary, Chair HREC
Subject	Reciprocal ethics approval Approval number: HR228/2015
Date	17-Dec-15

Thank you for your application submitted to the Human Research Ethics Office for the project: 6234
Learn, Engage and Play (LEaP): The Development of a Therapeutic Playgroup for Children with Developmental Delay

Your application has been approved through Curtin University Human Research Ethics Committee (HREC) through a reciprocal approval process with the lead HREC.

The lead HREC for this project has been identified as Princess Margaret Hospital for Children Human Research Ethics Committee

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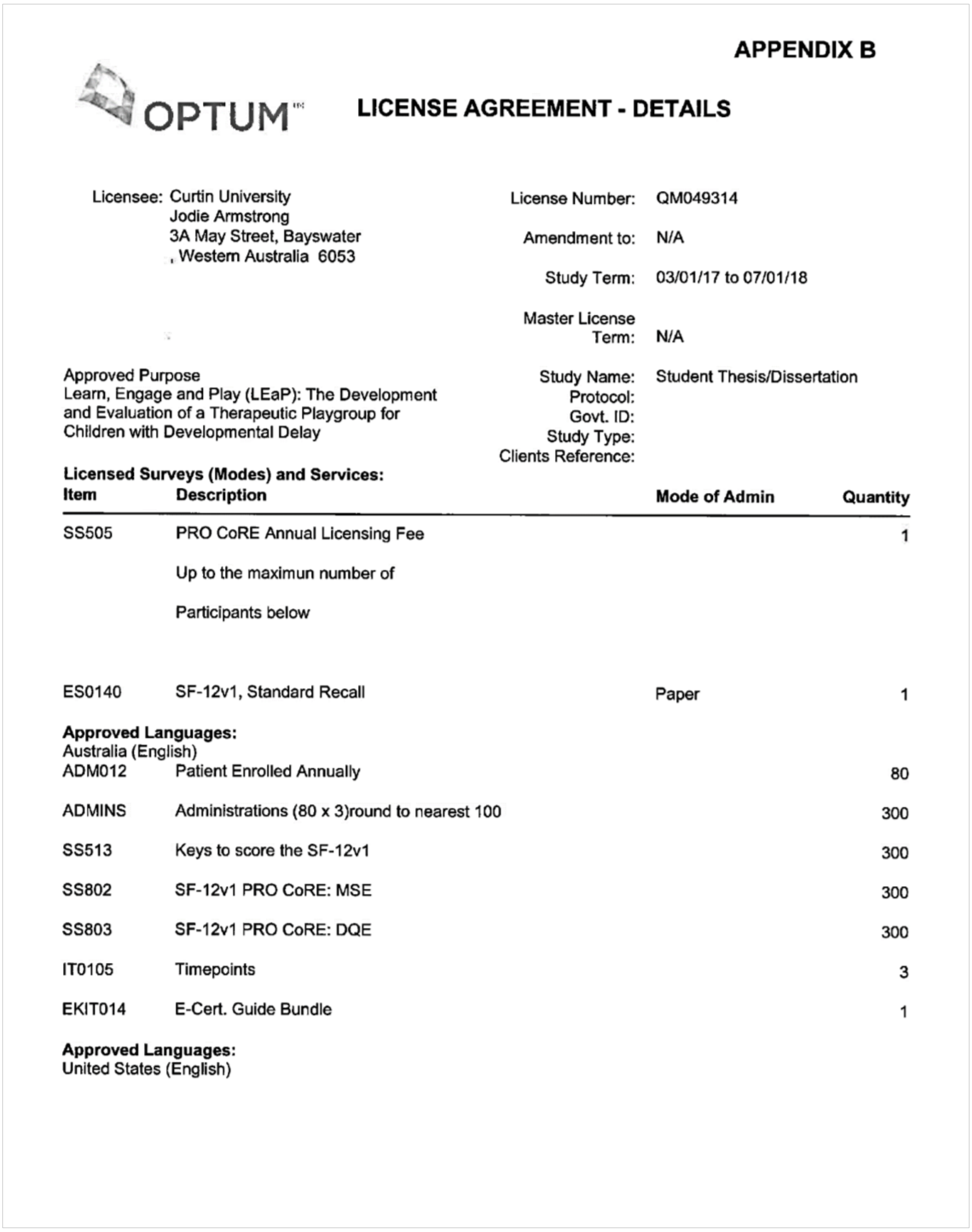
Should you f your project please contact the Ethics Support
Officer for y rtin.edu.au or on 9266 2784. All human
research et he ethics website.

Yours since

Signature Redacted

Professor P
Chair, Huma

Appendix G OPTUM Licence Agreement



APPENDIX B

OPTUM

LICENSE AGREEMENT - DETAILS

Licensee: Curtin University
Jodie Armstrong
3A May Street, Bayswater
Western Australia 6053

License Number: QM049314
Amendment to: N/A
Study Term: 03/01/17 to 07/01/18
Master License Term: N/A

Approved Purpose
Learn, Engage and Play (LEaP): The Development and Evaluation of a Therapeutic Playgroup for Children with Developmental Delay

Study Name: Student Thesis/Dissertation
Protocol:
Govt. ID:
Study Type:
Clients Reference:

Licensed Surveys (Modes) and Services:

Item	**Description**	**Mode of Admin**	**Quantity**
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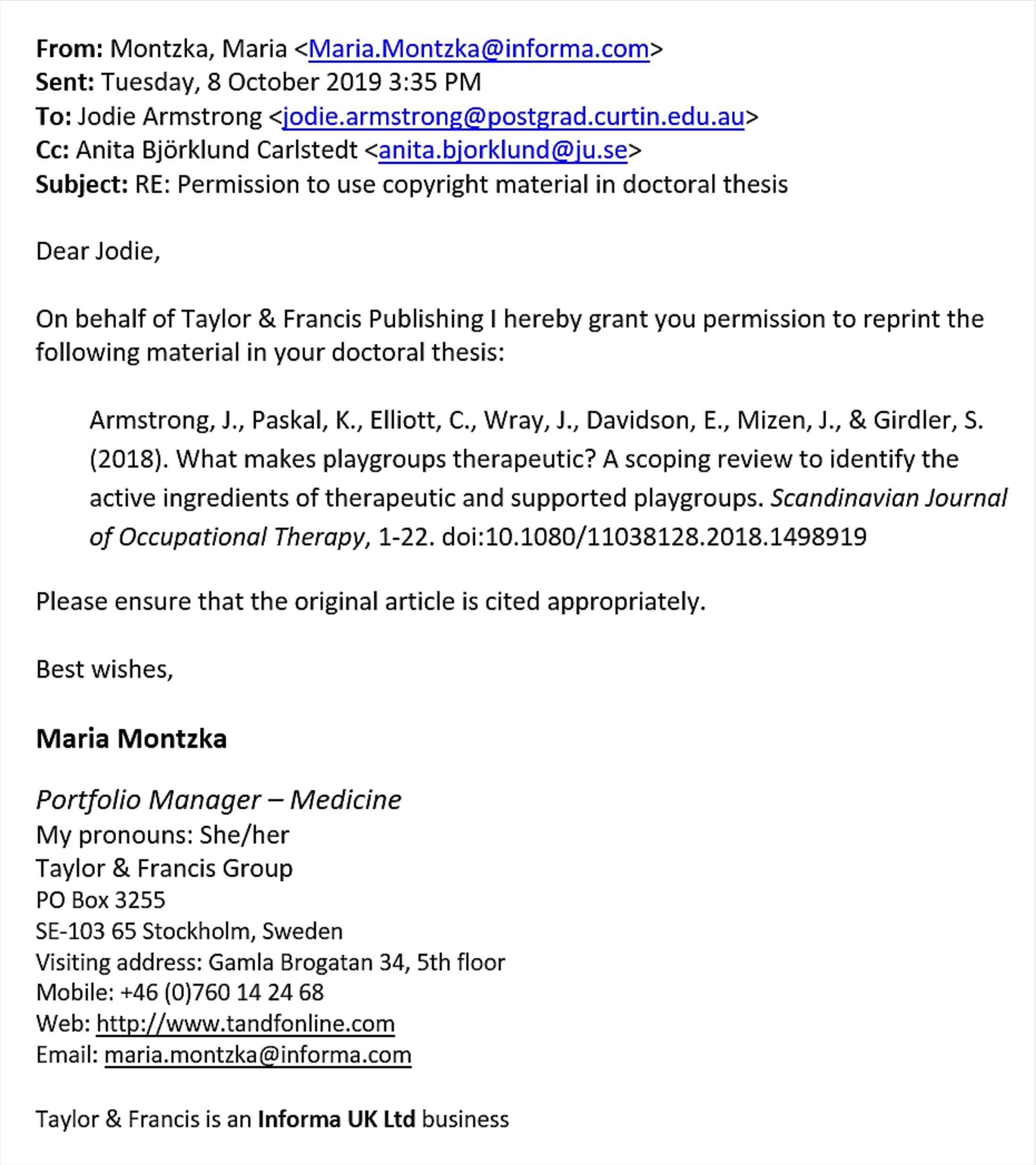

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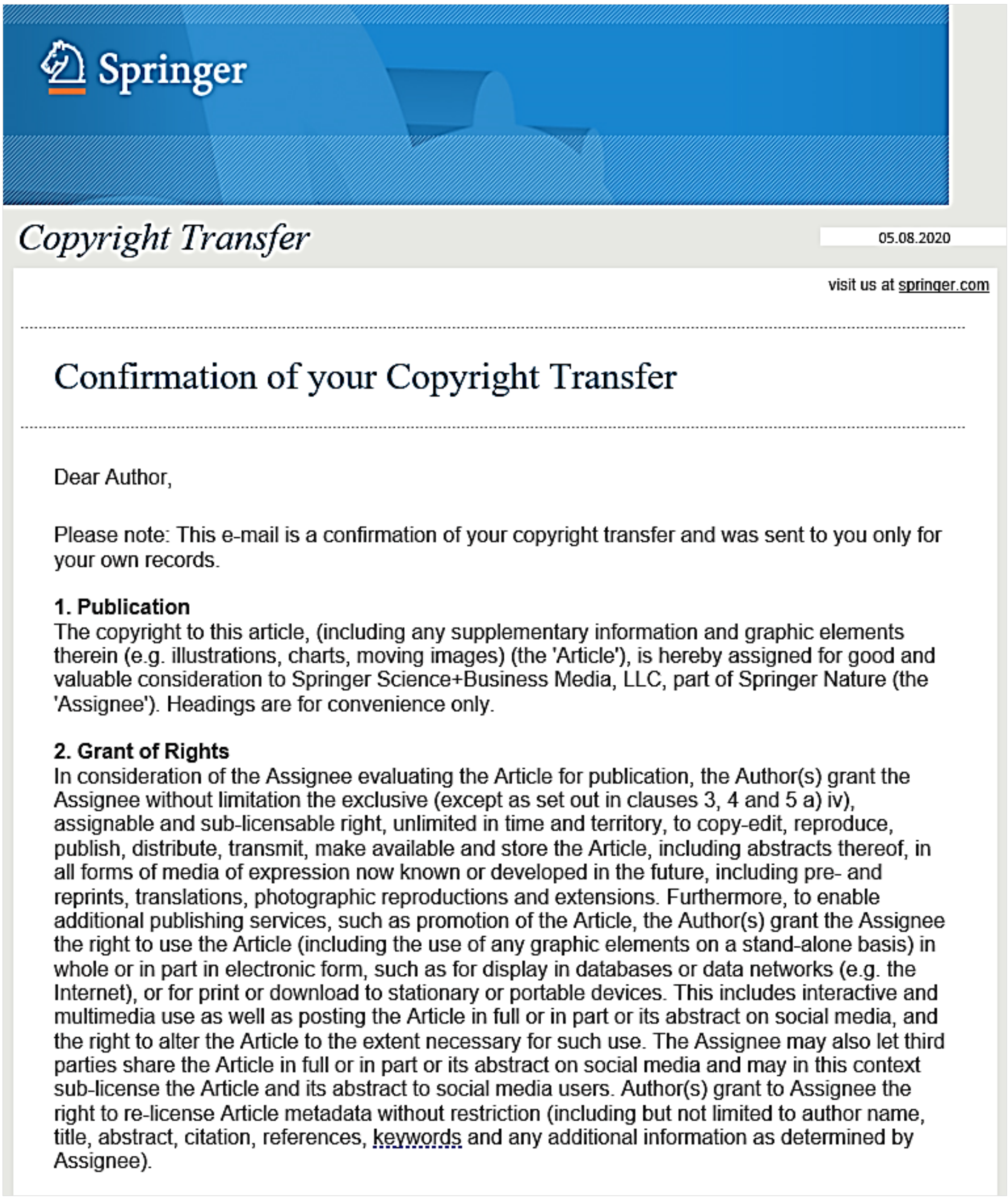

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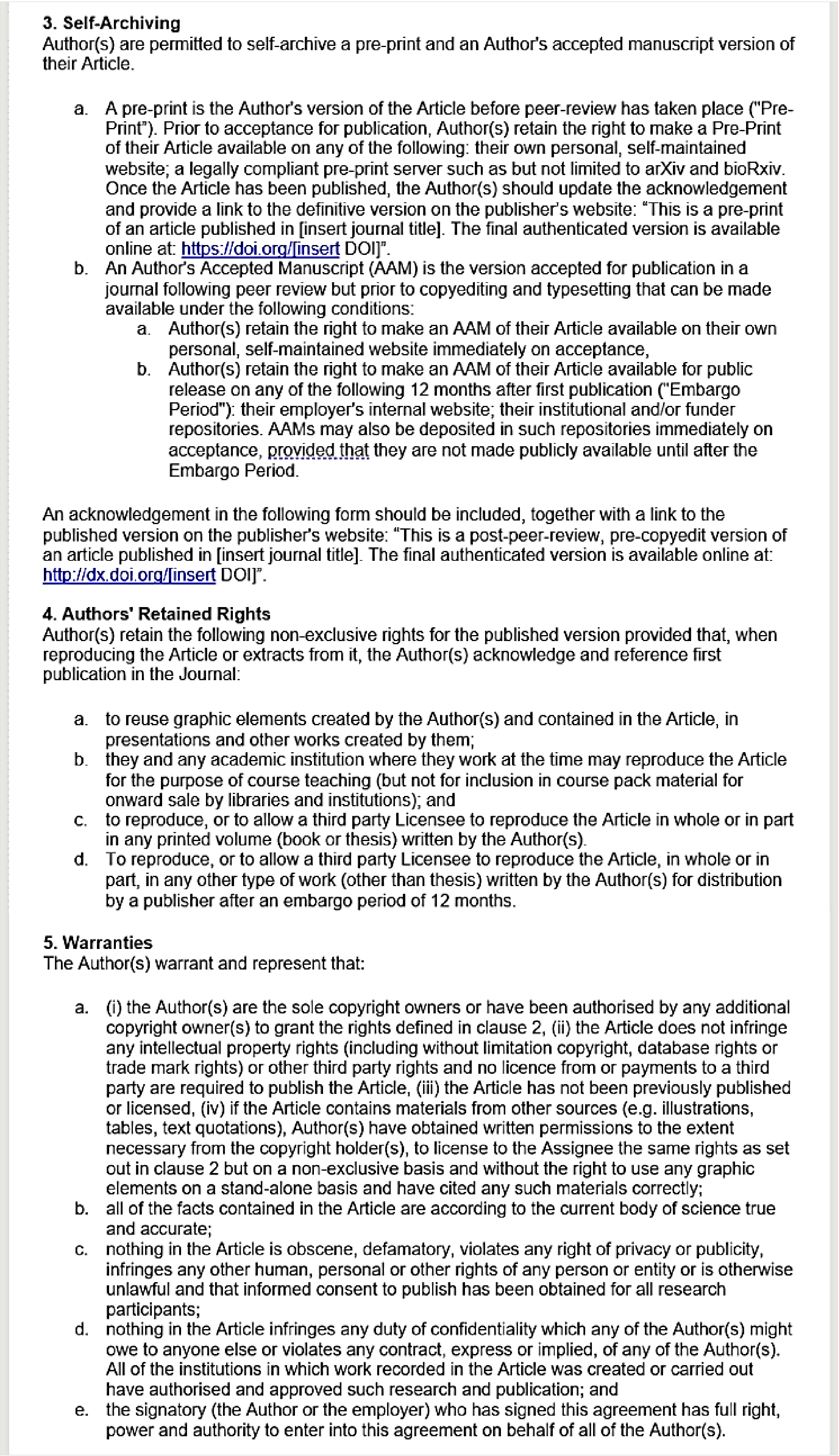

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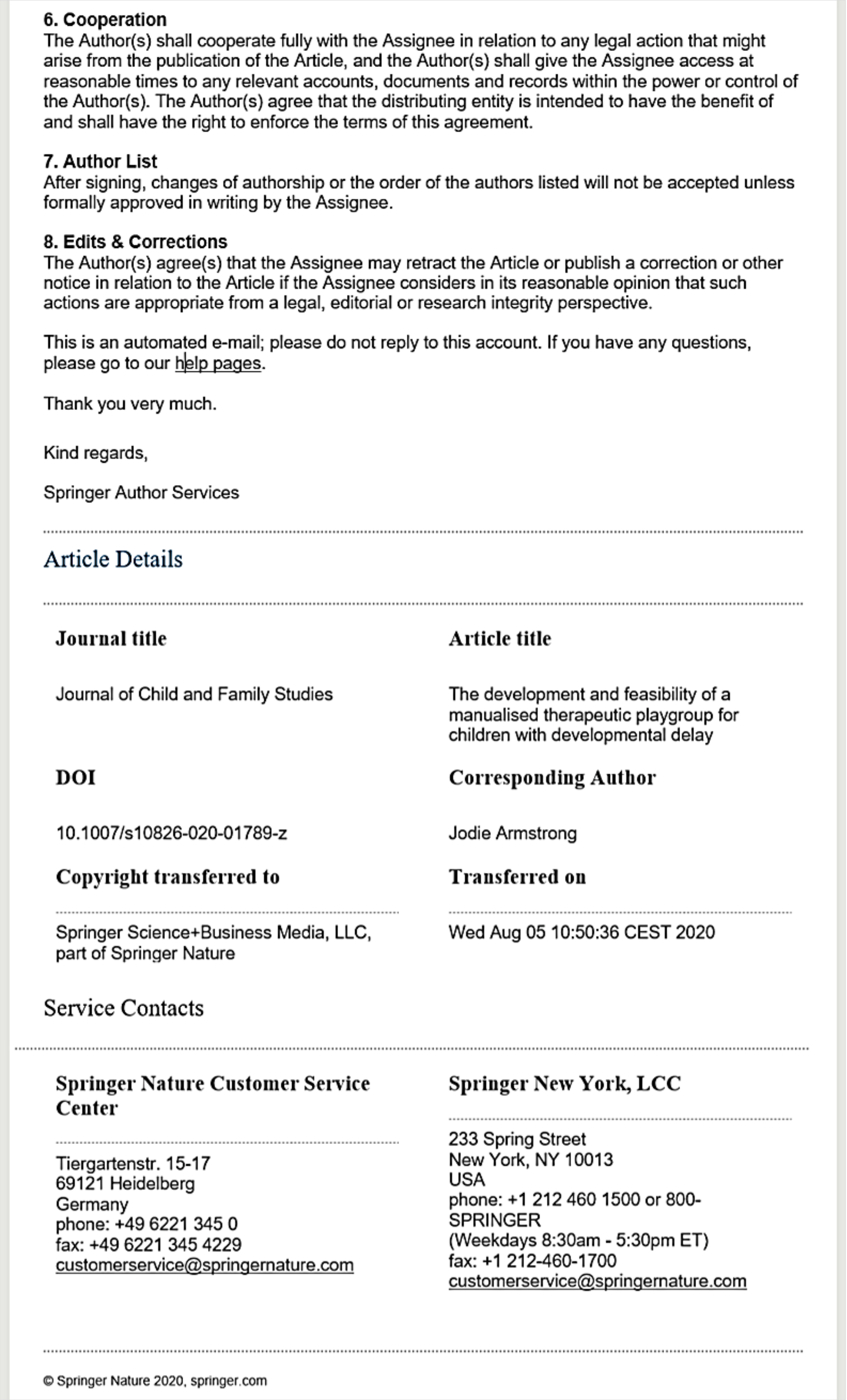

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