

School of Psychology

Online Sexual Activities and Sexual Identity Development

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Doctor of Philosophy
of
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Declaration of originality

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 March 2014. The proposed research study received human research ethics approval from the Curtin University Human Research Ethics Committee (EC00262), Approval Number # RDHS-64-16

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Abstract

Sexual identity and its components are important aspects of the self that affect relationships and behaviour, but are often difficult or uncomfortable for people to talk about. This characteristic makes it potentially challenging for people to explore and develop this aspect of identity. The internet offers an increasingly accessible environment for people to learn about and explore sexual identity, and accessing online sexual activities can affect identity development. Recent research has started categorising online sexual activities into three subtypes: solitary-arousal, partnered-arousal and non-arousal, and looking at the differences in participation. How sexual identity development is related to these different types of online sexual activities has not yet been examined.

The aim of this research was to learn if and how different types of online sexual activities are related to sexual identity development; if this relationship is different than it is for offline sexual activities; what some of the predictors are for participation; and what some of the sexual identity related outcomes from this participation are. To do this a contemporary definition of sexual identity was developed and used to look at the relationship between participation in the three types of online sexual activities and sexual identity development. Differences between participation in online and offline sexual activities and sexual identity development phases were also examined, including whether someone locates their 'real' sexual self online. Relationships between the predictors for participation and the outcomes related to sexual identity development, including components of sexual wellbeing and sexual communication, were investigated. Three studies were conducted as part of this thesis.

In the first study, 22 laypeople and eight professionals who work in the field of human sexual activity participated in semi-structured interviews about their thoughts regarding sexual identity. The study was conducted using Skype to facilitate interviews and was found to be an effective method for conducting research into a sensitive topic. Thematic analysis was used to find themes, which included components of sexual identity, outside influences and underlying characteristics. Sexual identity and sexual orientation were determined to be distinct, with sexual orientation being a component of sexual identity. Results provide a contemporary definition of sexual identity that is in line with how people

think about the concept, as well as matching up with how professionals use in it their work. This definition informed the measures chosen for the second and third studies.

The second study was a survey with Australian residents and the results were analysed in two parts. In the first part, the relationships between participation in three types of online and offline sexual activities, sexual identity and demographic information were explored. Openness to exploration was associated with greater participation in partnered and non-arousal online sexual activities and partnered-arousal offline activities. Openness to exploration, sexual identity commitment, and lower amounts of participation in online solitary-arousal activities were associated with sexual identity synthesis. The second part of the study examined participation in online and offline sexual activities, sexual identity and where someone locates their 'real' sexual self (online, offline, or both places). Locating the real sexual self online was associated with more participation in online sexual activities than locating the real sexual self offline or in both places. Locating the real sexual self online was also positively associated with being more open to exploring sexual identity (compared to the other two groups), while locating the real sexual self online was associated with sexual identity commitment and synthesis (compared to locating the sexual self in both places). When combined, these results demonstrate that participation in some types of online sexual activities is related to sexual identity exploration, suggesting that the internet is an environment where someone can learn more about their own identity. In addition, there is evidence that people in the different statuses of sexual identity development participate in online and offline sexual activities differently.

The third study was a quantitative study with 312 Australian emerging adults (aged 18–25) examining predictors of and sexual identity related outcomes (sexual wellbeing and sexual communication) from participation in the three subtypes of online sexual activities. Emotional regulation reasons were the most consistent predictors across all three subtypes of online sexual activity, although there were different emotional reasons for each subtype. Non-arousal activities had the most significant predictors. All three subtypes of online sexual activities had significant associations with the outcomes variables; and sexual identity commitment was a significant mediator of these relationships. Sexual identity

synthesis only significantly mediated the relationship between non-arousal activities and sexual communication.

The findings from this research have implications for research and education into online sexual activities and sexual identity development. Using subtypes of online sexual activities and comparing them to similar offline sexual activities demonstrates how people interact with these activities differently and that they fulfil separate needs. Including sexual identity development in this comparison suggests a potential reason for this difference, as well as providing evidence for different types of online sexual activities playing unique roles in sexual identity development. Findings from these studies add to existing research into the effect of the internet on aspects of sexual identity and expand them to include a broader definition of sexual identity. These findings suggest people use the internet to learn about their sexual identity and they highlight the importance of educating people on how to assess online sources of information.

Dedication

To my grandmothers, whose responses to my interest in studying sex ranged from ‘ohh, Jessie’ to telling me about visiting a farm and learning how cows are inseminated. Thank you for always supporting my adventures, even when they took me far away.

Acknowledgements

I want to start with thanking my supervisors, Associate Professor Lynne Roberts and Professor Barbara Mullan, who worked with me through this adventure. I always left our meetings feeling more confident than when I went in and have learned so much. You have both been amazing to work with and so supportive through all of the changes to the project and various life, work, and academic events that arouse during this time. I could not have asked for better support and guidance.

I want to thank everyone who participated in my studies. It's amazing that so many people took the time to talk to me about sex and sexual identity and were willing to answer some very personal questions.

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I acknowledge that Curtin University works across hundreds of traditional lands and custodial groups in Australia, and with First Nations people around the globe. I wish to pay my deepest respects to their ancestors and members of their communities, past, present, and to their emerging leaders. My passion and commitment to work with all Australians and peoples from across the world, including the First Nations peoples are at the core of the work I do, reflective of my institutions' values and commitment to the role as leaders in the Reconciliation space in Australia.

Publications and presentations arising from this thesis

Journal articles

The papers presented in Chapter 2 of this thesis have been published in the journals of *Qualitative Research in Psychology* and *Translational Issues in Psychological Science*.

Sipes, J. B. A., Roberts, L. D., & Mullan, B. (2019). Voice-only Skype for use in researching sensitive topics: a research note. *Qualitative Research in Psychology*, 1-17. <https://doi.org/10.1080/14780887.2019.1577518>

Sipes, J. B., Mullan, B., & Roberts, L. D. (2020). Ethical considerations when using online research methods to study sensitive topics. *Translational Issues in Psychological Science*, 6(3), 235.

The papers presented in Chapters 3, 4 and 5 of this thesis are currently under review with peer-reviewed journals.

Sipes, J. B., Roberts, L. D., & Mullan, B. 'Defining Sexual Identity: Descriptions and Thoughts from Professionals and Emerging Adults.' Chapter 3

Sipes, J. B., Mullan, B., & Roberts, L. D. 'Online and Offline Sexual Activities and Sexual Identity Development.' Chapter 4

Sipes, J. B., Roberts, L. D., & Mullan, B. 'Location of the "Real" Sexual Self and Participation in Online and Offline Sexual Activities and Sexual Identity Development.' Chapter 5

Conference and public presentations

Sipes, J. B., Roberts, L. D., & Mullan, B. (2017, April). *Developing a Definition of Sexual Identity with University Students*. [Oral presentation.] Society of Australasian Social Psychologists, Melbourne, Australia.

Sipes, J. B., Roberts, L. D., & Mullan, B. *Developing a Definition of Sexual Identity*. [Oral presentation.] Dennis Glencross Research Seminar, Perth, Australia.

Sipes, J. B. (2017, September). *Consideration for Using Skype in Sensitive Topics Research*. [Oral presentation.] Mark Liveris Research Student Seminar, Perth, Australia. Won Best Presentation Award.

Sipes, J. B., Roberts, L. D., & Mullan, B. (2020, July) *Online Sexual Exploration as Part of Understanding Sexual Identity*. [Poster and Video Presentation.] International Academy of Sex Research Virtual Conference.

Sipes, J. B., Mullan, B., & Roberts, L. D. (2020, November). *Sexual Exploration Through Online and Offline Sexual Activities and the Effect of Being in a Relationship*. [Video Presentation.] Society for the Scientific Study of Sexuality Virtual Conference.

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Contents

Declaration of originality	i
Abstract	iii
Dedication	vi
Acknowledgements	vii
Acknowledgement of Country	viii
Publications and presentations arising from this thesis.....	ix
List of figures	xiv
List of tables.....	xiv
Chapter 1 Introduction	1
Sexual activities	2
Sexual identity.....	4
Aims	9
Study 1	9
Study 2	11
Methodology	11
Thesis Organisation.....	12
Chapter 2 Process and ethical considerations	15
Legal considerations.....	15
Technological considerations.....	16
Dealing with distress	17
Participant anonymity	18
Outcomes of procedures implemented based on ethical considerations.....	18
Conclusion	19
Ethical considerations when using online research methods to study sensitive topics	20
Abstract	20
Public significance statement.....	20
Conclusion	25

Voice-only Skype for use in researching sensitive topics: a research note	26
Abstract	26
Introduction	27
Using voice-only Skype in a sexual identity study	32
Discussion and conclusion	40
Chapter 3 Defining sexual identity	45
Abstract	45
Introduction	46
Present study.....	50
Methods	50
Analysis	52
Results	53
Discussion	64
Chapter 4 Online and offline sexual activities and sexual identity development	69
Abstract	69
Introduction	70
Present study.....	75
Method.....	77
Results	81
Discussion	90
Chapter 5 Locating the real self online and offline	97
Abstract	97
Introduction	98
Present study.....	101
Method.....	102
Planned analysis	105
Results	105
Discussion	113
Chapter 6 Discussion	117
Sexual identity definition	117

Sexual identity development	118
Different online sexual activities	120
Implications.....	122
Limitations	124
Conclusion	126
References	127
Appendices	155

List of figures

Figure 1.1	Thesis organisation	13
Figure 4.1	Online partnered-activities graph	85
Figure 4.2	Online non-arousal activities graph	86
Figure 4.3	Offline partnered-arousal activities graph	88

List of tables

Table 1.1	Theories used in this thesis	8
Table 4.1	Demographics	77
Table 4.2	Descriptive statistics and intercorrelations	82
Table 4.3	Coefficients for multiple moderation effects of relationship status and gender in the relationship between openness to exploration and online sexual activities (N=335)	84
Table 4.4	Coefficients for multiple moderation effects of relationship status and gender in the relationship between openness to exploration and offline sexual activities (N=335)	87
Table 4.5	Regression predicting identity synthesis (N=335)	90
Table 5.1	Demographics	107
Table 5.2	Means and Standard Deviations	109
Table 5.3	Results of the Kruskal-Wallis H and Mann-Whitney U between real sexual self locations and online and offline sexual activities and behaviours	110
Table 5.4	Results of the Kruskal-Wallis H and Mann-Whitney U between real sexual self locations and identity	112

1 Chapter 1 Introduction

2 When people began to get internet services in their homes in the late 1980s to early
3 1990s in Australia (Clarke, 2004), going on the internet was a very deliberate
4 activity as people had to use dial-up internet connections that worked on phone
5 lines, making people choose between phone or internet use (*Throwback Thursday:
6 The days of dial-up*, 2018). Over time the internet has become much more
7 accessible with people able to have almost constant internet access thanks to smart
8 phones and wireless internet (Corbett et al., 2019). Going online no longer requires
9 much, if any, thought. Early online communication involved interacting with others
10 through chatrooms, newsgroups around common interests, and email (Suler, 1999).
11 Through these interactions people could express and explore different identities
12 online and use the anonymity provided by the internet to pretend to be someone
13 different than they were in their offline, or 'real' lives (Turkle, 1995; Valkenburg et
14 al., 2005). With increasing use of social media, people are presenting more of
15 themselves online (Nadkarni & Hofmann, 2012). Having an online presence is
16 common through Facebook profiles, Twitter, Instagram and TikTok accounts (to
17 name a few) (Ramshaw, 2020). Additionally, online dating has become more
18 common (Stoicescu, 2019), with people having access to not just online dating sites,
19 but to dating apps such as Tinder on their phones, which can be accessed as long as
20 there is an internet connection. Beyond dating, people can find jobs, houses, friends,
21 activities, participate in community and shared interest groups, protest, and shop
22 online (N.A., 2020). While these all have offline counterparts, there is increasing
23 participation and reliance on having access to these things online (Reglitz, 2020). In
24 high income countries life can be considered 'digitised' as many of the above
25 activities are engaged in with little thought (Lupton, 2015). In 2015 when this thesis
26 was started there was more of a distinction between online and offline. Since that
27 time making the distinction between online and offline activities has become less
28 useful, however online and offline activities still have distinct qualities and reasons
29 that people engage with them. Whether or not an online activity affects, or is used
30 by, someone differently than an offline activity is of increasing interest (DeHaan et
31 al., 2013; McInroy et al., 2019; Sorbring et al., 2014) because understanding
32 different effects will shape materials and guide resources related to these activities.

1 Sexual activities

2 Sexual activities are one type of activity that can be engaged in online or offline.
3 The term ‘sexual activities’ has a wide range of subcategories, including (but not
4 limited to) interacting sexually with others, reading sexual material, looking at
5 sexually explicit images or videos, generating sexual materials, learning about sex
6 and sexual health, dating, and being involved in a group or community related to
7 sex or sexually related issues (Cooper et al., 2003; Shaughnessy et al., 2017; Whitty
8 & Fisher, 2008). These activities can be grouped into a number of different
9 categories, depending on the research aims. This thesis uses three categories:
10 solitary-arousal (e.g. watching pornography videos alone), partnered-arousal (e.g.
11 sexual intercourse), and non-arousal activities (e.g. looking at sexual health
12 information) – all of which have both online and offline counterparts (Shaughnessy
13 et al., 2011). Others have used six categories (Döring et al., 2017). The three
14 categories were selected because they break down online sexual activities into three
15 methods that could be used to explore different aspects of sexual identity.

16 One advantage of online sexual activities is that they can be engaged with
17 anonymously or privately (Cooper, 1998); this can be an advantage over offline
18 sexual activities (Castro-Calvo et al., 2018). Use of privacy or incognito search
19 engines, accounts using non-identifying user names, and fake profiles, can all help
20 people access OSAs anonymously. While internet companies do keep track of what
21 people do online (Maris et al., 2020; Sanchez-Rola et al., 2019), engaging in
22 information, community, and partner-seeking OSA’s still provides a level of
23 anonymity and privacy that is more difficult to achieve offline. Offline interactions
24 involve being face-to-face and the possibility of encountering someone known,
25 whereas engaging online, particularly for solitary-arousal and non-arousal activities,
26 makes this less likely. Additionally people are not always aware that their data is
27 being mined, or the extent of this, so people may believe they are more anonymous
28 than they actually are (Maris et al., 2020).

29 Much of the research into online sexual activities focuses on solitary-arousal
30 activities, primarily accessing pornography (Döring, 2009) and the effects of
31 accessing these materials on relationships (Campbell & Kohut, 2017; Grov et al.,
32 2011), sexual attitudes, and behaviours (Albright, 2008; Barak et al., 1999;
33 Harkness et al., 2015; Peter & Valkenburg, 2008). Concerns around problematic use

1 or becoming addicted to online sexual activities have been raised (Castro-Calvo et
2 al., 2018; Cooper et al., 2004; Wéry & Billieux, 2016) due to the internet
3 facilitating easy and continuous access to these materials. However, positive
4 outcomes have also been reported, including the opportunity for self-expression and
5 improved sexual experiences and relationships, and positive effects on well-being
6 (Barrada et al., 2019; Döring, 2009; Grov et al., 2011; Hald & Malamuth, 2008;
7 Shaughnessy et al., 2014). The aim of this thesis is to investigate potential
8 connections between solitary-arousal activities and sexual identity development
9 statuses to better understand the potential role of these activities in identity
10 development.

11 Participation in partnered-arousal activities is of continued interest with
12 people using the internet for sexual activities with others, such as sexually engaging
13 with another person through video or chat, and playing an online game with a
14 sexual component (Craft, 2012; Döring et al., 2017; Jones, 2016; Shaughnessy et
15 al., 2011; Shaughnessy et al., 2017). Research into sexting behaviours has been of
16 increasing interest as more people engage in this behaviour as smartphones and
17 apps make it easier to share pictures and texts (Kosenko et al., 2017; Madigan, Ly,
18 et al., 2018). Positive and negative outcomes have been connected to this activity as
19 some people find it improves sexual and relationship satisfaction (Galovan et al.,
20 2018; Parker et al., 2013), while others feel coerced into participating and
21 experience negative mental health outcomes (Klettke et al., 2019). This use is
22 potentially related to sexual identity development as these interactive experiences
23 could be connected with learning about sexual interests and the development of this
24 aspect of sexual identity. Examining differences in online and offline partnered-
25 arousal activities will indicate if experiences with partnered-arousal activities in
26 general are related to sexual identity development or if online and offline
27 experiences have different relationships to development.

28 Online non-arousal activities can include looking for sexual health and
29 education materials (Mitchell et al., 2014; Simon & Daneback, 2013), participating
30 in community groups related to sex and sexuality (Cipolletta et al., 2017; McInroy
31 & Craig, 2019), and online dating (Couch & Liamputtong, 2008). These activities
32 can help people to get information they may not have access to offline (Bond et al.,
33 2009; Flanders et al., 2017), and to learn more about, and experiment with, their

1 sexual identity and sexuality (Kuper & Mustanski, 2014; Ross, 2005;
2 Subrahmanyam et al., 2006). Information about different orientations and genders,
3 types of sexual expression, and information about sexuality can all be accessed.
4 This new information can inform exploring (arousal and non-arousal based) identity
5 and can involve presenting as different orientations, gender roles, or trying different
6 sexual activities (Craft, 2012; Kosenko et al., 2018) as people learn about and
7 identify with them. Engaging with non-arousal activities has previously been found
8 to have an effect on sexual identity, with people exploring online and then changing
9 how they present offline (McKenna & Bargh, 1998; McKenna et al., 2001),
10 suggesting that these interactions with non-arousal activities do have an effect
11 outside of internet interactions. Examining participation in non-arousal activities
12 and sexual identity development statuses will expand on this previous research and
13 provide information about if and how this online exploration is related to sexual
14 identity development.

15 Who participates in the different types of online sexual activities, what they
16 access, and how they access or participate, are all going to have potential effects on
17 the development of a person's sexual identity. What is not known is whether
18 accessing and participating in online sexual activities has a different relationship to
19 sexual identity development than engaging in offline sexual activities.

20 Sexual identity

21 Sexual identity, broadly defined as how people think about and understand their
22 sexual self, guides who they are in relationships with, their values around sex, what
23 sexual activities they participate in, and their behaviour (Dillon et al., 2011). This
24 process of learning about and exploring the sexual self follows Marcia's (1966)
25 identity status model. This theory describes a process of identity development
26 through questioning identity, exploring identity, committing to an identity, and then
27 reaching identity achievement, or synthesis, where someone integrates the
28 developed aspect into their overall self (Marcia, 1966). This theory was built on
29 Eriksons' (1959) theory of psychosocial development and the process of conflict
30 and resolution (positive or negative) that occur at each stage of development. These
31 stages occur throughout the lifespan and include the following conflicts; trust vs.
32 mistrust; autonomy vs. shame and doubt; initiative vs. guilt; industry vs. inferiority;

1 identity vs. identity confusion; intimacy vs. isolation; generativity vs. stagnation;
2 integrity vs. despair. The status theory extends this by focusing on exploration and
3 commitment as the main processes of identity development (Marcia, 1966). As part
4 of this process four identity statuses were proposed; diffusion, lack of commitment
5 or exploration; foreclosure, commitment without exploration; moratorium,
6 exploration and no commitment; commitment, committing to an identity after a
7 period of exploration. These statuses have been used to assess the development of a
8 wide range of different aspects of identity (de Bruin-Wassinkmaat et al., 2019; Den
9 Boer et al., 2021; Dimitrova et al., 2018; Skorikov & Vondracek, 2011) including
10 sexual identity (Worthington & Mohr, 2002; Worthington et al., 2008) and has
11 continued to be used and developed as a useful way of thinking about identity
12 (Schwartz, Zamboanga, et al., 2013). Much of the focus on sexual identity
13 development has been with people who are exploring or who hold sexual minority
14 orientations or identities (see Chapter 3 for more detail) (Broido, 2000; Cass, 1979;
15 Cramer, 1980; Diamond, 2016; Eliason, 1996; Fassinger & Miller, 1997; Katz-
16 Wise, 2015; McCarn & Fassinger, 1996; Rust, 1993; Savin-Williams, 2011), but
17 recent research has included heterosexual identity development as well (Eliason,
18 1995; Hoffman, 2004; Muise et al., 2010; Worthington & Mohr, 2002; Worthington
19 et al., 2002). This includes a theory of heterosexual identity development by
20 Worthington et al. (2002) which incorporates Marcia's (1966) statuses. This theory
21 was later theorised as a process of universal sexual identity development (Dillon et
22 al., 2011; Worthington et al., 2008). In this theory sexual identity is developed first
23 from a place of compulsory heterosexuality (as is the presumed sexual orientation
24 across most societies). This is followed by either active exploration of sexual
25 identity or the experience of diffusion (lack of commitment or exploration). The
26 following status is deepening and commitment which, different to Marcia (1966),
27 this theory proposes that people do not need to explore to reach a state of
28 commitment, however there is increased self-understanding that comes from this
29 period of active exploration (McCarn & Fassinger, 1996). Lastly is synthesis, which
30 is when someone's sexual identity becomes consistent with their other identities and
31 is reflected in their attitudes towards others. The only way to reach this status is
32 through deepening and commitment after a period of active exploration. As with the
33 other identity development theories the period of exploration prior to commitment

1 is important for developing a cohesive and healthy sexual identity (Dillon et al.,
2 2011; Worthington & Reynolds, 2009). In high-income industrialised countries
3 development and exploration of sexual identity often begins in adolescence and
4 continues into emerging adulthood (between ages of 18 and 25), as people engage
5 in more relationships and develop other aspects of the self (Arnett, 2007). This
6 theory was also built on Erikson (1959) as changes in how people transition to
7 adulthood were observed (Arnett, 2000). Findings from previous research looking at
8 development and commitment to sexual identity/orientation suggest it occurs during
9 the period of emerging adulthood (Morgan, 2012). Developing sexual identity is
10 important for all people as it can not only affect how someone views themselves,
11 but how they view others as well (Worthington & Mohr, 2002). Table 1.1 illustrates
12 how these theories are related and used throughout the thesis.

13 Understanding and accepting sexual identity has an effect on wellbeing and
14 sexual health (Archer & Grey, 2009; Marcia, 1980). Going through a process of
15 exploring sexual identity and reaching sexual identity achievement is positively
16 associated with positive sexual self-concept, including feelings of optimism, esteem
17 and internal locus of control related to sexuality (Archer & Grey, 2009). Whereas
18 not having gone through a process of exploration and commitment has been found
19 to be negatively associated with sexual assertiveness and sexual satisfaction, and
20 positively associated to fear of sex (Archer & Grey, 2009). These findings suggest
21 there are mental health benefits to exploring and developing this aspect of identity
22 and understanding how development occurs is important for supporting mental
23 health around sex and sexuality.

24 Part of how sexual identity is developed is through exposure to different
25 materials and ideas, as well as experience and exploration with different aspects of
26 sexuality (Archer & Grey, 2009). As described previously, the internet offers access
27 to a wide range of different materials and ways for people to explore their sexual
28 self. Previous research has found connections between accessing sexually explicit
29 materials online (arousal-based materials) and exploring sexuality (Boies, 2002) and
30 development of some aspects of the sexual self in adolescence (Peter &
31 Valkenburg, 2008). Adults can also experience this development, and McKenna et
32 al. (2001) suggest that some people use online sexual (both arousal and non-
33 arousal) interactions to develop their 'real' sexual self before expressing it offline.

1 As the ways people access the internet has changed since this research was
2 conducted, it is unclear if this distinction, between online and offline selves, still
3 holds. There appears to be a connection between both arousal and non-arousal
4 activities and sexual identity development. How the different types of online sexual
5 activities affect sexual identity development, and by extension the wellbeing aspects
6 related to identity development, is less well known.

7 In order to examine how engaging in sexual activities on the internet affects
8 sexual identity, it is important to first define and describe sexual identity. There are
9 a number of different ways that researchers talk about sexual identity. For some, it
10 is the same thing as sexual orientation, being the way that people describe or label
11 their sexual and/or romantic attraction to other genders (American Psychological
12 Association, 2008) . For others, it is everything that makes up someone's sexual
13 self, including their gender attraction, interest in sexual behaviours, values around
14 sex (such as having sex before marriage), desired partner characteristics and
15 relationship types (Dillon et al., 2011; Worthington et al., 2008). Other terms,
16 including sexual self-concept, have also been used to describe this sexual self-
17 understanding (Deutsch et al., 2014; Snell, 1998). These conceptual definitions of
18 the sexual self and the terms used to describe the different definitions inform what
19 operational definitions are used in the course of research. The overlap of how these
20 terms are used and described, as well as their differences, can make it difficult to
21 tell what aspects of the sexual self researchers are referring to when researching and
22 writing about this subject. Understanding how the term is used, in particular how
23 people are currently using it, is important in being able to research sexual identity
24 development with consistency in order to compare findings across studies.
25 Additionally having clear and current conceptual definitions informs what questions
26 are asked, and ensures that the questions are relevant. This is key to conducting
27 effective research. Having an updated definition allows for research into sexual
28 identity to accurately assess the construct and learn about how sexual identity is
29 influenced.

Table 1.1 Theories used in this thesis

	Theory	Description	Where Used
Erikson (1959)	Theory of psychosocial development	People go through different developmental stages as they grow. In these phases different psychosocial aspects of the self are the focus of development. During each stage a process of crisis and resolution occurs where someone either achieves a positive or negative resolution, which can impact later development. Stages are gone through in a specific order/age range, but resolution can occur at any time. Identity development occurs around adolescence.	Influenced subsequent theories used in this thesis
Marcia et al. (2012)	Identity status model	Built on Erikson’s theory. People go through a process of questioning, exploring, and committing to identity before integrating that aspect of identity into their overall self. Identity development occurs around late adolescence and young adulthood.	Process of exploration and commitment to form identity is examined in studies two and three
Arnett (2000)	Emerging adulthood	Also built on Erikson’s theory. Emerging adulthood is between 18 and 25 and is theorised to be part of development in high-income/industrialised cultures. A time when people are becoming more independent and learning more about their own sexuality and relationship preferences (focus on love, work, and worldviews). Identity development occurs during this period.	Influenced focus on younger adults in studies and supports looking at development of sexual identity in adults.
Worthington et al. (2002)	Sexual identity development	Built on Marcia’s theory with a focus on sexual identity development. Suggests everyone goes through a process of exploration and commitment in developing sexual identity. Has an associated measure to assess sexual identity development.	Measure used in quantitative studies to examine stages of sexual identity development.

1 Aims

2 Exploration and experience are understood as ways that people develop identity,
3 including sexual identity (Cramer, 2004; Marcia, 1966; Marcia et al., 2012).
4 Although how this is done in offline environments is understood, researchers are
5 only beginning to understand the ways in which online sexual activities, exploration
6 and experiences relate to sexual identity development. Examining the similarities
7 and differences in the relationships between online and offline sexual activities and
8 sexual identity development is important to understanding whether or not online
9 sexual activities have a similar relationship to identity development as offline
10 sexual activities. Using subtypes of sexual activities will provide more specific
11 information about the relationships between sexual activities and sexual identity
12 development than just looking at sexual activities overall. In addition using a broad
13 definition of sexual identity, and not focusing solely on sexual orientation, will add
14 to the understanding of sexual identity development generally and not just for a
15 specific component. Knowing what environments and material people are engaging
16 with, and what aspects of sexual identity development they are related to, can guide
17 resources, materials, and education to help people learn about themselves.

18 The overall aim of this thesis therefore was to better understand if and how
19 online sexual activities are related to sexual identity development. As there are
20 multiple definitions of sexual identity, the first aim of this study was to develop a
21 definition of sexual identity to better understand this term and guide the other
22 studies in this thesis. The second aim was to better understand the connections
23 between different types of online and offline sexual activities (solitary-arousal,
24 partnered-arousal and non-arousal activities) and sexual identity development
25 statuses. Two studies were conducted to meet these aims.

26 Study 1

27 The first study was designed to develop a definition for sexual identity that would
28 be used throughout the rest of the research. Following an extensive search of the
29 research literature, two different measurement tools were selected as options for
30 assessing how people thought about their sexual identity in further studies: The
31 Measure of Sexual Identity Exploration and Commitment (Worthington et al., 2008)
32 and the Multidimensional Sexual Self-Concept Questionnaire (Snell, 1998).

1 However choosing the appropriate measure for use in my further studies depended
2 on the definition of sexual identity used. Based on the items in both measures,
3 questions to explore what people think sexual identity is, and what components it
4 includes, were developed. Online interviews were conducted with 22 Australian
5 laypeople between the ages of 18 and 30, and with eight professionals in the area of
6 human sexuality from Australia and the United States. Due to the sensitive nature of
7 the topic and a desire to make people feel as comfortable as possible I decided to
8 conduct the interviews with laypeople using voice-only Skype. This was chosen as
9 it would allow people to participate from a comfortable place, participate
10 anonymously if they wanted, and over a secure connection. Telephone interviews
11 have been established as an effective method for sensitive topic interviews (Trier-
12 Bieniek, 2012) and using Skype allowed me to find out if it would be similarly
13 effective. Thematic analysis was used to analyse the results and comparisons were
14 made between laypeople's and professionals' conceptualisations of sexual identity.
15 Both groups had similar ideas of what sexual identity comprised, however the
16 professionals' descriptions were more detailed due to extensive time spent working
17 in the area of human sexuality. A definition of sexual identity was developed:
18 'sexual identity is the individual pattern of attraction, interest, and thoughts
19 someone has around sexual partners and sexual behaviours, which is influenced by
20 their immediate environment and larger cultural surroundings, as well as the
21 lifelong experiences that add to their sexual knowledge and self-understanding'.
22 This definition best supported the use of the Measure of Sexual Exploration and
23 Commitment (Worthington et al., 2008) to assess sexual identity development in
24 my later studies. This was due to this measure assessing sexual identity more
25 broadly and without specific components. The results of this study also guide how
26 sexual identity and sexual orientation are used throughout this thesis. As per the
27 above definition, sexual identity includes a wide range of aspects that people use to
28 think about their sexual self, which includes sexual orientation. Sexual orientation is
29 used in this thesis to describe how people label their sexual/romantic attraction to
30 other genders.

1 Study 2

2 The primary aim of the second study was to explore the relationship between
3 participation in online and offline sexual activities and sexual identity development.
4 I wanted to compare online and offline sexual activities in order to examine
5 differences in the types of sexual activities people participated in, and to see if these
6 differences were related to different aspects of sexual identity development.
7 Information was collected on Australians' participation in comparable online and
8 offline sexual activities and behaviours, sexual identity development, location of the
9 real sexual self, and demographics to achieve the aim of this study. The results are
10 presented in two parts. The first included 335 participants and examined
11 participation in the three different types of online sexual activities (solitary-arousal,
12 partnered-arousal and non-arousal) and the sexual identity development statuses of
13 openness to exploration, commitment and synthesis. Openness to exploration was
14 associated with participation in partnered-arousal and non-arousal online activities
15 and partnered-arousal offline activities. These relationships were mediated by
16 relationship status and gender. Sexual identity synthesis was associated with
17 openness to exploration, commitment and lower amounts of participation in
18 solitary-arousal activities.

19 The second part of this study had 338 participants and examined where
20 someone located their real sexual self (online or offline), sexual identity
21 development statuses, and participation in online sexual activities. People who
22 located their real sexual self online participated in more online sexual activities and
23 were more open to exploring sexual identity than people who located their real
24 sexual selves offline or both online and offline. The results from these studies
25 indicate that online sexual activities can influence sexual identity development.

26 Methodology

27 For this research I used a multi-methods design, using both qualitative and
28 quantitative research methods. This project was designed with the aim of each study
29 building on the findings from the study before. The definition of sexual identity
30 developed in the first study influenced how sexual identity was defined and
31 measured in subsequent studies. Conducting qualitative research in the first study
32 allowed for gathering detailed information on sexual identity from a range of

1 perspectives. Using online quantitative methods for the second study helped to
2 gather data from a large number of participants who had internet access and
3 therefore the ability to participate in online sexual activities.

4 The position taken in this research uses a positive sexuality framework,
5 acknowledging that there are risks to online sexual activities and negative
6 outcomes, while also considering positive outcomes (Williams et al., 2015).
7 Committing to a sexual identity and achieving a synthesised sexual identity are
8 considered positive developmental outcomes with benefits to mental health and
9 wellbeing (Archer & Grey, 2009). With this in mind, using a perspective that
10 focuses on wellbeing in relation to sexual identity fitted with the aims of this
11 research.

12 Thesis Organisation

13 The remainder of the thesis is presented as a series of completed manuscripts.
14 Chapter 2, the ethics and process chapter, includes a published manuscript on ethics
15 in online research and a published manuscript on using the online voice-chat service
16 Skype to complete interviews. Chapter 3 presents a study on creating a definition of
17 sexual identity. Chapter 4 presents the first part of Study 2 on participation in online
18 and offline sexual activities and sexual identity development. Chapter 5 presents the
19 second part of Study 2 on where someone locates their ‘real’ sexual self and the
20 relationship of this to their participation in online and offline sexual activities and
21 sexual identity development. Finally, Chapter 6 presents a discussion of the overall
22 research findings.

23

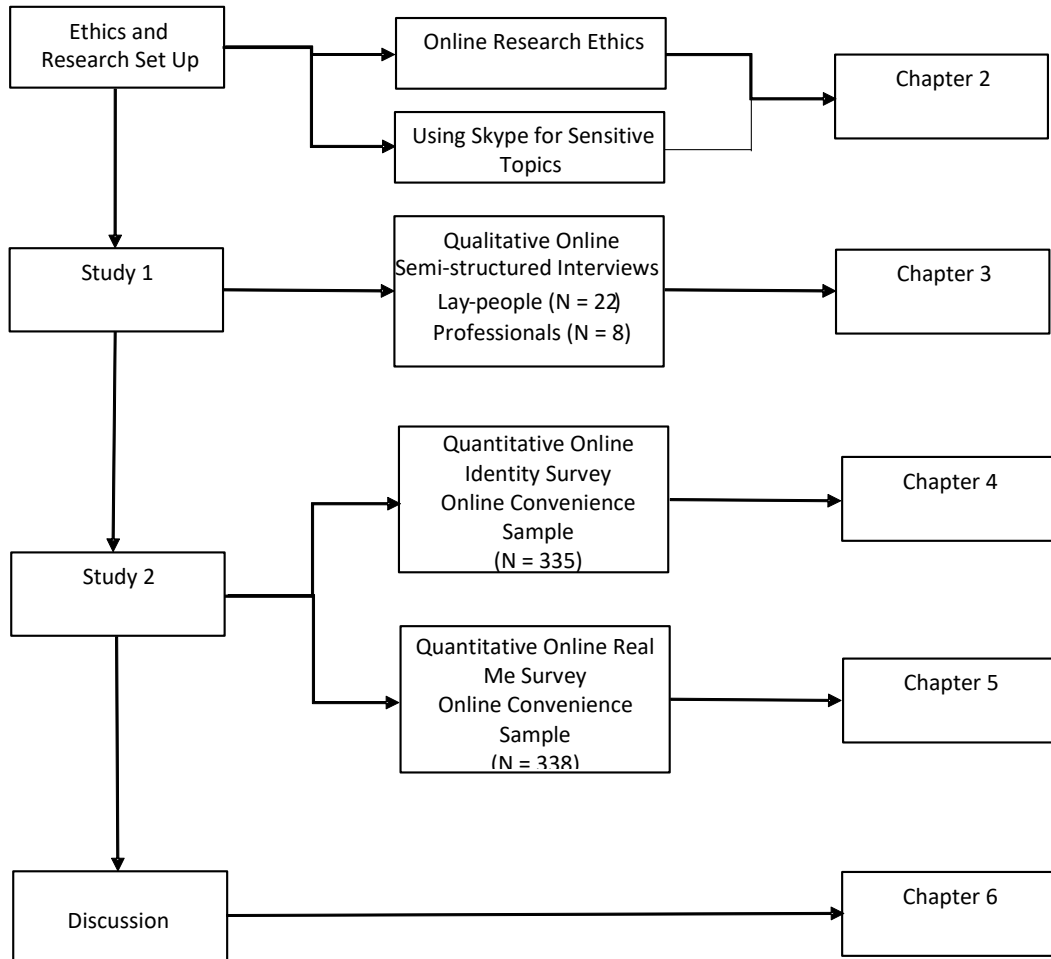
24

1

2 Figure 1.1 Thesis organisation

3

4



Chapter 2 Process and ethical considerations

Sex and sexuality can be sensitive topics for many people. Conducting research in this area involves asking people about intimate aspects of their lives that they may not be used to talking about or sharing with strangers. Key considerations while designing and conducting this research were ensuring that the questions asked were only as personal or intimate as needed, and that people would be as comfortable as possible while participating.

Research into sensitive topics, which include topics that may cause emotional or psychological distress, and/or physical harm (Elmir et al., 2011), involves being aware of the ways in which the questions being asked may affect the research participants. While it is not possible to anticipate every possible outcome, reasonable attempts should be made ahead of time to assemble ways to assist participants should they encounter difficulties through participating in the research. As I was asking people about their sexual selves and their sexual activities, it was important to do this in a way that would be sensitive to possible issues. To address this a number of extra steps were taken to ensure the questions being asked were appropriate. Precautions were also taken to ensure both the participants and researchers were protected. These included having all of the questions and measures reviewed by a University lawyer to double check that no illegal activities were being asked about; a meeting with a University IT specialist to discuss online security; and a meeting with a counsellor from the University's counselling services centre to compile resources for participants should any distressing issues come up during the course of the interviews; and brainstorming ways for the researcher to respond to participants' distress during interviews.

Legal considerations

All of the proposed questions for the first three studies were reviewed by a University lawyer to check that they were not likely to uncover participation in illegal sexual activities. It was not the aim of the research to address illegal activities, but unintentionally asking about them was seen as a possibility because laws around sexual activities vary not only by country, but within countries as well. All of the questions submitted passed this check and it was determined that a

reporting procedure, should an illegal activity be disclosed, would not be necessary. Questions for the third study were not included in this check because the measures would be determined based on the outcomes of the first two studies. All of the items in the third study that were about specific online sexual activities came from the second study. Some aspects of the design of the studies also included precautions to avoid addressing illegal sexual activities. First, both of the quantitative studies were restricted to participants residing in Australia. This was done to limit the range of possible illegal sexual activities that could be uncovered. While states and territories within Australia do have different laws about sexual activities, such as age of consent, they are still generally consistent in their laws. Second, the study had a minimum participant age of 18, which is above the age of consent for participation in sexual activity in Australia (16 or 17 depending on the state or territory (El-Murr, 2017)) and is the age when someone is considered an adult in Australia (White, 2007).

Technological considerations

For the meeting with IT, the main concerns addressed were how to safely conduct the interviews for both participants and myself, and what to do if a participant behaved sexually inappropriately. Prior to the meeting, it had already been decided to use Skype to facilitate conducting the interviews in order to reach participants in different locations across Australia and help ensure participants could participate anonymously (see ‘Voice-only Skype for use in researching sensitive topics: a research note’ at the end of this chapter for details). In this meeting, it was decided to conduct the interviews using voice only without video, despite video being a possibility with Skype. Part of this was to help make participants more comfortable, but part of it was also to limit participants’ ability to behave sexually inappropriately. Other sexuality researchers have experienced sexual harassment from participants because participants think that an interest in sex and sexuality as a research topic indicates being open to sexual advances (Zurbriggen, 2002). Due to the set-up of the study and the use of Skype facilitating anonymity, there was limited ability to trace or report anyone who was sexually inappropriate or abusive. If someone was inappropriate, closing Skype and blocking the person were the recommended steps. I also made a new Skype account for use purely with this

research so I would not have to share my personal contact information. All of the interviews were conducted on campus to increase security, and so any location tracing would lead back to the University.

Dealing with distress

The final step involved meeting with a school counsellor to determine the resources available for participants should they experience distress, and to discuss how to handle disclosures of potentially distressing sexual experiences. The counsellor provided a list of national hotlines and websites of different groups that provide support for mental and sexual health. The plan was to have links and information for these available during interviews so that they could be sent to participants through the chat function on Skype if something distressing came up during the interviews and the participant wanted the information. These links would also be provided in the information sheets for the studies.

Possible responses to the disclosure of distressing events were brainstormed. The primary plan developed was to assess how the participant sounded while discussing the issue, check in with how they were feeling if they sounded distressed, and give them the opportunity to change topic or stop the interview. Part of the challenge of this is that just because someone is talking about something that may be considered distressing, such as sexual assault, does not mean they are distressed when discussing it. Paying attention to how someone sounded, checking in if unsure, and acknowledging that a disclosure may have been difficult, were all part of the response process.

In addition to addressing how to respond in the moment to a disclosure, the discussion covered how to process the disclosure after the interview. Qualitative research can be considered emotion-work as researchers listen to people tell personal stories, which can sometimes be emotional or about a distressing experience (Dickson-Swift et al., 2009) and it is important to process these disclosures so they do not cause lasting distress. To help process the interviews, I kept a reflexive journal about the interviews, practiced breathing exercises to help relax if necessary, discussed challenging interviews with supervisors, and had the option of additional counselling sessions if needed.

Participant anonymity

Within the quantitative studies, all of the data was collected online through the survey platform Qualtrics. Using this platform, people were able to participate anonymously and easily leave the study by simply closing the browser window. Making it so that participants could be as anonymous as possible was important due to the topic, and this platform was an effective way to do so.

In an additional effort to both keep participants anonymous and to collect only needed information within both the qualitative and quantitative studies, there were specific decisions made about what demographic information to collect. For both of the quantitative studies, age, gender identity, sexual orientation and relationship status were collected. For the second quantitative study, whether or not someone was working or studying, and if they were doing so from home, was also collected. For the qualitative study, only gender identity and age were collected. This was done to limit personal data collected to avoid identifying participants and to only ask questions that were required to address the research questions. With the qualitative data I wanted to limit the ability for quotes to be linked to participants, so I limited the demographic information collected. It is possible that additional descriptors, such as sexual orientation, would have been useful in better understanding differences in perspective; however, I wanted to balance getting information about self-descriptors and not asking for more personal information than I felt was necessary.

Outcomes of procedures implemented based on ethical considerations

All of these different steps before the commencement of data collection helped to ensure that protections were in place for both the participants and myself. Some of these precautions were for unlikely events, such as someone trying to find my location, but thinking through different possible outcomes helped make me feel prepared for conducting the research. During the course of this research, I was fortunate to not encounter any of the worst-case scenarios for which I had prepared. In the interviews no-one disclosed participation in any illegal activities or expressed distress from participating in the interviews. A couple of participants did talk about some previous difficult experiences, but none in a way that came across as distressed. As a precaution, one participant was asked if they wanted some

additional resources, but they said that they were okay and declined. With regard to the limited demographics collected in the qualitative study, I had one participant who was relieved to not be asked their sexual orientation because of how they felt about sexual identity and labelling orientation. Other participants chose to disclose this, but only as they felt it was relevant to their responses to the questions asked. No issues were noticed or reported from using Qualtrics to collect the data in terms of privacy or discomfort to responding to personal questions. There were participants who did not complete the questionnaires, but it is not known if this is due to fatigue or boredom from participating, or due to the nature of the questions.

Conclusion

Meeting with representatives from different departments of the University about potential issues related to the research ensured it was being conducted ethically and with consideration of the people involved. Brainstorming potential issues also made the potential of responding to them, even the worst-case scenarios, seem more manageable. All of the planning and contacts with people who could assist if there was a problem also made me more comfortable with knowing that there could be situations for which I had not prepared. Building a support network and making myself aware of different resources was a helpful start to my PhD and gave useful guidance for how to conduct the research ethically and with sensitivity to the subject. Building on this process, I have published two journal articles relating to conducting research online. The first (Sipes et al., 2020) focuses on ethical considerations surrounding conducting research online into sensitive topics. The second (Sipes et al., 2019) looks specifically at Skype as a way to conduct qualitative sensitive topics research.

Ethical considerations when using online research methods to study sensitive topics

Note: The following paper has been published in *Translational Issues in Psychological Science*.

Sipes, J. B., Mullan, B., & Roberts, L. D. (2020). Ethical considerations when using online research methods to study sensitive topics. *Translational Issues in Psychological Science*, 6(3), 235.

Please note that changes to spelling and headings were made to this paper to ensure consistency throughout this thesis (see Appendix A: Publication 1 for the print version of this article).

Abstract

Conducting sensitive topics research online can allow researchers access to a wider range of participants with ‘sensitive topics’ experience, however additional ethical considerations need to be considered when conducting this research. Online research can either involve active or passive data collection, with each requiring extra thought around consent, anonymity, confidentiality, and data security. Suggestions for how researchers should begin thinking about ethical issues in online research around a sensitive topic are given.

Public significance statement

This commentary offers an introduction to the ethical considerations researchers should make when designing online research into sensitive topics with specific suggestions for both passive and active data collection methods.

Keywords: sensitive topics; online research; process ethics, procedural ethics; research ethics; informed consent

Sensitive research topics are those that may cause emotional or physical harm and/or psychological distress to participants or researchers involved in a study (Elmir et al., 2011; Lee, 1993). Both participants and researchers report that it can be difficult to participate in sensitive topics research. Participants are sometimes uncomfortable discussing sensitive topics and fear being judged (Bourne & Robson, 2015), while researchers can experience vicarious traumatisation (Sikes & Hall, 2019), difficulties in processing and appropriately responding to emotional stories (Dickson-Swift et al., 2009; Hanna, 2019), maintaining professional boundaries and ending relationships with participants (Fahie, 2014; Watson, 2009). Despite these challenges, a systematic review of the literature indicates that overall participants in sensitive topics research have positive experiences and even where they do experience distress, they feel it is still worth doing (Alexander et al., 2018). However, when conducting research on sensitive topics it is important for psychological researchers to be aware of the risks and have plans to help mitigate them. In this article we outline ethical considerations when using online research methods to study sensitive topics in order to minimise risk.

Using the Internet for data collection on sensitive topics

The internet provides access to large amounts of people, without being restricted by location, and is increasingly being used to both access research participants and conduct research. People with specific interests and experiences ‘gather’ on different websites and platforms online, making it easier for researchers to access populations of interest, including for research on sensitive topics.

Both qualitative and quantitative research can be conducted online, and may involve active (researcher generated data) or passive (using existing unsolicited data) data collection. Active qualitative research can be conducted through online interviews and focus groups, including video, audio, and text discussions, while active quantitative research can be conducted through online questionnaires. These methods yield similar response rates, results and data quality to offline methods (Joinson, 2001; Loomis & Paterson, 2018; Sturges & Hanrahan, 2004). Outside of directly engaging with participants, researchers also have access to existing data from web forums, blogs and social media posts, enabling passive data collection.

Online data collection holds several advantages for conducting research on sensitive topics. Firstly, using online technologies for active data collection

provides the potential for participants to remain anonymous, even in interviews. Using forums, email, or audio/video chat programs participants can create unidentifiable user names or email addresses to correspond with the researcher (Sipes et al., 2019). Secondly, conducting active research on sensitive topics online can also make it easier for participants to leave a study if they feel too uncomfortable to proceed, through simply logging out. Both participants and researchers can participate in the research from safe locations, reducing the risk of physical harm. Thirdly, the use of passive data collection online has the potential to be unobtrusive, avoid retraumatizing participants and provide a rich source of data (Burles & Bally, 2018).

In selecting an online data collection method for research on sensitive topics, whether it be active or passive, ethical researchers need to balance the potential benefits of the research against potential harm. Prior to commencing the research, this involves *procedural* ethics (i.e., identifying potential risks and benefits and obtaining ethical approval from an Institutional Review Board or Human Research Ethics Committee). This needs to be followed by *process* ethics (i.e., being sensitive to, and responding to, ethical issues as they arise during the course of conducting research) (see Roberts, 2015).

Ethical considerations for active online data collection

Active online data collection on sensitive topics typically involves recruiting participants through online communities. While many of these communities may be publicly accessible and/or easy to join, it is important for researchers to make sure they familiarise themselves with community norms or discuss their research with website administrators before approaching participants or advertising their studies. As part of procedural ethics, an assessment needs to be made regarding where the community sits on the public-private dimension and the potential impact of the research on both individual research participants and their community. Careful consideration of the potential benefits of the research against potential harm is required where the proposed research involves the use of deception or deceptive identities (Roberts, 2015)

We take the stance that institutional ethics approval (procedural ethics) should be required for all active online data collection for psychological research. Potential research participants need to provide informed consent before

participating in the research, and researchers have a responsibility to attend to further ethical issues that may arise during the conduct of the research as part of process ethics. Researchers conducting interviews online will be able to monitor for psychological distress in participants resulting from participating in the research, and a follow-up check-in email (developed as part of procedural ethics) can be used for the same purpose when conducting surveys on sensitive topics (Smith et al., 2018).

In addition to protecting research participants, it is important to protect the researchers. Hanna (2019) highlights the emotional labour involved in conducting research on sensitive topics online, noting that online research can be highly emotive and require empathy and emotional investment. Possible self-care strategies include reflexivity, supervisor/mentor support, and counselling (Hanna, 2019). As part of procedural ethics, researchers can prepare guidelines on how to respond to potentially distressing disclosures and identify services to support both the participants and themselves if additional support is needed (Sipes et al., 2019). Specific research profiles can be set up and closed upon completion of the study to prevent blurring of boundaries between research and personal profiles (Hennell et al., 2019).

Ethical considerations for passive online data collection

Passive online data collection typically involves the ‘scraping’ and use of existing data from online settings that was never intended for research purposes. A key consideration is whether the originators of such data should be treated as authors or research participants (Roberts, 2015), and therefore whether institutional ethics approval is required. Burles and Bally (2018) argue that obtaining informed consent for use of existing online data (and hence treating the originators of the data as research participants) is especially important when it is on a sensitive topic, due to the increased vulnerability of the people involved, but also notes the needs for this to be weighed against potential effects on the functioning of the community.

Obtaining consent for passive online data collection studies is challenging due to the large sample sizes typically involved (Norval & Henderson, 2019) and difficulty in tracking down respondents. Researchers are already investigating the feasibility of automated dynamic consent procedures to expedite this process (Norval & Henderson, 2019), an option that requires careful ethical consideration.

These procedures use algorithms to assess potential participants' past behaviour, such as how publicly they share posts on social media, to predict if they would consent to their data being used in research without needing to directly ask them. Even where consent is sought from key participants, if data collection is ongoing, the potential for involving others who have not consented exists (e.g., where others comment on an original participants posts; Hennell, Limmer, & Piacentini, 2019) and as part of procedural ethics procedures will need to be developed for dealing with this.

When writing up findings from passive data collection, a key consideration is protecting the privacy of research participants and their online communities. The risk of participant identification is heightened when quoting directly, as the potential exists for readers to conduct online searches to find the original source and re-identify data (Narayanan et al., 2016). For example, Ayers et al. (2018) reported that in the majority of reviewed papers that include verbatim tweets from Twitter, reverse identification of the original poster was possible. Reverse identification is of particular concern when community members only learn they have been the subject of research after the completion of the research, and may negatively impact on the future functioning of the community (Roberts, 2015). Ayers and colleagues (2018) make a series of recommendations for ensuring this does not occur, including authors presenting aggregated findings only, editors refusing to publish where reverse identification is possible, and ethics committees attending to privacy issues.

Other risks requiring ethical consideration apply to both active and passive online data collection. As part of procedural ethics, researchers need to develop a plan for dealing with psychological distress and clinical issues that might be encountered (e.g. suicidal intentions in social media posts; Young, & Garrett, 2018). Participants need to be advised of the limits to confidentiality when there is a likelihood of serious harm to self or others (Hennell, et al., 2019). Researchers also need to ensure the security of the data collected and learn how, and what, is being transmitted and stored, making sure that the methods are secure and only accessible to the researchers (Nosek et al., 2002). Information that is not part of the main research aim, such as IP addresses, can be collected as part of the data gathering process (e.g. through survey programs or data mining) and researchers need to be aware of how this additional information is stored and how they want to handle it to

avoid breaching participants' confidentiality (Vallejos et al., 2019). Whether data collection is active or passive, ethical consideration of unexpected issues that arise will be required as part of process ethics.

Conclusion

This commentary has outlined some of the key ethical considerations when conducting research online on sensitive topics. The underlining premise is the need for context specific ethical considerations that comply with disciplinary research ethics requirements. We have highlighted the importance of both procedural and process ethics, arguing that ethical considerations do not cease once ethics approval is granted. Ongoing technological developments mean that variations on the issues outlined are likely to arise over time. We encourage researchers to actively engage in ethical considerations, drawing on disciplinary ethical documents, the ethical guidelines from the Association of Internet Researchers (franzke et al., 2020) and discussion with ethical review committees.

Voice-only Skype for use in researching sensitive topics: a research note

Note: The following paper has been published in *Qualitative Research in Psychology*.

Sipes, J. B. A., Roberts, L. D., & Mullan, B. (2019). Voice-only Skype for use in researching sensitive topics: a research note. *Qualitative Research in Psychology*, 1-17. <https://doi.org/10.1080/14780887.2019.1577518>

Please note that changes to spelling and headings were made to this paper to ensure consistency throughout this thesis (see Appendix B: Publication 2 for the print version of this article).

Abstract

This research note adds to a growing body of literature supporting Skype as an effective method for conducting interviews by describing its use in research on a sensitive topic in psychology. Considerations before beginning research and the advantages and disadvantages of using Skype in sensitive topics research are discussed. Drawing on our own research using voice-only Skype for conducting research into sexual identity, we conclude that Skype can be an effective method for getting detailed information from participants and should be considered as a useful tool in conducting research into sensitive topics. Key steps for setting up Skype for research on sensitive topics are included in a checklist.

Introduction

Researching sensitive topics can be difficult, where getting participants to honestly discuss topics that they may find distressing or uncomfortable, is vital to the integrity of the results. Sensitive topics are considered those that may cause physical harm, emotional or psychological distress to the participant or researcher (Elmir et al., 2011; Lee, 1993). Risk of physical harm can come from researching in violent places or with violent groups, while emotional distress often comes from discussing topics that are private or emotionally charged that someone may not be accustomed to talking about (Lee & Renzetti, 1990). For example, in a study on experiences of women who had had babies removed from their care immediately after birth, Marsh et al. (2017) described the importance of building trust in order to recruit participants and encourage discussion on the topic as these women had often experienced discrimination in other settings and were sceptical of why they were being researched. Participants were reluctant to participate and discuss these thoughts and feelings because they were concerned about being judged and had a distrust of authority figures. Other researchers have reported similar issues, finding it difficult to get participants to be comfortable discussing sensitive issues (Lee, 1993), reporting participants feared being judged (Bourne and Robson, 2015) or reporting the emotional intensity participants may experience in discussing sensitive issues, to the extent that that they may withdraw from the research (Wolgemuth et al., 2015).

As psychology often deals with sensitive topics it is important for researchers in this area to be aware of ways to create a suitable environment for interviews. Building rapport, being aware of signs of distress, and conducting the interview in a safe and comfortable environment can all work towards this aim (Bouchard, 2016; Dickson-Swift et al., 2007; Elmir et al., 2011). Researchers should be aware of the participant's tone of voice, the words they choose, and their body language, as these signs can help to indicate how the participant is responding to the interview (Holt, 2010; Seitz, 2015). Face-to-face interviews provide the researcher with immediate verbal and non-verbal feedback. If distress is noted, the researcher responds appropriately, in the form of breaks, comfort, or termination of the interview (Corbin & Morse, 2003). Conducting the interview in a space in which both the participant and researcher are comfortable can make this easier to

manage (Dickson-Swift et al., 2008). However, face-to-face interviews typically require either the participant, the researcher, or both to meet in an unfamiliar place which can add a level of discomfort and incur additional time and cost commitments in the form of travel, and thus alternatives need to be considered.

Face-to-face interviews may also be uncomfortable when discussing sensitive topics (Sturges & Hanrahan, 2004). Some participants may find it easier to discuss uncomfortable or intimate topics when they have physical distance from the researcher. Using technology can provide participants this distance while still maintaining detailed data collection equivalent to face-to-face interviews (Adams-Hutcheson & Longhurst, 2017; Corkrey & Parkinson, 2002; Joinson, 2001; Sturges & Hanrahan, 2004). Sturges and Hanrahan (2004) reported no substantial difference in the content or depth of responses when comparing data from telephone and face-to-face interviews. Joinson (2001) found that participants who engaged in conversation using computer-mediated communication, where they were visually anonymous, disclosed more information about themselves than non-anonymous visible participants. Both telephones and computers provide participants with additional levels of privacy and anonymity, while not compromising the quality of the data collected (Chanakira et al., 2014; Oates, 2015). While telephone interviews do require the participant to share their phone number with the researcher, computer-facilitated research allows participants to be anonymous (Sturges & Hanrahan, 2004). Participants can invent new unique identifiers for the interview, participate through text chat or voice-only communications, limiting the ability for them to be identified by researchers which may be particularly useful when researching sensitive topics (McDermott & Roen, 2012).

When participating in sensitive topics research participants may be particularly concerned about potential identification or people they know learning about their involvement in the topic (Fahie, 2014). Other researchers have found that the ability to participate anonymously, such as through audio-only Skype, encouraged people to participate who were interested, but concerned about identification (AlKhateeb, 2018). While this level of anonymity might raise concerns about participants being honest and 'who they say they are' in the interviews, it is believed that this is no more of a concern in online qualitative research as it is in other forms of research, both online and offline and qualitative

and quantitative (Bouchard, 2016; O'Connor et al., 2014). Using a synchronous, instead of an asynchronous method such as email, for interviews may help assure the honesty of the participants responses as they are part of an ongoing, real-time conversation where there is less opportunity to invent a dishonest response (O'Connor & Madge, 2017).

Increasing spread and use of the internet has provided more options for how an interview can be facilitated. An increasing number of programs exist that allow people to communicate through both computers and smartphones (Nightingale, 2017). These include Skype, Google Hangouts, Whatsapp, Facebook Messenger, and Viber messenger (Google, 2017). While all of these applications are free and have similar features, allowing text chat, voice chat, and videoconferencing, Skype provides the most anonymity as accounts in the other applications link to either the users' phone number or to existing email and social media accounts. In Skype, users can either create a temporary guest account or sign up by creating a unique username and filling out a profile, which does ask for identifying information, but is not linked to existing online accounts or phone information; allowing choice over how much information to share. As with the other programs, internet access is needed to use Skype either through the website or as a downloadable program onto a computer, tablet, or smartphone. Text chat can be used on all devices and a microphone and/or camera is needed to access the phone and videoconferencing aspects of the program. These features, and the ability to use voice-only, make Skype an option that can use the advantages of a telephone interviews while increasing participant anonymity (Oates, 2015).

There is increasing use of Skype to conduct research interviews (Deakin & Wakefield, 2013; Hamilton, 2014; Hanna, 2012; Iacono et al., 2016; Janghorban et al., 2014; Oates, 2015; Seitz, 2015; Sullivan, 2013; Weinmann et al., 2012). Researchers have found it useful to communicate with harder to reach populations (Deakin & Wakefield, 2013) and to access participants who may be unable or unwilling to meet in person (Hanna, 2012; Janghorban et al., 2014). Skype allows participants to participate from a safe and familiar space, hopefully creating a more relaxing environment (Hanna, 2012). It also makes it easier for participants to exit an interview, as they do not have to navigate either excusing themselves or asking the researcher to leave; all they need to do is click a button (Bertrand & Bourdeau,

2010). There is an inherent power imbalance in all research as the researcher is the one asking the questions and who primarily benefits from the interview (Kvale, 2006). The physical distance and ease of exiting the interview afforded by using Skype can help to even out this power imbalance by making it easier for the participant to exit the interview, thus they may feel more in control and comfortable in the interview (Hanna & Mwale, 2017). Additionally Skype allows users to block unwanted contacts, so participants can block the researcher after the interview, preventing future contact. In the context of sensitive issues this would help to reassure participants that they have control over how much they will be participating in the research and that if they choose to stop the interview for any reason they cannot be contacted again. Alternatively, participants can set up a username specifically for the interview, either by creating a new account specifically for the interview or by using a guest account, which does not require creating an account and is only temporary.

Skype can also help facilitate additional protections for participants. Research information sheets and consent forms can be sent to participants using Skype ahead of the interview so that they have time to read about the study and what is involved before they participate and ask any questions before the study begins, then providing verbal informed consent before the start of the interview. Alternatively researchers can set up separate webpages with the study information and consent forms where participants can give consent, linking this consent to their Skype username, similar to how consent is often given in an online questionnaire. Another advantage to this online platform is that information for support services can be easily sent to participants. Phone numbers and links to websites that provide support services can be sent to participants directly within Skype in addition to including these on research information sheets. The researcher can then also send the participant the most relevant link or phone number based on the information disclosed, but can also remind the participant to refer to the information sheet for additional resources.

Using Skype also provides protections for the researcher. Qualitative research can involve the researcher putting themselves at risk due to being in unfamiliar or unsafe environments (Bahn & Weatherill, 2013) and spending time listening to and processing potentially distressing information from participants

(Dickson-Swift et al., 2008, 2009; Lee, 1993). Skype reduces these problems. During some sensitive research interviews researchers have reported stress when having to monitor their reactions to information brought up in interviews (Dickson-Swift et al., 2009). The space provided by voice-only Skype can also help researchers respond to disclosures of distressing events or experiences by allowing them to focus on their verbal response, rather than their body language or facial expressions. Having one less thing to pay attention to, especially when conducting research on a sensitive topic, may relieve some tension for researchers. However, in order to appropriately respond to participants' distress without visual cues, researchers need to pay close attention to what participants are saying and interject appropriate responses and offer breaks to participants as needed (Mealer & Jones, 2014). The ability to block people on Skype is also a benefit for researchers so that participants cannot contact them once the research is over. Qualitative research, especially when it is about sharing personal or emotional experiences or opinions, can create the feeling that the relationship between the researcher and participant extends beyond these bounds, making it difficult for the researcher to cleanly end the relationship (Fahie, 2014; Watson, 2009).

There are reported difficulties with using Skype for research. Some researchers have reported that participants have had trouble or have been uncertain about their ability to correctly access and use Skype (Hamilton, 2014). Poor internet quality can also cause problems (Seitz, 2015) and researchers should consider how participants' location may impact internet quality and how this may limit their ability to use the video or audio features in Skype. Often these difficulties can be managed, but in some instances it has prevented people from participating or resulted in the need for an alternative interview method (Weinmann et al., 2012).

Skype has been used in some instances to conduct research on sensitive topics such as volunteer engagement in Phase 1 clinical trials (Oates, 2015), but discussions of this research is limited. Past research has addressed the value of Skype as a way to facilitate interviews, but has largely focused on its usefulness for hard to reach populations and as a way to combine advantages from telephone and face-to-face interviews. While there is some discussion of the advantages of other computer-mediated communication and sensitive topics, a more detailed examination is needed and the current research addresses this focusing on Skype

voice-only interviews, including advantages and disadvantages of using this platform. We draw on our research to provide insights into using Skype interviews for researching sensitive topics.

Using voice-only Skype in a sexual identity study

Our research involved a series of 24 semi-structured interviews on the topic of sexual identity. Participants were Australian residents who self-identified as male, female, and gender-fluid and ranged in age from 18 to 27. Skype was chosen as the platform for the interviews as sex and sexuality are often considered sensitive topics (Noland, 2012; Poole et al., 2004). While the interviews were about what people thought about sexual identity and how they understood it, rather than their own sexual identities, there was concern about sensitive issues being discussed. Based on this it was determined that using voice-only Skype would provide increased anonymity to participants as they would not have to physically show themselves and could use a Skype account unconnected to their real name.

An advertisement for the research was placed on the university's research participant pool website and interested participants contacted the first author. Potential participants were sent additional information about the study, including aims, what participation involved, and consent and data protection information. Participants were told they would need to supply a Skype user name and it was suggested that they create a new one for the study. Contact on Skype was made between the first author and each participant before the start of the interview. At the time of the interview the information sheet was reviewed with participants and they were given the chance to ask any questions before providing verbal informed consent and beginning the interview. Interviews concluded with the option for participants to ask any further questions.

Preparing for Skype interviews on sensitive topics

Due to the potentially sensitive nature of the topic a number of precautions were taken during the research design phase in order to ethically manage potential risks to both participants and researchers. The goal was to create a safe environment for participants to feel comfortable discussing a potentially sensitive topic (sexual identity), so ways to increase participant anonymity within an interview and being able to provide support to participants were important. Also key was ensuring

researchers were protected. The researcher conducting the interviews (first author) discussed potential issues with a counsellor, an IT adviser, and a lawyer within their University. Concerns about how to handle disclosures of abuse or distressing sexual experiences from participants were discussed with the counsellor. Key strategies suggested were to spend some time working out possible disclosures and how to appropriately respond to them. For example, disclosures of sexual abuse, either as victim or perpetrator, were a concern due to the sexuality topic; although considered unlikely as the questions were designed to investigate the concept of sexual identity rather than experiences. However, should this have occurred knowing how to handle these potential disclosures in order to best support the participant was important. Participants are volunteering personal and potentially emotional information and researchers need to consider how to respond and support these disclosure to best mitigate possible harm within the research context (Johnson & Clarke, 2003). Responses to a disclosure that acknowledged what the participant shared and checked in with how they were feeling were prepared ahead of time for the researcher to reference in the moment. Additionally, contact information for relevant helplines for participants who expressed emotional distress or disclosed being the victim of abuse were readily available. These were included both on the participant information sheet and kept on the researcher's computer so she could copy and paste the information into the Skype text chat box to send to the participant if needed.

Questions about how to set up the researcher's Skype account and how to handle any inappropriate (e.g. unrelated sexually explicit communication or images) or unwanted contact from a participant were discussed with the IT adviser. Key suggested strategies were to conduct the interviews on campus to prevent the researcher's personal IP address from being tracked, and to conduct the interviews as voice-only.

The questions used for the interviews were reviewed by the lawyer to make sure they were unlikely to uncover participation in illegal activities. In this instance the fact that interviews conducted over Skype can mask a persons' location is a disadvantage, as the interviewer cannot know if what someone is discussing is legal or not in their location. Some laws, such as age of consent, vary across jurisdictions, and we did not have a way of distinguishing what laws would apply to each

participant. Within face-to-face or telephone interviews, this is less likely to be a problem as the researcher will know where the participant is when they are participating. Legal reporting requirements the researcher might have if an illegal activity was disclosed were also discussed. The decision was made to carefully word questions in order to reduce the likelihood that illegal activities would be mentioned, and to immediately divert the conversation should this occur. Illegal activities did not arise during the interviews. If illegal activities had been disclosed, the legal advice was to prepare a report which included the participant's Skype details in order to have a record of the disclosure, although due to the nature of the interviews conducted over Skype there was limited ability to trace the individual. We did not provide information on (not) discussing illegal activities on our information sheet or directly raise this with our participants, and reflecting on our practice we now view this as problematic.

The precautions taken were to protect both the participants and researcher as sensitive topics can have an impact on everyone involved. Some of these steps, such as meeting with the counsellor and the lawyer, would also be useful for face-to-face and telephone interviews on sensitive topics. Discussing additional considerations with IT is Skype specific, but an important step when deciding to use Skype. Having an awareness of both how Skype works and how the researchers' institution internet set up can help facilitate anonymous and effective interviews will help towards making the interviews successful.

Advantages to conducting sensitive topics interviews using voice-only Skype

Increased control. Skype reduced the time needed to participate for both the researcher and participants as there was no requirement for people to travel to conduct the interviews. It also allowed participants to choose where they wanted to be during the interview. This was important for at least one participant who reported that they would not want to participate from home, so Skype allowed them to call from another location. Having control over where the interview took place helped people feel more comfortable participating in a topic that may have been more difficult to discuss in a different environment.

Willingness to disclose. Participants were willing to share their views regarding sexual identity during the Skype interviews. Participants discussed personal experiences and information about their sexual identity unprompted. While

the interview questions did not ask about personal experiences, participants freely shared these to support or demonstrate their opinions, including those regarding their own sexual experiences. It did not seem that participants held back information due to discomfort, which can be a concern when researching sensitive topics. This willingness to disclose in Skype interviews on sensitive topics is similar to findings in telephone interviews (Irvine et al., 2013; Trier-Bieniek, 2012), indicating that use of a computer or internet connect mobile device does not impact rapport-building and disclosure. In one instance a participant did not want to say something, but they stated it was because it was ‘rude’ and might be offensive, so it is unclear if a different interview method would have made them more comfortable saying the held back statement.

Text chat. The use of text chat was also beneficial during the course of this research. In one instance a call was dropped due to a bad internet connection, but the text chat function still worked. Luckily this was at the end of the interview with only a wrap-up question and some demographic items to answer. The participant typed in a detailed response to the last question, indicating no reduction in depth of information. In line with other research (Couch et al., 2012; Kazmer & Xie, 2008) this suggests text chat would also be a useful method for sensitive topics interviews, particularly when anonymity and physical distance may help the participant feel more comfortable.

Additional features. The ability to use other features in Skype should be considered as well. Within Skype there are symbols to indicate whether or not a person is online, offline, or away, which are helpful in determining if a participant is online, however these are not always an indication that the participant is ready to commence the interview. Before starting the interview the researcher was able to message participants to make sure they were ready without disrupting them with a call if they were not.

Disadvantages to conducting sensitive topics interviews using voice-only Skype

Dropped calls and lack of visual cues. A combination of internet connectivity issues and a lack of visual cues also created problems during the interviews. With the lack of visual cues it was hard to tell if there was a drop in the connection, if someone was just thinking, or if they were uncomfortable with the question, making it necessary to check with the person to make sure they were still there. This

concern was compounded when there had already been issues with the call leading to exchanges such as the following.

Researcher: ...just a general passing of time people understand themselves better? Does that sound right? (long pause, no response, and no background noise) Hello?

Participant: Hello.

Researcher: You're still there, I thought it cut out for a second. No worries, um, so saying experiences and time allow people to kind of get a better understanding of themselves?

While this did not completely disrupt the conversation, it did interrupt the flow of conversation and require a rephrasing of the question. However this is not always a bad thing, in an instance where someone is uncomfortable with the question rephrasing can provide the researcher with an opportunity to present the question in a less threatening manner.

In other instances long silences can give participants time to think about their answer or compose themselves when discussing an emotional topic (Mealer & Jones, 2014). In this study longer silences or pauses were assumed to be due to the participant thinking to avoid rushing participants to answer and to give them time to think. Silences were interrupted when it became unclear why the participant had not responded. A lack of background noise, Skype indicating that the internet connection was poor, and previous pace of responses within the interview were used to decide when to interrupt the silence. These were fairly good indicators of when to interject, with fewer interruptions, but more longer silences in which the participant was waiting for the interviewer to respond.

Other interruptions come from instances such as in the previous 'Text Chat' section when a call is dropped. While this was disruptive to the interview it did occur at the end with only one wrap-up question left. Had it occurred in the middle of the interview, or during the discussion of a particularly sensitive area, this may have been more disruptive. In this case it may have been necessary to conduct the remainder on text chat or reschedule the other half of the interview. However, a switch between methods for the second half of the interview may have had an impact on rapport, as rescheduling might as well. Depending on what was being discussed at the time of the dropped call there may be concerns over harm to

participants if they were in the middle of an emotional disclosure. Suddenly losing connection to the researcher may be jarring and leave them feeling vulnerable. Text chat may help in this instance if the internet connection is not completely lost, with the researcher being able to follow up and check in on the participant, re-establish the conversation, and send links to support services if needed. The interview may be able to continue with little to no loss of participants' comfort in discussing sensitive topics with text chat having been found useful in aiding disclosures of personal information in an online therapeutic setting (Stubbings et al., 2015) and this may hold true for interviews as well. This drop in connection may end the interview and the researcher and participant will have to consider if they want to reschedule, or if poor internet connections make the potential harm from an additional lost connection not worth the risk.

Other potential disadvantages

One of the disadvantages to not conducting an interview on a sensitive topic in person is the loss of physical cues between the research and participant. This may lead to the researcher unknowingly missing a signal that the participant is distressed and needing a break or some additional support. As with telephone interviews it is important that researchers listen for cues and check in with participants, double checking if they are ok or need a break. One advantage to using Skype over the telephone is the text chat function, where researchers can send participants links to help lines or other resources. This can be done either as the researcher sees fit or at the end of every interview, even if the information was provided in the information and consent sheets, as a back- up measure.

Another potential issue brought up by Irvine et al. (2013) is their finding that participants in telephone interviews will more often seek reassurance that the answers they are providing are sufficient than participants in face-to-face interviews. Possible reasons for this were lack of feedback from researchers and lack of visual cues. A potential ethical concern was that participants may feel that they did not do 'well' at the interview and this may cause stress after the interview is over. Within the context of sensitive issues this is particularly concerning as participants may already be feeling stress from recalling or discussing the research topic. In this study some participants did ask if they were answering questions 'correctly' or understanding the questions properly. The interviewer found it helpful

to start the interviews by restating the aims of the interview and that the goal was to learn how the participants thought and understood the topic. When participants were asked if they were ‘correctly’ answering questions they were reassured and reminded of the goals of the research, which seemed to reassure them. Without follow-up after the interview however, it is not possible to know if this was effective in preventing any long term uncertainty or distress as a result of participating in the research.

Additional Skype considerations

Program familiarity. While Skype is an accessible program, it does require some familiarity with computers, which could prevent people from participating in research. Some participants had difficulty accessing Skype due to a lack of familiarity with the program. This required some help from the researcher to direct participants to the website where they could download it and set it up. Some of the difficulty came from having to do all communication over email, meaning directions had to be very clear and the participant and researcher had to hope they were both referencing the same thing. Other researchers have provided detailed directions to participants before the interviews (Hamilton, 2014), and this would help reduce difficulties.

Account set-up. Researchers should make sure that the Skype account they use for the research is easy to find and not similar to other Skype usernames. In this research some participants found and contacted the researchers’ personal Skype account. While the researchers’ research account had their university affiliation in the profile, the difference between the two accounts was not clear enough. To reduce this problem researchers could include a word or number in their username and profile (such as ‘Researcher’) and tell participants to look for that. Finding the correct participant account was sometimes difficult for the researcher as multiple accounts for the same name (e.g. ‘Jane Smith’) would come up and the researcher would have to guess which one was correct based on any provided profile cues. Not only does this make establishing contact more difficult, it could also enable participants to contact researchers after the study. Due to the nature of sensitive topic research and the rapport and empathy expressed by the researcher, the relationship between participant and researcher can become blurred (Bahn & Weatherill, 2013). Sometimes participants will want to continue to discuss the topic

with the researcher outside of the study (Fahie, 2014); preventing participants from getting personal contact details for the researcher will make it easier for the researcher to maintain a professional relationship and appropriate boundaries with the participant. Researchers could also ask participants to include additional identifying information in their profile during the set-up phase, although researchers should be hesitant to give participants additional tasks. Researchers could also make sure that any personal Skype accounts do not include their name or change the privacy settings to make it more difficult for people to find their profile.

Based on our experience we have developed a ‘Skype Preparation Checklist’ for future researchers considering using Skype for their research on sensitive topics (see below). This can be used as a supplement to existing checklists for conducting interviews on sensitive topics, such as Dempsey et al.’s (2016) ‘Framework of Essential Elements in Qualitative Interviewing’ which provides considerations and actions required for various stages of interviews from planning through to concluding interviews. What our ‘Skype Preparation Checklist’ adds is additional considerations when planning to interview on Skype.

Skype Preparation Checklist

- Determine appropriateness of study or population for Skype interviewing
- Decide whether to use audio-only or video
- Brainstorm for possible distressing events (new ones may come up during the research)
 - Consider responses to these events and whether you will be able to respond sufficiently through Skype
- Create a plan for how to manage these events, discussing with others where needed
 - Counsellor
 - Supervisors/co-researchers
 - IT

- Legal team
- Gather contact information for helplines or websites (national)
 - Have this information in a document so it can easily be copied and pasted into Skype to send to participants
- Set up research Skype username and profile
 - Make any personal accounts private
 - Make research account username easy to identify
 - Decide if you want to include a photo in your profile
- Create directions for how to set up Skype to provide to participants
- Check that the microphone/camera on the device you are using for interviews is working and up-to-date (do regularly during the course of the research)
- Test a Skype call from the location you will conducting the interviews from

Discussion and conclusion

Within this study Skype was a useful and effective way of interviewing participants on a sensitive research topic. Using the voice-only feature of the program afforded participants an additional level of anonymity not available with face-to-face or telephone interviews. Using Skype did not appear to have a negative impact on participants' willingness to discuss sensitive issues, with many sharing personal details related to sexual identity.

There were some problems with using Skype, the biggest being internet connection issues, which could limit the use of the program if people are in places with poor internet connections. While there were some technical difficulties and some participants who were unfamiliar with Skype, it was easy to overcome these problems. Researchers looking to use Skype may want to consider having directions for set up and use of the program available to send participants. The participants in this study were younger, ranging from 18-27, so they might have had more

familiarity with Skype or similar programs than older participants who may be less comfortable with technology.

None of the issues that were of concern before the research started, such as disclosures of abuse or unwanted sexual contact from participants, were encountered during this research. This could be due to the not very sexually explicit nature of the research topic, recruiting participants from the researcher's own university, or the precautions taken in setting up the Skype interviews. However thinking through possible issues and ways to respond was still useful as they prepared the researcher for the possibility of these occurring. As other researchers have reported issues when conducting research on sexuality and other sensitive topics it is important to be aware of issues that might be encountered so they can effectively dealt with (Dickson-Swift et al., 2008; Lee, 1993; Roulston, 2014).

Based on our experience we developed a checklist for future researchers considering using Skype for their research. While Skype was useful in the context of our research it may not be an effective method for researching other sensitive issues. Direct questions were not asked about participants' own experiences in relation to sensitive issues, and while participants did share these, responses might have been different if the questions were directly about them. However, the findings from our research are encouraging and suggest that Skype may be an effective tool for conducting research on other sensitive issues.

1 Chapter 3 Defining sexual identity

2 This paper is currently under review.

3 Abstract

4 Part of developing an identity is developing a sense of sexual identity. Researching
5 this aspect of identity can be difficult as the term is impacted by culture and
6 changes in thinking. It is also inconsistently defined, often overlapping with sexual
7 orientation, making it unclear if the two terms mean similar or different things.
8 Having cohesive understanding of how sexuality professionals and non-
9 professionals use and define these terms is important for professionals to work
10 effectively. To gain a better idea of how people currently think about sexual identity
11 and update the definition, interviews with 22 emerging adults and eight
12 professionals were conducted. Interview transcripts were coded and analysed using
13 thematic analysis with an inductive semantic approach to construct explicit themes.
14 Components of sexual identity were identified, as well as outside influences and
15 underlying characteristics. Sexual identity and sexual orientation were identified by
16 participants as distinct concepts. Sexuality professionals and emerging adults used
17 the terms in similar ways, although professionals provided more detailed
18 descriptions. Results were used to create a contemporary definition of sexual
19 identity that supports considering a wide range of components when thinking about,
20 researching, and working with sexual identity.

21 **Keywords:** sexual identity; sexual orientation; culture; interviews;
22 qualitative.

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1 Defining sexual identity: Descriptions and thoughts from professionals
2 and emerging adults

3 Introduction

4 Identity development is an ongoing process throughout life that is influenced by
5 experience, culture, environment, and other people (Erikson, 1959; Marcia, 1966).
6 Identity development is a critical part of adolescence and emerging adulthood
7 (Arnett, 2000; Erikson, 1959) as people start to differentiate themselves from their
8 families and define parts of their identity (Beyers et al., 2003; McLean et al., 2016).
9 Sexual identity is one aspect that is primarily developed during this time, often
10 focusing on one's sexual orientation or gender identity.

11 Early research on sexual identity described the term as including gender
12 identity, social sex-role, and sexual orientation (Shively & De Cecco, 1977).
13 Developmental research looked at how people came to identify as same-sex
14 attracted and the process for 'coming out' with a homosexual or gay identity (Cass,
15 1979; Troiden, 1979). There is a social component to this process as people
16 compare themselves to others and discover potential identities. Following this,
17 sexual orientation was used more often to describe identifying and labelling gender
18 attraction, and additional components including attraction, behavior, fantasies, and
19 partner preferences (Coleman, 1987; Klein et al., 1985). Later research looking into
20 understanding ones' gender attraction described this process as sexual identity
21 development. Rather than sexual identity being an innate part of the self, this
22 research found sexual identity and the labels used to describe it as being informed
23 by current community and culture definitions of the labels (Rust, 1993). In this
24 instance, someone might identify as a lesbian not only because they are same-sex
25 attracted, but also because of how the community they are currently in describes
26 lesbianism. If it changes would then change the identity label that person uses.
27 Other similar theories prior to 1996 also describe this process, for more information
28 on these see Eliason (1996).

29 Further research into sexual identity development focused on the process of
30 deciding on a label for one's sexual orientation (Savin-Williams, 2006; Savin-
31 Williams & Diamond, 2000). This process is most often looked at for people with a
32 sexual minority identity (Morgan, 2013), as people with these identities are more
33 likely to have gone through a process of identity exploration than people with

1 heterosexual identities (Konik & Stewart, 2004). This is due to presumed or
2 compulsory heterosexuality, where heterosexuality is the ‘norm’ and not something
3 that is likely to be explored or challenged (Konik & Stewart, 2004). Being
4 committed to an identity, but not exploring it results in someone being in the
5 foreclosure status of identity development (Marcia, 1966).

6 More recently, sexual identity has again broadened beyond focusing on
7 gender attraction and is used to describe a person’s understanding of their sexual
8 behavior, attractions, thoughts, and intimate relationships (Archer & Grey, 2009;
9 Morgan, 2013; Savin-Williams, 2011; Worthington et al., 2002). This
10 conceptualization is used in identity development research (Archer & Grey, 2009;
11 Morgan, 2013), often describing the result of an individual going through a process
12 of developing their sexual identity. Additionally van Anders (2015) proposed
13 Sexual Configurations Theory, which also looks at sexual self-understanding
14 broadly and includes more than just how one describes their sexual orientation. This
15 theory provides a framework for thinking about and measuring gender/sex, sexual
16 partners, eroticism, and other aspects of sexuality in a way that is flexible and useful
17 for people with a wide range of sexual identities and orientations (Abed et al.,
18 2019).

19 Within this literature, both the terms sexual identity and sexual orientation
20 are used to describe the gender someone is sexually or romantically attracted to. In
21 some cases sexual identity is synonymous with sexual orientation; being the way
22 that people label their sexual orientation (Poteat et al., 2019; Savin-Williams et al.,
23 2012). However, it has been noted that the two terms do have distinct meanings
24 (van Anders, 2015). In other cases, sexual identity is a component of sexual
25 orientation (Savin-Williams & Cohen, 2007), or is the term used to describe how
26 people label their orientation, with orientation including attraction, identity and
27 behavior (Galupo et al., 2016). In some places the terms are used interchangeably
28 (Tornello & Matsick, 2019). Then in other instances, sexual orientation is a
29 component of sexual identity alongside others including attraction, values, and
30 esteem (Snell, 1998; Worthington et al., 2008). The use of ‘identity’ often indicates
31 how someone understands their sexuality, primarily related to their orientation. It is
32 not always clear if this determination of identity is only related to orientation or if is
33 about other aspects of sexuality as well.

1 There are other similarities between how the two terms are used, particularly
2 with a current common description of sexual orientation having three components;
3 attraction, behavior, and identity (Beaulieu-Prévost & Fortin, 2015; Legate &
4 Rogge, 2019; Wolff et al., 2017). The differences are in the focus of these three
5 components. For attraction, sexual orientation tends to focus on attraction to gender,
6 while sexual identity includes physical and emotional attraction as well
7 (Worthington et al., 2008). For behavior, sexual orientation focuses on the gender of
8 the person someone is engaging in sexual behaviors with. Within sexual identity,
9 behavior is related to both gender and sexual activities unrelated to partner gender,
10 such as BDSM (Gemberling et al., 2015). Identity as part of sexual orientation is
11 often called sexual identity and is the label someone gives themselves to describe
12 their sexual attractions and behaviors, such as lesbian or asexual. Within sexual
13 identity, identity is the overall idea of self-concept someone has about their sexual
14 self, including aspects unrelated to gender. Sexual orientation also has a focus on
15 how someone understands their sexuality based on their attraction and interactions
16 with others (American Psychological Association, 2008), which excludes aspects of
17 sexuality unrelated to interest in other people, such as values. As described above
18 these two terms greatly overlap, but there are still distinctions, indicating that
19 researchers are describing and highlighting different things when using them. This
20 can make it difficult to understand what exactly is being discussed when each of
21 these terms is used.

22 Outside of academic literature the two terms are also used inconsistently. An
23 online search using ‘sexual orientation’ returns result headings including both
24 ‘sexual orientation’ and ‘sexual identity’ with the same pattern of results when
25 ‘sexual identity’ is the search term, indicating that the terms are used similarly
26 outside of academic literature. The websites returned from these searches are for
27 sexuality education and health, teen counselling and advice, psychology
28 associations and university counselling, human rights, and government health
29 websites. One website for a kids helpline describes sexual identity as how someone
30 sees and expresses themselves sexually in terms of who they want to have sexual
31 and romantic relationships with (*Sexual identity*, 2019). A website for an LGBT
32 media monitoring group uses a similar definition for sexual orientation (*How is*
33 *sexual orientation different from gender identity?*, 2019). The Australian

1 Psychological Society (*Information sheet: Sexual identity and gender diversity*,
2 2013) describes sexual orientation and sexual identity as being interchangeable and
3 focusing the definition on sexual and romantic attraction to specific gender(s).
4 These search results raise the question of whether or not people, both lay-people
5 and non-academic professionals, are thinking about the terms as broadly as they are
6 discussed in the academic literature. There is also the question of whether or not the
7 two groups are thinking about them in the same way. Research in other fields has
8 found expert and layperson definitions and terminology can be misaligned, leaving
9 room for miscommunication (Bucher et al., 2017). This can be problematic when
10 researchers and study participants understand terminology differently resulting in
11 the two groups not actually talking about the same thing, leading to invalid results.
12 An example of this is two groups having different definitions of ‘sex’. If researchers
13 include more sexual behaviors as ‘sex’ than participants do, it could lead to
14 underreporting of engagement in sexual activity. Having a conceptual definition, if
15 possible, that aligns with expert (both academic and non-academic) and layperson
16 ideas of sexual identity will make research more relevant to this second group, and
17 having a definition that is consistent with how laypeople use the term means
18 relevant aspects of sexual identity can be addressed in practice by experts.
19 Additionally this definition would help guide operational definition choices within
20 research that cover relevant aspects of sexual identity. This may be particularly
21 important as new sexual and gender identity terms emerge and language around
22 sexuality changes (Watson et al., 2019; White et al., 2018). In order for sexuality
23 professionals to be effective it is important that they understand the terminology
24 used by lay-people and what aspects of sexuality are most important to them.

25 How someone comes to understand their sexual identity is based on the
26 culture, environment, and social context that they are in (Eliason, 1996; Horowitz &
27 Newcomb, 2002) and can include influence from peers and family (Alderson, 2003;
28 Yarhouse et al., 2005). Ecological systems theory (Bronfenbrenner, 1979)
29 describes these different influences including immediate and wider environmental
30 elements that people are exposed to, peers, cultural messages, and life events, and
31 can be related to identity development (see Galliher et al. (2017) for more detail).
32 This aligns with previous descriptions of peer groups and social context influencing
33 how someone identifies, including how the environment will help or hinder identity

1 acceptance (Alderson, 2003). The influence of these on sexual identity changes as
2 personal interactions and the culture around sexuality change (Hammack, 2005).
3 The increasing attention to the ways people identify beyond hetero- and
4 homosexual is one indication of cultural change in this area (Walton et al., 2016;
5 Watson et al., 2019). Changes in terminology and cultural understandings of
6 sexuality can impact how people think about themselves, indicating the need to
7 revisit and update our definition of sexual identity to align with current
8 understandings.

9 Present study

10 The aim of this research is to gain a better understanding of how emerging adults
11 and sexuality professionals in high-income countries use and think about the
12 concept of the sexual self. These two groups were recruited to explore how people
13 use and think about the term in everyday life as well as professionally. With the
14 varied ways sexual identity and orientation are used in research literature, we
15 wanted to identify if and how these descriptions align with how lay-people and
16 professionals think about sexual identity and use it in their lives and work. An
17 exploratory qualitative approach with inductive thematic analysis guiding
18 methodological and analysis decisions was used to try to ensure the development of
19 the themes and subsequent definition were guided by the data, not existing
20 definitions. The aim was to create a conceptual definition that would inform how
21 sexual identity would be measured in future studies. Additionally, seeing how these
22 terms align and misalign can help show areas where professionals need to adapt to
23 new terminology and be able to discuss, educate, and conduct research around the
24 aspects of sexual identity that are important to the people they are trying to reach.
25 The information from interviews was used to create an updated definition that
26 reflects how people use the term in daily life.

27 Methods

28 Participants

29 Twenty-two emerging adults, aged 18-30 ($M = 21.38$, $SD = 3.19$), were recruited
30 from a large Australian university in a capital city using a university research
31 participant pool and received course credit for participating. Initial recruitment did

1 not specifically recruit any gender, however after the first round of recruitment
2 there was only one participant who did not identify as female. As men and women
3 have been found to go through different processes of sexual identity development
4 (Savin-Williams & Diamond, 2000), it was decided to focus on trying to recruit a
5 larger number of male-identifying participants to see if there was a gender
6 difference between this binary gender division. In the end fourteen identified as
7 female, eight identified as male, and no one specified a transgender identity. The
8 final sample size was based on having adequate information power based on having
9 enough participants in each group to address the research aim with sufficient quality
10 of dialogue (Malterud et al., 2016).

11 The professional sample comprised eight participants who had either
12 published on the topic of sexual identity in the five year period between 2011 and
13 2016, or worked in or around the topic of sexual identity in another field, such as
14 education and mental health. Consistent with other research eliciting expert
15 opinions (Ivanski & Kohut, 2017), we wanted a diversity of views, so a wide range
16 of professionals (sex educators, academics, social workers, counsellors, and
17 occupational therapists) were interviewed to provide their perspectives. Participants
18 were either located in Australia (six) or the United States (two). Potential
19 participants were identified through their publication history and an internet search
20 and were emailed information by the first author on the study along with a request
21 to participate, with further snowball sampling. As with the first group sample size
22 was based on achieving sufficient information power (Malterud et al., 2016).

23 **Measures**

24 A set of interview questions was developed for each group based on previous
25 research into sexual identity (Snell, 1998; Worthington et al., 2008; Worthington et
26 al., 2002), and was used as a starting point for the interviews. All participants were
27 first asked what components of sexuality they included in sexual identity.

28 Additional questions asked about specific components of sexual identity from the
29 literature that were not mentioned by the participant in response to the first
30 question. The wording used was more technical with the professional group than
31 emerging adults, where more general descriptions of components of sexual identity
32 were used (behavior, attraction, etc.). The interviews ended with questions about

1 sexual identity expression, whether or not sexual identity is public or private, and
2 how the individual felt about the term and its usefulness.

3 **Interview procedures**

4 Following approval from the University's Human Research Ethics Committee,
5 semi-structured interviews were conducted in person (2) and over the online
6 program Skype (28), and audio recorded on a handheld recorder. Skype is free to
7 use and allows people to communicate using text, voice, and video chat and is
8 suitable for use in sensitive topic areas such as this (Blinded for review).

9 Participants were provided with an information sheet and gave verbal consent prior
10 to the interview. Interviews ranged in length from 18 to 65 minutes (median 36
11 minutes) with variability seeming to stem from the amount a participant had thought
12 about sexuality and identity. As part of the interview process a reflexive journal was
13 kept during the course of the interviews to document decisions made during the
14 research. Notes were also made before and after each interview to record the
15 interviewing researcher's thoughts and initial reactions to the data. This was also
16 used to try and help acknowledge and reduce bias prior to each interview. These
17 notes were also referred to during analysis.

18 **Analysis**

19 The audio-recordings of interviews were transcribed verbatim by myself and a paid
20 transcriber. Transcripts were read to begin familiarization with the data prior to
21 being entered into QSR NVIVO 11 for analysis. Transcripts for emerging adults
22 and professionals were coded and analyzed separately, and all were coded by
23 myself. Data was coded and analyzed using thematic analysis with an inductive
24 semantic approach to construct explicit themes from the data (Braun & Clarke,
25 2006) as the goal of the research was to learn how people thought about sexual
26 identity, rather than the underlying thought processes shaping their understanding.
27 Each of the three groups was coded independently and a unique codebook was
28 developed for each. Codes and the data that comprised the codes were compared
29 between the female and male identifying groups to look at differences and no major
30 differences found, therefore they were considered as one group. Initial coding was
31 followed by refining codes and then the development of themes and subthemes
32 based on prevalence, and the relationships between codes and concept maps

1 developed. I compared the themes and concept maps to define and finalize the
2 themes. At each stage of the process, the codes, themes and subthemes were
3 discussed with the research team to make sure codes and themes fit the data.
4 Overall the themes were similar, with professionals having more subthemes within
5 the major themes identified.

6 **Results**

7 Three main themes emerged regarding sexual identity: components, outside
8 influences, and underlying characteristics. Each of these themes and related sub-
9 themes is discussed below, with the findings for emerging adults presented before
10 the findings for professionals within each theme.

11 **Theme: Components**

12 The components of sexual identity were the specific things that would be part of
13 how someone would define or understand their sexual identity. Across both groups
14 there were specific elements (gender attraction, emotional and romantic attraction,
15 physical and sexual attraction, and sexual behaviors or interests) that were included
16 for most participants.

17 ***Sub-theme: Gender attraction/sexual orientation***

18 *Emerging adults.* The focus on gender attraction, or sexual orientation, as the main
19 component of sexual identity was consistent across all but one of the emerging
20 participants. When asked if gender attraction was part of sexual identity, one
21 participant (20 years) said they were not sure, later separating out sexual orientation
22 and sexual identity as different concepts: ‘...you definitely have some sort of idea
23 about sexual identity, I think everyone does regardless of what their sexual
24 orientation is.’

25 When asked about what was included in sexual identity, the rest of the
26 emerging adults included sexual orientation as part of sexual identity. Descriptions
27 ranged from sexual orientation being ‘...most of the sexuality is orientation’ (20
28 years), to ‘... orientation sort of specifically referring to [what] sex or gender you
29 prefer. Or any combination therein’ (23 years).

30 *Professionals.* Sexual orientation was also brought up by all of the
31 professionals as a component of sexual identity. It was not always the key
32 component, however two participants listed it as the most likely important thing for

1 people when defining their sexuality. This was reflected by the statement ‘...that
2 idea of orientation and behavior does seem to be, or those ideas seem to be most
3 important to people who are defining their sexual identity.’ This was echoed by
4 other participants, with one saying “...people often think of it in term of sexual
5 orientation... in terms of whether you’re heterosexual or homosexual or anything
6 in-between.”

7 ***Sub-theme: Attraction***

8 *Emerging adults.* The second main component was attraction, both
9 emotional/romantic and physical. Emotional/romantic attraction was discussed in
10 terms of the psychological characteristics of a partner, and for a majority of
11 participants it was more important than physical attraction. Some people listed
12 specific characteristics, including sense of humour, values, personality, and
13 emotional compatibility. One participant (19) summed it up with “...if they have
14 the same values and life goals...if you’re a very similar person to the one you’re
15 attracted to, it makes things easier. Humour is a big one... if they get along with all
16 your friends and family...” Sexual attraction was related to physical attraction, but
17 more specifically about the desire to have sexual contact with someone. One
18 participant (25 years) described it as, ‘...sexual attraction is more on a physical and
19 more of feeling that attraction between two people. Like you would have sex with
20 them...’ These aspects of attraction are not independent of each other, rather as one
21 participant (21 years) said ‘...parts, like physical attraction, and emotional, and
22 everything, and all of them are interrelated and kind of come together as your own
23 personal sexual identity.’

24 *Professionals.* Physical, emotional, and sexual attraction was also described
25 by professional participants. Participants agreed that these could all be parts of a
26 person’s sexual identity, but that they would not necessarily be consistent for
27 everyone or every relationship. One participant said ‘it’s about your likes and
28 dislikes, and sexual versus romantic attraction, do you want emotional intimacy
29 with someone or do you want physical intimacy with someone...’ Another
30 highlighted how this would be different for everyone saying “...there’s definitely
31 factors that people find sexually appealing that perhaps others don’t even
32 contemplate.”

1 A separation between attraction and behavior was also described, with one
2 participant commenting that:

3 ...people may experience attraction to people of all genders, but only be
4 sexual or only be romantic... with people of a certain gender. So, as an
5 example, men who are bisexual may only be in relationships and be
6 sexual with women even though they experience attraction to men and
7 women.

8 ***Sub-theme: Sexual interests and behavior***

9 *Emerging adults.* Sexual behavior was also part of sexual identity. This included
10 both sexual activities generally, as well as specific sexual behaviors that someone
11 wanted to participate in and behaviors relating to how they expressed their
12 sexuality. One participant (18 years) provided a general description, ‘...obviously
13 like intercourse and um just acting... open with their sexuality...’ Another
14 participant (no age given) noted that these behaviors would not always be ‘a
15 reflection of [someone’s] sexual identity’ and that people might ‘...have reasons
16 they don’t want to express that... and sexual behaviors might have a lot to do with
17 how comfortable the person is with themselves and with their identity.’ Specific
18 sexual behaviors ‘...for example the BDSM stuff and all that 50 Shades of Grey
19 stuff I think that's part of like people’s identity if they like to do that...’, (20 years)
20 were also mentioned, although behavior was not necessarily linked to other sexual
21 identity labels, as the same participant went on to say ‘there's different ways to be
22 straight.’

23 *Professionals.* For professionals, sexual behaviors were varied and included
24 both solo and partnered activities. Including both was important as one participant
25 commented that including ‘...only sexual behavior with other people... that would
26 kind of erase a lot of people... especially people that have non-normative sexual
27 behaviors when they’re on their own...’ Participants also discussed that a lack of
28 sexual behaviors would also be an important part of sexual identity, particularly for
29 people who identified as asexual, as ‘zero is still part of the thing.’

30 Not all sexual behaviors would be part of sexual identity. This was linked to
31 the concept of sexual motivation, in that there would be many reasons someone may
32 or may not choose to engage in sexual activity. Sex work was an example of this
33 with one participant saying that in the transgender and queer communities ‘...sex

1 work is really common just as a means of survival and people aren't necessarily
2 going to hate it or love it...'

3 Related to sexual behaviors was sexual interests and fantasy. One participant
4 said, '... there are some people that have sexual fantasy lives that are completely
5 disconnected or separate from or they would say do not influence their sexual
6 behavior at all.' Another mentioned that engaging in a behavior will often be
7 dictated by 'either one's interest in engaging in [a] behavior that responds to their
8 identity, or like safety or ability to be vulnerable in disclosing your whole sexual
9 identity or sense of self.'

10 ***Sub-theme: Other components***

11 *Professionals.* Professionals were asked about some additional components (if not
12 mentioned by the participant) based on previous literature. These included sexual
13 knowledge, self-awareness, esteem, anxiety, safety, control, preoccupation, and
14 motivation. Participants felt that these could be parts of sexual identity, either
15 implicitly or explicitly, but whether or not an aspect would be included or even an
16 influence would depend on the person and their experiences. The main feature in
17 whether something would be a component was how aware someone was of it and
18 the strength of the impact. For example, someone may have 'sexually preoccupied'
19 as part of their sexual identity if they feel they think about sex a lot and this pattern
20 of thoughts is important to them.

21 **Theme: Influences**

22 Influences were external things that had an impact on how someone thought about
23 and understood their sexual identity, with participants focusing on the culture and
24 environment someone is in and the personal experiences that relate to sexual
25 identity. Despite sexual identity being a personal concept, how someone understand
26 themselves is related to their environment and how sexuality is discussed and made
27 visible.

28 ***Sub-theme: Culture***

29 *Emerging adults.* Culture was viewed as setting up expectations for acceptable and
30 unacceptable behavior. One participant (30 years) described the conflict that comes
31 from having a culturally unacceptable identity saying, '...you live in a box that

1 you're not accepted, so you want to get out of that box. You either fight or you just
2 say, "Yes, I'll obey the rules and I'll just be who they want me to be."

3 Culture also impacted on the extent to which someone might think about their
4 sexual identity, as one participant (25 years) pointed out:

5 ...we live in a heteronormative society [so] someone who is heterosexual
6 would probably never really have to question their attraction in the sense
7 that it's normal... someone who is same-sex attracted or attracted to other
8 genders they may have to... they may think about it more than a
9 heterosexual person and may wonder is this normal? Is this ok? What
10 kind of impact is this going to have on my life if I live out this sexual
11 identity?

12 Defining sexual identity was seen as culture-dependent. One participant (19 years)
13 believed this comes from '...these different ideals that are so different across the
14 world that makes it hard to be able to define sexual orientation and sexual identity.'

15 The media was also considered a cultural influence on how people think about
16 sexuality. One participant (26 years) felt that the media might help expose people to
17 new identities and ways of being by '...creating this awareness and letting others
18 know that it's ok... to express themselves...'

19 *Professionals.* Culture was viewed by professionals as one of the main
20 factors that influenced sexual identity. One participant said, '...the legal contexts in
21 which a person exists, what their rights are, the history of the culture that they exist
22 in and what is their perception of sexuality and what's... appropriate and what's not
23 appropriate in different cultures...' They then went on to highlight the problem
24 when culture and self-understanding are not aligned saying, '...there's that real
25 conflict that happens and that has a huge psychological effect on a person, and their
26 perception of self.'

27 Additionally, one participant described culture as influencing what people
28 think of as important parts of sexual identity based on '...what our culture brings
29 our attention to... I mean, we're obsessed with sexual orientation in our culture
30 because of all the societal crap <laugh> you know that's related to sexual
31 orientation.'

32 Ultimately, professionals believed that culture could not be separated from
33 sexual identity, as summed up by one participant '...I think you can't talk about

1 sexual identity without considering the social context... and all the kind of social
2 norms and all of the social messages which are sent to people about their
3 sexuality...'

4 ***Sub-theme: Environment***

5 *Emerging adults.* Environment was similar to culture, as it surrounds someone, but
6 is more immediate and includes someone's family, peers, and religion. In regard to
7 family, one participant (22 years) felt that '...maybe if your family was constantly
8 telling you that something was inappropriate or something, you might not be willing
9 to share that part of yourself with your family, but I don't think that would
10 necessarily change your identity...' Peers, particularly those who were similarly
11 identifying were also highlighted. One participant (19 years) stated '...I think
12 especially with people who see themselves as homosexual... if their family isn't um
13 supportive or whatever, they would feel [comfortable] talking about their sexuality
14 with people who have been through the same things as them.'

15 Someone's beliefs and values, informed both from religion and these
16 environmental sources as a whole, could impact sexual identity. Specifically,
17 talking about religion, one participant (21 years) felt that 'these beliefs actually do
18 play a role within... someone's sexuality... whether it positively affects them or
19 negatively affects them...' While another participant (19 years) felt the morals and
20 values around sexuality could impact '...whether or not you feel like your sexual
21 identity is good or bad or otherwise...'

22 *Professionals.* As with emerging adults, professionals discussed the
23 environment in similar terms to the wider culture and society, focusing on the
24 influence of more immediate surroundings or people on someone's sexual identity.
25 When discussing decisions about engaging in sexual activity, one participant stated
26 that that decision '...could be informed by the messages that they've had from their
27 family and their society. If their messages are "that's not, that's not an ok thing to
28 do", that's going to inform whether someone is motivated...'

29 Professionals held views similar to emerging adults', agreeing that part of
30 determining what is and is not acceptable are the morals and values prescribed by
31 community and larger cultural messages. This was described by one participant as
32 including environmental and social factors including religious values and education
33 and that all of these make values a '...complex thing because values are developed

1 from early childhood... and the impact of society and societies norms on what [is]
2 appropriate and people tend to take on board those values whether they're congruent
3 with their own beliefs or not.'

4 An individual may have access to different communities or groups that
5 support or are related to their sexual identity. Having or finding a safe community
6 or peer group was seen as protective for people as '...whether it's like queerness or
7 kink or just general sexual behaviors, but maybe they're not talked about from the
8 community that you come from and then finding the community where that's
9 accepted or you can practice things in a risk aware or safe way... that could affect
10 mental health or just positive self-image...' Community was not only seen as
11 potentially beneficial (and on the other hand, potentially harmful) but also as
12 something that could be part of someone's sexual identity when 'their affiliation
13 with a certain community or with a certain kind of social identity is a really strong
14 part of who they are.'

15 ***Sub-theme: Experience***

16 *Emerging adults.* Experience was seen as events that impact who a person is, both
17 positive and negative, and aging. Part of experience was that it provides more self-
18 understanding; as one participant put it (20 years) '...the more experience that you
19 have... how many partners you've been with... duration of your experiences, you
20 gain more knowledge about um your own sexual self-concept...' It could also
21 affect how someone views past events, as with one participant (20 years) who said
22 '...my first sexual encounter was not, wasn't until later that I realized that it wasn't
23 that normal and it wasn't ok...'

24 Experience can also 'confirm or deny um stuff that we've learned from our
25 family and the media,' (23 years) as well as change the way someone might think
26 about themselves. One participant (20 years) described how experience might
27 impact at different times, saying, 'I think sometimes when you're young you might
28 realize you're gay... or you might realize it when you're married... I think through
29 experience is what... tells you what you want...'

30 *Professionals.* Professionals viewed experience as the way that people
31 would develop and learn about their sexual selves. As one participant said 'it is
32 through experiences that you also discover what you don't enjoy or don't like,
33 right?' These experiences would also be filtered through the cultural messages

1 related to those experiences, such as those around the number of sexual partners
2 someone has. It was noted that having more sexual partners was seen as ‘masculine’
3 for men, but that women who engage in similar behaviors are given labels with
4 ‘really negative connotation[s]’ and how society treats these behaviors could impact
5 on identity formation.

6 Experience was not only behavioral, but also incorporated experiences with
7 language and knowledge. One participant thought ‘...identity will only form based
8 on the knowledge that you've got to hand. So the more knowledge that you have
9 about something, it will probably help you to more closely or more clearly define
10 your identity.’ Language was also seen as something that could change how
11 someone sees or describes themselves. One LGBTI educator described a workshop
12 they ran for bisexual people and discussed how, as participants learned new
13 language and gained understanding, there were visible ‘shifts’ in people. Through
14 the workshop some found they did not need a term for their identity, while others
15 found having a term that fit them to be a positive experience, with one person being
16 ‘... quite upset at the beginning and walked out glowing because she decided at the
17 end yes, she was bisexual...’

18 Knowledge, or lack of it, could also impact how someone viewed a sexual
19 experience. Using a violent sexual experience as an example, one professional said
20 if someone was ‘violated sexually, but [did] not actually have the knowledge to
21 understand that that is what has happened.... they might experience that very
22 differently um to somebody who does and... it would influence them differently.’

23 **Theme: Underlying Characteristics**

24 Underlying characteristics were more about the way sexual identity worked, rather
25 than what might define or influence someone’s sexual identity. The individual
26 nature of sexual identity descriptions and the ability for these to change were
27 identified as the main characteristics. Participants were adamant to point out that
28 they thought that orientation could not change in essence, but only in description or
29 label, and that other components could change as people learn and accept new
30 things about themselves.

1 ***Sub-theme: Individually Constructed***

2 *Emerging adults.* For emerging adults, sexual identity was described as something
3 that would be different for everyone. As noted by one participant (25 years)
4 ‘...sexuality and your identity is a very individual thing so it’s- it expresses itself in
5 everyone differently on different levels and different ways and I think it’s just really
6 subjective and unique to the individual.’ Sexual identity was also something that an
7 ‘...individual creates themselves or is created themselves like, which is – I guess it’s
8 just how they identify themselves with, but it’s not – it’s not created by anyone else
9 but them’ (No age given). Even when talking about accepted sexual identity terms,
10 participants noted these were not viewed as universally descriptive. Using himself
11 as an example, one participant (20 years) described the difference as ‘I wouldn’t
12 have the same sexual identity as the next heterosexual male, even though we’re both
13 heterosexual males.’

14 *Professionals.* Mirroring emerging adults’ views, professionals also viewed sexual
15 identity and the process of understanding it as unique to the individual. One
16 professional said ‘[sexual identity] can be quite simple for some people and it can
17 be more complex for others.’ Similarly, another professional talking about how
18 people might come to understand their identities said ‘...the way in which someone
19 might resolve it at any given point of time or kind of revisit it is gonna be different
20 for everybody.’ Professionals did not think that the differences between people
21 would always be big, with one academic saying that:

22 ‘[i]t may not be that there are these wildly different identities
23 floating around... it’s like snowflakes. My guess is that there are
24 probably some meaningful patterns so that we might expect to see
25 certain – I mean, I’d say sexual identity itself does probably have
26 highly idiosyncratic components. It also probably has components
27 that are not loudly idiosyncratic too that are based on just some
28 common individual differences between people.’

29 ***Sub-theme: Changes***

30 *Emerging adults.* Emerging adults were asked if they believed that sexual identity
31 could change. Most participants felt that someone’s sexual identity could change,
32 through experience and a better understanding of the self. One participant (25 years)
33 stated ‘... as your life circumstances... your sexual identity can change and

1 therefore your label can change.’ Others pointed out that it could be the
2 components of sexual identity that change, rather than the whole identity. Talking
3 about attraction one participant (21 years) said ‘...the things that you find attractive
4 now may not be the things you find, or are gonna find attractive in 5 years.’

5 Some participants did not think sexual identity could change rather it is
6 something that emerges over time and experience. One participant (30 years) felt
7 that ‘...some people find [sexual identity] in an early age... and some people take
8 [a] long time to actually, maybe not understand what their sexuality is... but living
9 it and accepting it...’

10 *Professionals.* Professionals also argued that sexual identity can change,
11 including behaviors and identity labels, mostly due to environment, experience, and
12 how someone views themselves. As one participant put it ‘...so it’s a combination
13 of a psychological sense of self and sociological understanding of one’s
14 membership in society and what’s salient or what’s important is gonna change over
15 time because often times what’s important is what is incongruent...’

16 How the different influences on sexual identity interact to bring about
17 change in sexual identity can depend on how a person processes these things and
18 how they feel about the identity they currently hold. One participant felt that not
19 only was being open to experience important, but ‘...also having the language to
20 explain that, to unpack that, to look at what, what does that actually mean in your
21 life... So I think that for some people that's this ever evolving journey...’

22 ***Additional Question: Difference between sexual identity and sexual orientation***

23 Participants were also explicitly asked if they thought there was a difference
24 between sexual identity and sexual orientation.

25 *Emerging adults.* Five of the 22 emerging adults felt the terms meant the
26 same thing, while the rest of the participants believed they were connected, but
27 different. One participant (19 years) explained it as:

28 I think that your sexual identity can have a lot to do with not just like
29 your gender preference, but um, like how you feel in general about like
30 sex and sexual things, like whether or not you think that they're good or
31 bad or what’s good and what’s bad...

32 This reflects the views of other participants, with the main distinction between the
33 two concepts being that sexual identity was more about how someone defined their

1 overall sexual self. One participant (19), put it as "...sexual orientation is more
2 like... if you're straight or... gay or you know, whatever sort of category you fit
3 into. Whereas I think sexual identity... like that's sexual orientation, but sexual
4 identity is a lot bigger. I think sexual orientation is like a little point of sexual
5 identity..."

6 *Professionals.* Most professionals described sexual identity and sexual
7 orientation as two different things, mostly with 'orientation [as] a sub-component of
8 sexual identity, not vice versa.' The difference mostly focused on 'orientation is,
9 who you're attracted to... and identity is a terminology that you'd use... to express
10 that...' Only one participant viewed the terms to mean the same thing, saying they
11 'always sort of clumped them a bit together' and preferred using sexual orientation
12 as they disliked the word 'identity' and felt a better term could be found.

13 Participants described the main issue with sexual identity as 'sexual identity
14 can get a little bit confused with other terms like sexuality and sexual orientation.'
15 Additionally, professionals brought up the difference in how a professional and a
16 layperson might think about sexual identity and orientation and their opportunities
17 to do so. One professional described their process of thinking about the terms:

18 I think being privileged enough to have spent years solely focusing on
19 these concepts and what my understanding of them are means that I have
20 really specific reasons for why I use a word and they're not necessarily
21 just guided by popular culture, media, and how other people use them...
22 I'm not sure that other people would have had the luxury of spending a
23 lot of time thinking about that.

24 An additional issue about the difference between professional thinking about
25 sexual orientation versus layperson thinking brought up by one sex educator was
26 that:

27 ...the literature has over the past decade has expanded and then expanded
28 and expanded and like basically broken the word 'orientation' to mean
29 really whatever you want it to mean and that's not what it means to a
30 layperson. The average person, when they hear sexual orientation, they're
31 not thinking about all those things. They're only thinking gay, straight,
32 maybe bi, but that's as far as they are.

1 Discussion

2 The aim of this research was to gain a better understanding of how both
3 professionals and emerging adults think about and conceptualize sexual identity in
4 order to develop an updated definition. Based on these interviews, there is no one
5 way to succinctly define all of the components that construct a person's sexual
6 identity. Rather, as participants repeatedly pointed out, sexual identity is something
7 that an individual creates for themselves, which may or may not have overlapping
8 features with other people's sexual identities. What is included depends on the
9 culture and immediate environment someone is in, their own self-awareness about
10 their sexuality, and the different ways they think about, describe, and express it. It is
11 something belonging to the individual alone, but is influenced by the world around
12 them and how they interact with it.

13 **Sexual identity definition**

14 Taking the results as a whole, we propose the following definition of sexual
15 identity:

16 Sexual identity is the individual pattern of attraction, interest, and
17 thoughts someone has around sexual partners and sexual behaviors,
18 which is influenced by their immediate environment and larger cultural
19 surroundings, as well as the life-long experiences that add to their sexual
20 knowledge and self-understanding.

21 This definition reflects other research that has found sexuality to be fluid (Diamond,
22 2016; Katz-Wise, 2015; Manley et al., 2015) and that people experience their
23 sexuality as more complex than gender attraction alone (van Anders, 2015;
24 Worthington et al., 2002). What the definition describes is not necessarily new, as
25 sexuality is consistently recognized as dynamic, culturally influenced, and complex
26 (Dillon et al., 2011; Hammack, 2005; Savin-Williams, 2011; van Anders, 2015), but
27 what the definition does offer is a straightforward way of bringing together these
28 characteristics of sexual identity. Unlike sexual configurations theory (van Anders,
29 2015) there are not specific components or aspects of sexual identity (domains and
30 parameters in sexual configurations theory) included in this definition. Not
31 including specific aspects makes this definition useful for providing people with a
32 prompt for describing their sexual identity in a way that focuses on what is most

1 important to them. This may result in missing some aspects that are important that
2 people do not consciously think of as part of their sexual identity, but it can be used
3 as a starting point for getting people to think about their sexual identity. Sexual
4 configurations theory is a more detailed approach to describing and assessing
5 sexuality, however both this theory and the definition created in the current study
6 align in terms of the complex and varied ways that people think about different
7 aspects of their sexuality.

8 **Definition development**

9 The interviews in this research demonstrate the similarities and differences in how
10 both professionals in the area of human sexuality and emerging adults think about
11 the term sexual identity. Three broad themes (components, outside influences, and
12 underlying characteristics) emerged for both groups indicating overlap in how these
13 groups think about the term. The subthemes also reflect a similarity of thinking,
14 however there are differences in the level of detail within these. The components of
15 sexual identity identified aligns with previous descriptions of sexual identity that
16 include behavior, attraction, thoughts, and intimate relationships as comprising
17 sexual identity (Archer & Grey, 2009; Morgan, 2013; Worthington et al., 2002).
18 The way participants described outside influences is consistent with early research
19 into sexual identity and orientation that emphasized the importance of social and
20 cultural influences on the understanding of sexual identity (Alderson, 2003; Eliason,
21 1996). This also reflects the influences described in ecological systems theory
22 (Bronfenbrenner, 1979) and the different ways these influences interact and change
23 over time. This ability for sexual identity to change was noted by participants with
24 sexual identity being changeable as people gain experience and learn more about
25 themselves and sexuality. Also highlighted was how everyone will define sexual
26 identity differently, making it hard, and possibly unnecessary, to create definitions,
27 which reflects other research where people are resistant to labels (Baldwin et al.,
28 2015). Despite these concerns, participants in this study agreed that labels and
29 identity definitions are a useful way to find similar others or communicate an
30 important aspect of the self.

1 **Sexual orientation or sexual identity?**

2 For emerging adults, the main issue with thinking about sexual identity was the
3 term itself. Most were more familiar with sexual orientation and quickly linked
4 sexual identity to sexual orientation, often considering them the same thing. During
5 the course of the interviews; however, this changed for some participants who then
6 felt sexual identity and sexual orientation were separate things. The focus on this for
7 participants was thinking of sexual orientation as a way of describing attraction in
8 relation to gender and the label that goes with it. Overall, participants from both
9 groups felt the terms were different, often with sexual orientation being considered
10 part of sexual identity, although not necessarily the most important part. Some
11 professional participants took issue with the term ‘identity’ as they felt it was too
12 much like people having to label themselves. Although emerging adult participants
13 had a similar issue with labelling, most felt that sexual identity was an appropriate
14 term. Taking this into consideration, along with participants discussing sexual
15 identity similar to existing uses of the term, we argue that (at the present time)
16 sexual identity is the most fitting term. Researchers and professionals should take
17 this into consideration when choosing which terms they want to use in their work,
18 and what they are aiming to research or discuss. If someone is focusing on sexuality
19 in relation to gender, then sexual orientation is a more fitting term; but, if someone
20 is considering aspects of sexuality not specifically related to gender then sexual
21 identity is a better fit.

22 **Differences between Groups**

23 The main difference between the groups was with the detail in the
24 conceptualizations, with professionals tending to have more detailed and nuanced
25 thoughts about sexual identity. This is not to say that emerging adults had shallow
26 ideas on the topic, more that due to an often self-professed lack of previous thinking
27 about sexual identity, they had only thought about some of the more culturally
28 salient parts, such as gender attraction, and physical and romantic attraction. Those
29 emerging adults who self-identified with a minority sexual orientation or who
30 referenced being in a social circle with diverse sexualities had broader
31 conceptualizations of sexual identity. This similarity in depth of thinking around
32 sexual identity between professionals and this subgroup of emerging adults reflects

1 the finding of the importance of experience and knowledge in how people
2 understand their sexual identity. Education also plays a role as professionals will
3 have been in more formal settings where they have been asked to think about
4 sexuality and discuss it with others. Most participants would not have had the
5 experience of a formalised discussion on sexuality, perhaps limiting their
6 vocabulary around this topic. Those who have more experience thinking about
7 sexuality and interacting with a range of sexualities seem to have more nuanced
8 thoughts on the topic.

9 These findings also demonstrate that current understandings of the terms
10 sexual identity and sexual orientation are used similarly between professionals and
11 emerging adults. It is encouraging that these two groups are using the terms in
12 similar ways, as this indicates that professionals are aware of how people are
13 currently thinking about sexual identity. This overlaps with some of the sexual
14 identity research that uses the term to describe a wider range of aspects of sexuality
15 than just sexual orientation labels (Dillon et al., 2011; van Anders, 2015).. Some
16 researchers use sexual orientation identity instead of sexual identity to describe the
17 labels people use and this may help avoid confusion over the different ways people
18 use sexual identity.

19 **Limitations and future research**

20 A limitation of this research is the restricted range of participants (from Australia
21 and the USA), whose collective perspective on sexual identity would be influenced
22 by these environments. Additionally, we did not collect sexual orientation identity
23 labels, collecting this information may provide more information about how people
24 who have developed different sexual orientation identities think about sexual
25 identity. Using a more diverse sample (in terms of culture, gender identity and
26 profession) in future research may produce a more diverse definition of sexual
27 identity and new insights. Nonetheless, these findings provide insight into how
28 people in this context think about sexual identity.

29 Future research should also consider the impact of participating in this type
30 of interview on developing sexual identities. As noted from the interviews, some
31 emerging adults reported that their thoughts on sexual identity might have expanded
32 during the course of the interviews, but the longevity of this effect is unclear.
33 Previous research suggests a clearer understanding of one's own sexual identity has

1 positive benefits for people's sexual behavior and self-esteem (Archer & Grey,
2 2009). Further research in this area is warranted.

3 These findings can be used by researchers when deciding whether to use the
4 term sexual identity or sexual orientation in their research. As described here and
5 consistent with other research (van Anders, 2015), these are distinct terms and while
6 they do overlap it is important to consider which best applies to the research
7 question of interest. Using the term sexual orientation instead of sexual identity
8 when asking people about more than orientation may limit self-descriptions and
9 leave out important aspects. Using sexual identity when only asking about
10 orientation may alienate people whose identities are not primarily related to
11 orientation. Researchers should also consider broadening what is included when
12 asking people to describe their sexual identity as this may provide a more nuanced
13 understanding of how people think about and describe their sexuality or the ways
14 their sexuality has impacted them.

15 **Conclusion**

16 The definition of sexual identity developed from this research is framed within an
17 ecological perspective, acknowledging the influence of environment and culture.
18 Whilst incorporating sexual orientation, this is not the only component, or
19 necessarily the most important one to everyone. No specific list of universal
20 components was identified, rather a general understanding of what is important to
21 people and how they might become aware of and make sense of the different parts
22 of their sexuality. This provides the space for individuals to describe their sexual
23 identity more accurately. Understanding how the term is being used beyond
24 academia provides insight into the ways people are talking about and describing
25 sexual identity in everyday contexts and provides support for the idea that people
26 think about sexual identity as a broad range of characteristics. This also serves to
27 demonstrate how people and their environments influence each other and the need
28 for research to continue to look at the changing ways that people describe their
29 sexual identity.

1 Chapter 4 Online and offline sexual activities and sexual
2 identity development

3 Note: The following chapter has been written up for publication and is currently
4 under revision.

5 Abstract

6 Accessing online sexual activities is one way that people can explore sexual
7 identity, but how different types of online sexual activities impact on sexual identity
8 development is not known. The aim of the present study was to examine the
9 relationships between sexual identity development and participation in three types
10 of online and offline sexual activities. Participants were 335 people residing in
11 Australia who completed an online survey. Moderation analysis and regression
12 were used to analyse the results. The sexual identity development statuses of
13 openness to exploration, commitment, and synthesis were examined along with
14 three types of activities; solitary-arousal, partnered-arousal, and non-arousal
15 activities were examined. Gender identity and relationship status were tested as
16 moderators of the relationship between openness to exploration and sexual
17 activities. Openness to exploration was associated with greater participation in
18 partnered and non-arousal online sexual activities and partnered-arousal offline
19 activities. Openness to exploration, sexual identity commitment, and lower amounts
20 of participation in online solitary-arousal activities were associated with synthesis.
21 Effect sizes were all large. Results indicate that online sexual activities are
22 associated with sexual identity development and that they fulfil different needs than
23 offline sexual activities. The results highlight the need to look at different types of
24 online sexual activities and the different roles they play in sexual identity
25 development.

26

27 **Keywords:** cybersex/internet sex; quantitative research; sexual behavior; media
28 influence

29

30

1 Introduction

2 Initial research into sexual identity focused on how people came to be aware of and
3 conceptualize lesbian, gay, and bisexual sexual orientations and described models
4 of how these identities developed (Cass, 1979; Fassinger & Miller, 1997; McCarn
5 & Fassinger, 1996; Troiden, 1979). Further research into both heterosexual identity
6 formation (Eliason, 1995; Morgan, 2012) and components of sexual identity beyond
7 orientation (Dillon et al., 2011; Worthington et al., 2002) has been conducted.
8 These expanded the focus from sexual orientation to a broader conceptualization of
9 sexual identity and reflect changes in how people think about their sexual selves
10 and what should be considered when discussing or researching sexual identity
11 development.

12 Identity Development

13 Many of these identity development models (Cass, 1979; Fassinger & Miller, 1997;
14 McCarn & Fassinger, 1996; Troiden, 1979) described similar patterns of identity
15 development to Marcia's (1966) ego identity statuses, based on Eriksons' (1959)
16 identity vs role confusion stage of the psychosocial stages of development. Within
17 Marcia's (1966) statuses' framework, people can question, explore, and recommit
18 to an identity multiple times throughout their lives. The first status is diffusion,
19 which is a lack of commitment or exploration; the second is foreclosure, which is
20 commitment without exploration; the third is moratorium, where someone is
21 exploring with the aim of committing to an identity; the fourth is identity
22 achievement, which is commitment after exploration. Moratorium is entered when
23 something challenges what someone knows about themselves, such as questioning a
24 heterosexual identity, leading to the individual rethinking their identity. Resolving
25 this conflict by exploring sexual orientation and finding they may, for example,
26 better identify as bisexual can help re-establish their identity, moving them into the
27 status of identity achievement, demonstrating they have a clearer idea of who they
28 are sexually. Not finding a fitting sexual identity and potentially staying in conflict
29 can leave them in moratorium, potentially causing confusion and lack of clarity
30 about who they are. Going through this process of exploration and commitment is
31 associated with positive mental health outcomes compared to holding an identity
32 without going through the process (Kroger et al., 2010). Learning how different

1 materials and experiences are related to this process can aid in supporting people
2 during the period of exploration and achieve positive identity and mental health
3 outcomes.

4 Applying Marcia's ego-identity statuses (Marcia, 1966) to sexual identity
5 formation, Worthington et al. (2008) developed the Measure of Sexual Identity
6 Exploration and Commitment to assess sexual identity development for all sexual
7 orientations. They proposed that regardless of sexual orientation, people go through
8 a process of exploration and commitment to their sexual identity, resulting in a
9 synthesized sexual identity, similar to Marcia's identity achievement status. They
10 considered sexual identity to include values, beliefs, and roles related to sexuality.
11 When exploring these different parts of the sexual self it, is not necessary to be
12 committed to an identity; however going, through this process is associated with
13 positive psychological well-being, while commitment without exploration is
14 negatively associated with well-being (Hucker et al., 2010; Muise et al., 2010). Due
15 to this model being recently used to research identity for a wide range of sexual
16 identities and orientations (Dillon et al., 2011) it was determined to be a more useful
17 model for the study than one, such as Cass (1979), that has been used to describe
18 identity development specifically for sexual minorities.

19 People can go through a process of exploring and (re)committing to their
20 sexual identity at any age, however in high income countries, such as Australia,
21 people are most likely to do this during adolescence and emerging adulthood
22 (Arnett, 2000). In adolescence, people begin to develop a sense of personal identity,
23 as they consider how to begin their adult lives, which continues into emerging
24 adulthood as people move out of home, begin careers, and establish longer-term
25 romantic relationships (Arnett, 2000; Erikson, 1959; Schwartz, Donnellan, et al.,
26 2013). This period is unique to cultures where people can delay taking on adults
27 roles, such as entering into marriage or beginning careers, until they are in their
28 twenties (Arnett, 2000). Going to university and postponing marriage and
29 parenthood allows people to experiment with and explore different possible
30 identities. Within these cultures there is evidence that social class plays a role in the
31 experience of emerging adulthood, but that across social classes people are
32 experiencing emerging adulthood (Arnett, 2016). Minority cultures also impact the
33 extent that emerging adulthood is experienced, which is influenced by those

1 cultures social norms around marriage and parenthood (Arnett, 2000; Nelson, 2003)
2 Learning about different ways to express and think about sexuality and exploring
3 different relationships can influence how people think about their own sexual
4 identity. Exposure to new ideas and environments helps facilitate this period of
5 exploration and commitment. There are a wide range of ways in which people can
6 explore their sexuality, however the impact of these different methods on identity
7 development is not fully understood. To better understand these methods, this paper
8 explores the function of the internet as a space for people to explore their sexual
9 identity.

10 **Online Sexual Activities and Sexual Identity Development**

11 The internet is an environment where people can explore and express their
12 sexuality, where they may be exposed to ideas and people that they would not
13 encounter in their offline environment. Through the internet people can access a
14 wide range of sexual health and education materials, view and learn about a wide
15 range of sexual activities, and interact sexually with other people (Cooper et al.,
16 2003; Döring, 2009). These activities can be divided into three groups of online
17 sexual activities: solitary-arousal sexual activities (e.g. watching pornography);
18 engaging in partnered-arousal sexual activities (e.g. online sex chat); non-arousal
19 sexual activities (e.g. seeking sexual health information (Shaughnessy et al., 2017)).
20 Other research on online sexual activities includes addictive behaviors around
21 sexual materials (Griffiths, 2012), the impact of online sexual activities on
22 psychological well-being (Daneback et al., 2013), and the impact of accessing
23 online sexual materials on relationships (Ballester-Arnal et al., 2014; Campbell &
24 Kohut, 2017; Whitty & Quigley, 2008).

25 There is a growing body of research looking at how sex and gender minority
26 individuals use the internet as part of identity development (DeHaan et al., 2013;
27 Hillier & Harrison, 2007; McInroy & Craig, 2019). Some of these studies have
28 found that LGBTQI+ youth use the internet to find sexual resources, date, and learn
29 about offline events (DeHaan et al., 2013) as well as a safe space to explore,
30 experiment, and express their identity (McInroy & Craig, 2019). One Australia
31 specific study had similar findings, where young people reported using the internet
32 to learn more about their sexual identities, including aspects related to intimate
33 relationships, friendships, community, and sex (Hillier & Harrison, 2007). Despite

1 this wide range of research there has been little research into the impact of the
2 internet on sexual identity outside of sexual orientation and nothing that looks at
3 heterosexual identity development. In part this is likely due to research into
4 heterosexual identity development only recently becoming of interest to researchers
5 (Davis-Delano & Morgan, 2016; Frankel, 2005; Worthington et al., 2002).
6 Exploring sexual identity has been associated with positive attitudes towards
7 LGBTQI+ groups for people with a heterosexual identity (Worthington et al.,
8 2005). This combined with sexual identity development having positive
9 associations with mental health (Muisse et al., 2010), suggests that better
10 understanding and supporting heterosexual sexual identity development can have
11 positive impacts on both for the individual and those they interact with.

12 Expanding this research to look at how internet use informs development of
13 a broader conceptualization of sexual identity using Worthington et al.'s (2008)
14 model will help provide a more comprehensive understanding of sexual identity
15 development. The subscales within this model reflect exploration and commitment
16 to sexual identity. The subscale of openness to exploration captures a general sense
17 of being open to exploring sexuality, most related to the status of moratorium
18 (Worthington et al., 2008). The subscales of commitment and synthesis represent
19 identity achievement as these are both related to having gone through a period of
20 exploration and then identity commitment. These two subscales are similar, but
21 reflect slightly different ideas with synthesis representing an integration of sexual
22 identity into the self that occurs after exploration and commitment. Someone can be
23 committed to an identity, but not have explored it. Going through exploration before
24 commitment and exploring sufficiently to reach a point committing to an identity
25 are both important for having the positive mental health outcomes associated with
26 this process (Muisse et al., 2010). As both of these are needed to achieve identity
27 synthesis both of these statuses are included in this study. Additionally, these three
28 subscales are important as they reflect the main components of exploration and
29 commitment that are behind Marcia's statuses (1966). This model, which
30 recognizes that identity development can occur, or re-occur at any age, also
31 provides support for looking at sexual identity development statuses across a wide
32 range of ages. Older adults do use the internet for sexually-related purposes (Træen

1 et al., 2018) and having access to a wider range of materials and sexual information
2 may have an impact on their sexual identity development.

3 There are differences in what people can access online compared to offline,
4 but there is evidence that how people use the internet for sexual exploration and
5 identity development is similar to offline exploration and development (Kuper &
6 Mustanski, 2014). Information gathering, interacting with others, and exposure to
7 new sexual materials occurs in both places. This can include finding sexual and
8 romantic partners, as the internet provides access for people to find dates and sexual
9 hook-ups, and also ways to interact sexually via video or text chat, and sharing
10 pictures. Although the internet is often considered a distinct space, it is increasingly
11 a part of daily life as more people have internet access, with 87% of Australians
12 using the internet and 91% of people with household internet access using a mobile
13 or smartphone to access the internet (Australian Bureau of Statistics, 2018). With
14 this merging of the online and offline, it is unclear if accessing sexual materials
15 online and offline is related to different outcomes in terms of sexual identity.
16 Previous research has found online and offline sexual experiences are associated
17 with each other (Sorbring et al., 2014), but it is not known if this is related to
18 identity.

19 There are some demographic factors that influence how and whether
20 someone accesses online sexual materials, including relationship status and gender.
21 When someone is in a relationship they are less likely to access arousal-based
22 online sexual activities (Ballester-Arnal et al., 2014), which could change how
23 people access online sexual activities even when they are open to exploring their
24 sexual identity. It could be that this exploration occurs offline in the context of the
25 relationship, increasing the range of sexual activities someone participates in when
26 they are open to exploring sexual identity. Within heterosexual couples, men are
27 both more likely to access pornography and agree that is acceptable for people in a
28 relationship to look at pornography than their female partners (Carroll et al., 2017).
29 Gender identity also predicts how much someone accesses sexual materials, with
30 men accessing more frequently than women (Campbell & Kohut, 2017). People
31 exploring their gender identities, such as transgender people, often use the internet
32 to find similar others, find help, support, and information around transitioning, and
33 a safe space to express themselves (Austin et al., 2020; Cipolletta et al., 2017).

1 Suggesting that male and non-binary identifying people will access more online
2 sexual activities as part of identity exploration compared to people who identify as
3 women. These demographic factors may influence who uses the internet and what
4 types of online sexual activities are accessed as part of exploring sexual identity. It
5 is unclear if these gender differences would still have a relationship to how much
6 someone participates in online sexual activities when they are in different identity
7 statuses. In addition internet use may expose people who are not actively exploring
8 their sexual identity to sexual information and exploration. A meta-analysis of
9 unwanted online sexual exposure found 20.3% of adolescents experienced
10 unsolicited exposure to sexual materials (Madigan, Villani, et al., 2018). This could
11 be occurring for sexual education material as well, as more and more people share
12 this information on social media (Döring, 2021). As this exposure could impact
13 people with majority sexual identities and orientations, such as heterosexual-
14 identifying individuals, it is important to include a wide range of identities within
15 online sexual activity and identity research. Finding out how people are using the
16 different spaces and resources and the impact of these related to sexual identity
17 development will help understanding of how people use the internet and the effects
18 of this use.

19 Present study

20 While there has been research into online sexual activities and the use of the
21 internet related to sexual identity, there is less known about the relationship
22 between online sexual activities and sexual identity development (Wängqvist &
23 Frisé, 2016). This study is part of a larger longitudinal study on online and offline
24 sexual activities and sexual identity development. Data for this study comes from
25 the first stage of data collection and with this data we wanted to examine the
26 relationship between online and offline sexual activities and different sexual
27 identity statuses with a focus on the statuses of moratorium and identity
28 achievement. Moratorium status was chosen because of previous findings
29 suggesting people use the internet to explore sexual identity (DeHaan et al., 2013;
30 Hillier & Harrison, 2007; McInroy & Craig, 2019) and we wanted to look at how
31 people who are in moratorium (a period of exploration) interact with a wide range
32 of different types of online and offline sexual activities. We were interested in the

1 identity achievement status because we wanted to see if people who have
2 committed to a sexual identity interact with online and offline sexual activities
3 differently than those who are exploring sexual identity. First we wanted to find out
4 if openness to exploration was related to participation in online and offline sexual
5 activities and if this varied depending on relationship status and gender identity.
6 Then we wanted to find out if openness to exploration and commitment, which
7 typically precede synthesis, along with online and offline sexual activities, predict
8 synthesis. In order to focus on how these variables interacted we wanted to control
9 for age, gender, sexual orientation, and relationship status, as it is possible that
10 some of these relate to identity synthesis.

11 The overall aim of the study therefore is to look at the relationships between
12 sexual activities (online and offline) and exploration, commitment, and synthesis
13 and how these relationships are moderated by relationship status and gender. We
14 hypothesized that:

15 Hypothesis One: People who are more open to exploration will participate in
16 higher numbers of online and offline sexual activities compared to those low in
17 openness to exploration.

- 18 a. This relationship will be moderated by relationship status; with being in
19 a relationship weakening the relationship to online sexual activities and
20 strengthening the relationship to offline sexual activities
- 21 b. This relationship will also be moderated by gender, with identifying as
22 female weakening the relationship to both online and offline sexual
23 activities, and identifying as male or non-binary strengthening the
24 relationship to online sexual activities.

25 Hypothesis Two: Higher amounts of online sexual activity and behavior
26 participation will be associated with lower sexual identity synthesis scores. Higher
27 amounts of offline sexual activities and behaviors and higher sexual identity
28 commitment and openness to exploration scores will be associated with higher
29 sexual identity synthesis scores. Age, gender, sexual orientation, and social
30 desirability will be used as control variables.

1 **Method**2 **Participants**

3 For this part of the study, a priori power analysis indicated a sample size of 243 to
 4 achieve a medium effect. A total of 335 people participated in this study (see Table
 5 1 for demographics). Recruitment took place between May and November of 2017
 6 and participants were recruited from a university research participant pool and
 7 through Australian-based online message boards to complete an online survey.
 8 Those recruited through the university were offered course credit in return for
 9 participating and those recruited online were given the option to enter a raffle for a
 10 gift card. Initially 612 people completed the survey, but 277 were excluded because
 11 they did not complete the Measure of Sexual Identity Exploration and Commitment,
 12 which was the key measure in this study, did not complete a majority of one of the
 13 other scales, or did not meet eligibility criteria. Participants needed to be at least 18
 14 years of age and be Australian residents to participate. The median time to complete
 15 the survey was 18 minutes. This study received ethics approval from the
 16 University's Human Ethics Research Committee.

17 Table 4.1 Demographics

Variable	All	University	Online	% of final sample
Age				
18-29	279	214	65	83
30-39	29	6	23	9
40-49	18	3	15	5
50-59	5	0	5	2
60-69	3	0	3	1
70-79	1	0	1	0
Gender				
Female	216	152	64	64
Male	93	66	27	28
Androgynous	7	1	6	2
Transgender	9	2	7	3
Genderqueer	8	2	6	2
Not Sure	2	0	2	1
Sexual Orientation				
Heterosexual	187	154	33	56
Mostly Heterosexual	60	35	25	18
Bisexual	30	13	17	9
Mostly Homosexual	7	2	5	2

Homosexual	10	7	3	3
Asexual	19	2	17	5
Queer	10	2	8	3
Pansexual	12	8	4	4
Relationship Status				
Single	142	97	45	42
Dating	44	37	7	13
In a Relationship (Mono)	97	74	23	29
In a Relationship (Poly)	12	4	8	4
Married/de facto	37	11	26	11
Divorced	3	0	3	1

1

2 **Measures**

3 **Demographics.** Demographic information, including age, sexual orientation
4 (“which sexual orientation best represents you?”), gender identity (“which gender
5 do you most identify with?”), and relationship status, was collected. Each of these
6 were followed by the list of options as seen in Table 4.1.

7 **Measure of Sexual Identity Exploration and Commitment**

8 (**Worthington, Navarro, Savoy, & Hampton, 2008**). This is a 22-item measure
9 that assesses sexual identity development. The measure assesses four subscales,
10 three on identity development statuses and one on sexual orientation: commitment
11 (6 items), exploration (8 items), synthesis/integration (5 items), and sexual
12 orientation identity uncertainty (3 items), (Worthington et al., 2008). Three of these
13 subscales were used in this study: commitment (“I have a firm sense of what my
14 sexual needs are”), exploration (“I went through a period in my life when I was
15 trying to determine my sexual needs”), and synthesis/integration (“My sexual
16 values are consistent with all of the other aspects of my sexuality”). Items are rated
17 on a 6-point Likert scale ranging from 1 (*very uncharacteristic of me*) to 6 (*very*
18 *characteristic of me*) and scores of each subscale are averaged. Higher scores on
19 commitment indicate someone is more committed to their sexual identity, higher
20 scores on exploration indicate greater openness to exploration, and higher scores on
21 synthesis/integration indicate holding a cohesive sexual identity. Reliability for the
22 subscales in this study was good with $\alpha = .83$ for commitment, $\alpha = .91$ for
23 exploration, and $\alpha = .93$ for synthesis/integration.

24 **Online Sexual Activities Questionnaire (OSAQ; Shaughnessy, Byers,**
25 **Clowater, & Kalinowski, 2013).** The Online Sexual Activities Questionnaire is a

1 48-item measure that assesses experience with online sexual activities (OSA) and
2 consists of three subscales. These measure amount of solitary-arousal activities
3 (e.g., viewing sexually explicit materials, 16 items), partnered-arousal activities
4 (e.g., engaging in writing and sending sexually explicit materials to someone else,
5 18 items), and non-arousal activities (e.g., looking for information on sexual
6 activities, 14 items) someone engages in. Items are rated on a 7-point frequency
7 scale ranging from 0 (*never*) to 6 (*more than once a day*). Mean scores are
8 calculated due to the scales having different numbers of items. Reliability of the
9 subscales was good (solitary arousal $\alpha = .90$, partnered arousal $\alpha = .88$, and non-
10 arousal $\alpha = .80$).

11 **Offline Sexual Activities Questionnaire (OFSAQ).** This questionnaire was
12 an altered version of the Online Sexual Activities Questionnaire (Shaughnessy &
13 Byers, 2013) designed to measure experience with offline versions of the online
14 sexual activities asked about in the OSAQ. This measure was adapted by myself for
15 this study. Solitary, partnered, and non-arousal subscales were all created. Adapted
16 items were not pilot tested. When an online sexual activity did not have an offline
17 equivalent no new question was asked, such as “gone into a virtual sex world using
18 an avatar to look around but not talk with people” (see Appendix C for full measure
19 and Online Sexual Activities Questionnaire items). The solitary-arousal and the
20 partnered-arousal subscales were each reduced by one item, the non-arousal
21 subscale stayed the same. As with the original scale items are rated on a 7-point
22 frequency scale ranging from 0 (*never*) to 6 (*more than once a day*). Mean scores
23 are calculated due to the scales having different numbers of items. Internal
24 consistency for the subscales was good (solitary arousal = .87, partnered arousal =
25 .87, and non-arousal = .77).

26 **Socially Desirable Response Set-5 (SDRS-5; Hays, Hayashi, & Stewart,**
27 **1989).** This is a 5-item measure which assesses participants' desire to respond in a
28 socially desirable way (Hays et al., 1989). Participants rate statements on a 5-point
29 Likert scale. An example item is “I am always courteous even to people who are
30 disagreeable.” Scores range from 5 to 25 with higher scores representing greater
31 socially desirable responding. For this study the Cronbach’s alpha was .54; while
32 this is low it is consistent with other research using short form social desirability
33 scales (Beretvas et al., 2002).

1 **Data Analysis**

2 Gender was coded as a series of dummy variables that measured if someone
3 identified as female, male, or non-binary. Sexual orientation was also dummy coded
4 to measure if someone identified as primarily heterosexual, primarily homosexual,
5 or non-binary. For both gender and sexual orientation a third non-binary group was
6 created so that we could include people who identified outside of female/male or
7 heterosexual/homosexual in the analysis despite the small numbers who selected the
8 more specific gender identities and sexual orientation descriptors. Relationship
9 status was also dummy coded to measure if someone was single or in a relationship,
10 again to more simply include all relationship types. All continuous variables were
11 mean centered.

12 Data was analyzed using IBM SPSS Version 26. Prior to the main analysis,
13 the data was screened for missing data. Expectation maximization was used to
14 replace missing data (less than 4% of the data) as Little's Missing Completely at
15 Random test was non-significant $\chi^2 .917$, $DF = 2$, $p = .632$. Additive moderation
16 analysis, conducted with the PROCESS macro (Hayes, 2017), was used to explore
17 the first set of hypotheses on the moderating effect of relationship status and gender
18 on the relationship between openness to exploration and online and offline sexual
19 activities. Using the Process macro allowed for both moderators to be entered into
20 the model simultaneously and for gender to be treated as a multi-categorical
21 moderator with three groups; female, male, and non-binary. For gender, two rounds
22 of analysis were done, the first with female as the reference group and the second
23 with male as the reference group, this allowed for comparisons between all three
24 groups.

25 Multiple regression was used to test the second hypothesis and investigate
26 how much variance in synthesized sexual identity can be predicted by exploration,
27 identity commitment, online sexual activities, offline sexual activities, online sexual
28 behaviors, and offline sexual behaviors. There were some multivariate outliers
29 which were due to participants with unique combinations of orientation, gender
30 identities, and relationship styles, or who described high or low amounts of
31 participation in sexual activities or behaviors. Cook's distance was below 1,
32 suggesting that none of the cases were influential. No transformation was done on

1 these cases as it was determined that it would be inappropriate to alter identity
2 descriptors or reports of behavior.

3 Results

4 Table 2 provides descriptive statistics, and correlations. T-tests and chi-square tests
5 of contingencies were run to look for any significant differences between the two
6 data collection locations (university students and online participants). The groups
7 were significantly different from each other in online solitary-arousal activities,
8 $t(169.65) = -2.87, p = .005$, two-tailed, and offline non-arousal activities $t(188.77) =$
9 $2.13, p = .034$, two-tailed, gender $\chi^2(2, N = 334) = 28.23, p < .000$, and sexual
10 orientation $\chi^2(2, N = 334) = 43.46, p < .000$. These results support the decision to
11 data collect in two locations in order to get a more diverse sample.

12 Socially desirable responses are sometimes a problem when asking
13 participants about sensitive topics, such as sexuality, so items to assess biased
14 responses were included in this research. To see if social desirability was related to
15 any of the dependent variables, correlations between a mean score on the social
16 desirability scale (Hays, et al., 1989) and the other measures were examined. There
17 was a weak, significant correlation between social desirability and synthesis $r =$
18 $.120 (p = .031)$, indicating people who have a synthesized sexual identity might be
19 more inclined to want to be viewed positively, resulting in including this measure as
20 a control variable in the second hypothesis.

Table 4.2 Descriptive statistics and intercorrelations

Variable	Ex	Comm	S	SA On	PA On	NA On	SA Off	PA Off	NA Off	Age	RS	Gender	SO	SDRS-5
Ex	-													
Comm	.096	-												
S	.097	.524**	-											
SA On	.396**	.095	-.069	-										
PA On	.386**	.123*	.020	.570**	-									
NA On	.383**	.044	-.047	.490**	.666**	-								
SA Off	.135*	.011	.004	.367**	.30**	.262**	-							
PA Off	.386**	.261**	.074	.391**	.672**	.560**	.305**	-						
NA Off	.072	-.051	-.025	.170**	.321**	.432**	.583**	.369**	-					
Age	.006	.172**	.050	.140*	-.039	-.022	.053	.011	-.057	-				
RS	.193**	.196**	.031	.017	.045	-.007	.126*	.280**	.087	.098	-			
Gender	.054	-.071	-.048	.397**	.089	.052	.092	-.117*	-.077	.268**	-.069	-		
SO	.196**	-.080	-.080	.139*	.029	.119*	.108*	-.010	-.003	.158**	-.060	.248**	-	
SDRS-5	-.043	.049	.119*	-.014	-.121*	-.038	.042	-.051	-.049	.329**	-.018	-.055	.230**	-
Mean	3.97	4.44	4.58	2.05	1.42	1.20	1.08	1.74	1.08	24.67	-	-	-	3.08
SD	1.12	.95	.94	1.04	.65	.83	.62	.78	.62	8.79	-	-	-	0.68
N	335	335	335	335	335	335	335	335	335	335	335	335	335	335

Note. * $<.05$, ** $<.01$, *** $<.001$. Ex = Exploration, Comm = Commitment, S = Synthesis, SA On = Solitary-Arousal Online, PA On = Partnered-Arousal Online, NA On = Non-Arousal Online, SA Off = Solo-Arousal Offline, PA Off = Partnered-Arousal Offline, NA Off = Non-Arousal Offline, SO = Sexual Orientation, RS = Relationship Status, SDRS-5 = Socially Desirable Response Set

1 **Hypothesis One**

2 The first hypothesis was partially supported. In the moderation models, openness to
3 exploration was a significant predictor for online solitary-arousal, partnered-arousal,
4 and non-arousal activities (see Table 4.3), and offline partnered-arousal activities
5 (see Table 4.4).

6 The next set of analyses included relationship status and gender as
7 moderators. Two analyses were run for each outcome variable in order to include
8 each category of the gender moderator. The online sexual activities subscales were
9 examined first (see Table 4.3). Relationship status and gender did not moderate the
10 relationship between exploration and solitary-arousal activities. Gender did predict
11 participation in solitary-arousal activities, with participation in solitary-arousal
12 activities being significantly different between female and male identifying
13 participants and female and non-binary identifying participants, with female
14 participants participating in less solitary-arousal activities than the other groups
15 (Cohen's $f^2 = .47$, indicating a large effect). Relationship status and gender, in
16 combination, moderated the relationship between exploration and partnered-arousal
17 activities (Figure 1.1), indicating that being single or in a relationship moderates the
18 relationship between openness to exploration and partnered-arousal activities
19 differently for each gender group. At low levels of openness to exploration people
20 who were in a relationship participated in more partnered-arousal activities, but at
21 high levels of openness to exploration single people participated in more. This
22 change was largest for non-binary people. Non-binary identity was a significant
23 moderator, indicating the interaction between openness to exploration and having a
24 non-binary identity predicts greater participation in partnered-arousal activities than
25 having a female or male identity at higher scores of openness to exploration
26 (Cohen's $f^2 = .22$, indicating a large effect). Relationship status and gender in
27 combination moderated the relationship between exploration and non-arousal
28 activities, indicating that being single or in a relationship moderates the relationship
29 between openness to exploration and non-arousal activities differently for the
30 different gender groups (see Figure 4.2). This followed the same pattern as for
31 partnered-arousal activities. A non-binary identity (compared to a male identity)
32 moderated the relationship to non-arousal activities, indicating a stronger relationship
33 between non-binary identity and openness to exploration and non-arousal activities

1 compared to males, with non-binary people participating in more non-arousal
 2 activities (Cohen's $f^2 = .23$, indicating a large effect).

3 Table 4.3 Coefficients for multiple moderation effects of relationship status and gender
 4 in the relationship between openness to exploration and online sexual activities
 5 (N=335)

Study Variables	<i>B</i>	<i>SE</i>	95% CI	<i>R</i> ²	ΔR^2	<i>df</i> , <i>F</i>
Solitary-Arousal ¹				.32***		(7, 327) = 21.91
Exploration	0.33***	0.06	[0.22, 0.44]			
Relationship Status	-0.08	0.10	[-0.27, 0.11]			
Male	0.78***	0.11	[0.57, 0.99]			
Non-Binary	0.93***	0.19	[0.55, 1.30]			
Ex x RS	-0.15	0.09	[-0.33, 0.02]			
Ex x Male	0.05	0.10	[-0.13, 0.24]			
Ex x NB	0.19	0.14	[-0.09, 0.47]			
Solitary-Arousal ²						
Exploration	0.38***	0.08	[0.23, 0.53]			
Relationship Status	-0.08	0.10	[-0.27, 0.11]			
Female	-0.78***	0.11	[-0.99, -0.56]			
Non-Binary	0.15	0.20	[-0.25, 0.55]			
Ex x RS	-0.15	0.09	[-0.33, 0.02]		.01	(1, 327) = 3.01
Ex x Female	-0.05	0.10	[-0.24, 0.13]			
Ex x NB	0.14	0.15	[-0.16, 0.43]			
Ex x Gender (all)					.00	(2, 327) = 0.95
Ex x Both M					.01	(3, 327) = 1.74
Partnered-Arousal ¹				.18***		(7, 327) = 10.16
Exploration	0.21***	0.04	[0.14, 0.29]			
Relationship Status	-0.04	0.07	[-0.17, 0.09]			
Male	0.09	0.07	[-0.06, 0.23]			
Non-Binary	0.02	0.13	[-0.24, 0.27]			
Ex x RS	-0.12	0.06	[-0.24, 0.00]			
Ex x Male	-0.03	0.07	[-0.16, 0.10]			
Ex x NB	0.20*	0.10	[0.00, 0.38]			
Partnered-Arousal ²						
Exploration	0.19***	0.06	[0.09, 0.29]			
Relationship Status	-0.04	0.07	[-0.17, 0.09]			
Female	-0.09	0.07	[-0.23, 0.06]			
Non-Binary	-0.07	0.14	[-0.34, 0.20]			
Ex x RS	-0.12	0.06	[-0.24, 0.00]		.01	(1, 327) = 3.88
Ex x Female	0.03	0.06	[-0.10, 0.16]			
Ex x NB	0.22*	0.10	[0.02, 0.42]			
Ex x Gender (all)					.01	(2, 327) = 2.47
Ex x Both M					.02*	(3, 327) = 3.24
Non-Arousal ¹				.18***		(7, 327) = 10.55
Exploration	.30***	.05	[.20, .40]			
Relationship Status	-.14	.09	[-.31, .03]			

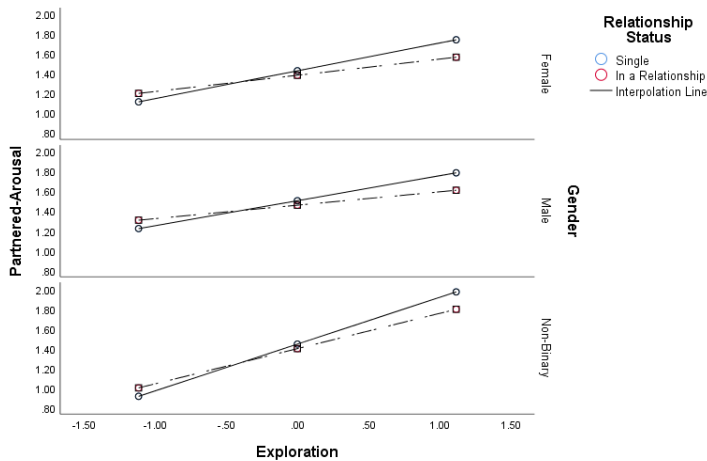
Study Variables	<i>B</i>	<i>SE</i>	95% CI	<i>R</i> ²	ΔR^2	<i>df</i> , <i>F</i>
Male	-.09	.10	[-.28, .10]			
Non-Binary	.12	.17	[-.21, .46]			
Ex x RS	-.15	.08	[-.30, .01]			
Ex x Male	-.10	.08	[-.26, .07]			
Ex x NB	.19	.13	[-.06, .43]			
Non-Arousal²						
Exploration	.21**	.07	[.07, .34]			
Relationship Status	-.14	.09	[-.31, .03]			
Female	.09	.10	[-.10, .28]			
Non-Binary	.22	.18	[-.14, .57]			
Ex x RS	-.15	.08	[-.30, .01]	.01		(1, 327) = 3.60
Ex x Female	.10	.08	[-.07, .26]			
Ex x NB	.28*	.13	[.02, .54]			
Ex x Gender (all)				.01		(2, 327) = 2.32
Ex x Both M				.02*		(3, 327) = 3.04

Note. * $<.05$, ** $<.01$, *** $<.001$ ¹Reference group for gender is Female. ²Reference group for gender is Male. Ex = Exploration, RS = Relationship Status, NB = Non-binary, Both M = Effect of both moderators together on the outcome variables.

1

2 Figure 4.1 Online partnered-activities graph

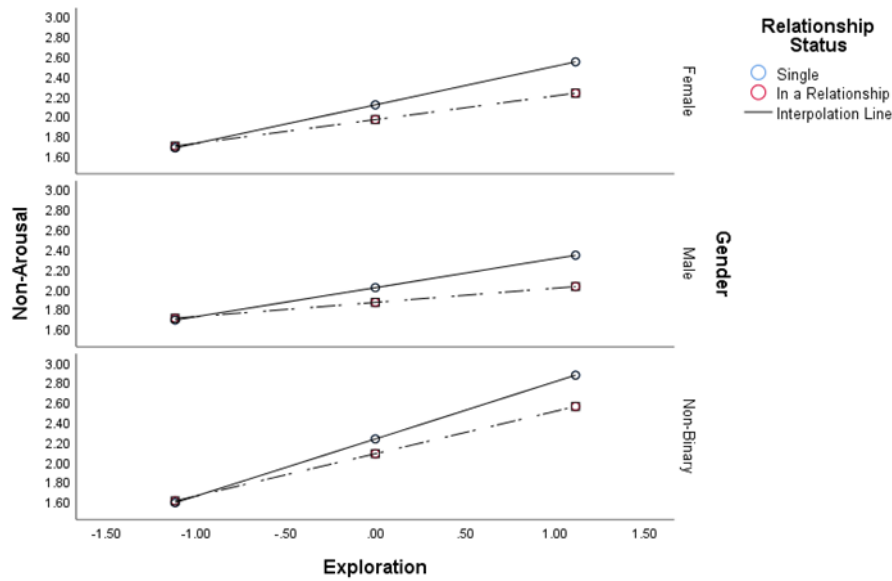
3



4

5 Note. N = 335. Differences of participation in online partnered-arousal activities shown
6 between female, male, and non-binary gender identities at low and high levels of openness
7 to exploration. Within the gender identity groups differences between people who were
8 single or in a relationships also shown. For all three groups at low levels of openness to
9 exploration people who are in a relationship participated in more online partnered-arousal
10 activities, while at high levels, people who were single participated in more. This difference
11 was significant for non-binary identities when compared to female and male identities.

1 Figure 4.2 Online non-arousal activities graph



2

3 *Note.* N = 335. Differences of participation in online non-arousal activities shown between
 4 female, male, and non-binary gender identities at low and high levels of openness to
 5 exploration. Within the gender identity groups differences between people who were single
 6 or in a relationships also shown. For all three groups at low levels of openness to
 7 exploration people in both relationship status groups participated in fewer online non-
 8 arousal activities than at high levels of openness to exploration. At high levels of openness
 9 to exploration people who were single participated in more non-arousal activities than those
 10 in a relationship for all groups. This difference was significant for non-binary identities
 11 when compared to male identities.

12

13

14 Results of the analysis of relationship status and gender as moderators between
 15 openness to exploration and offline sexual activities can be found in Table 4.4. The
 16 overall models for solitary-arousal and partnered-arousal activities were significant.
 17 Within the solitary-arousal model, relationship status was significant; however none
 18 of the moderator interactions were significant. For partnered-arousal activities,
 19 being male-identifying compared to female-identifying, significantly moderated the
 20 relationship (see Figure 4.3; Cohen's $f^2 = .28$, indicating a large effect), with
 21 female-identifying reporting greater participation.

22

1 Table 4.4 Coefficients for multiple moderation effects of relationship status and gender
 2 in the relationship between openness to exploration and offline sexual
 3 activities (N=335)

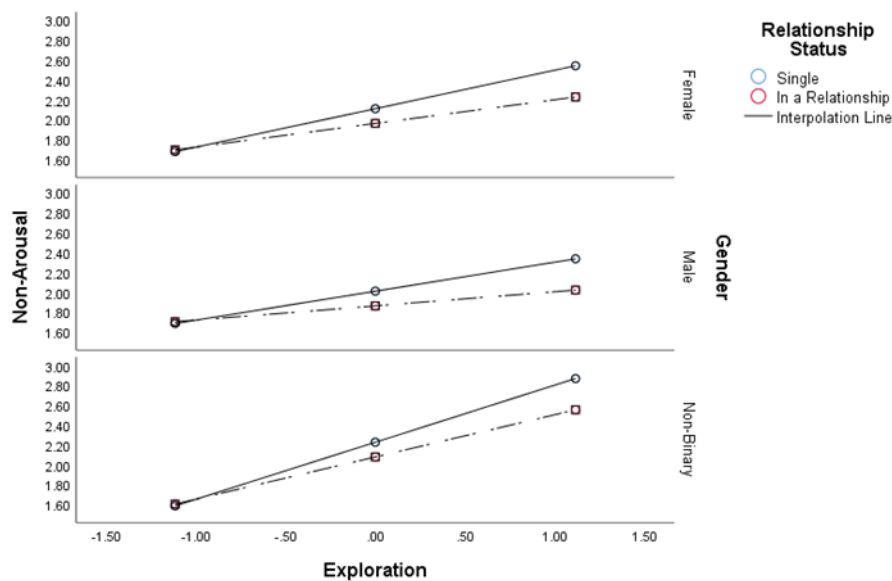
Study Variables	<i>B</i>	<i>SE</i>	95% CI	<i>R</i> ²	ΔR^2	<i>df F</i>
Solitary-Arousal ¹				.05*		(7, 327) = 2.19
Exploration	0.05	0.04	[-0.02, 0.13]			
Relationship Status	0.13*	0.06	[0.00, 0.25]			
Male	0.14	0.07	[0.00, 0.28]			
Non-Binary	0.06	0.12	[-0.19, 0.30]			
Ex x RS	-0.02	0.06	[-0.13, 0.10]			
Ex x Male	-0.01	0.06	[-0.13, 0.11]			
Ex x NB	0.09	0.09	[-0.09, 0.27]			
Solitary-Arousal ²						
Exploration	0.04	0.05	[-0.06, 0.14]			
Relationship Status	0.13	0.06	[0.00, 0.25]			
Female	-0.14	0.07	[-0.28, 0.00]			
Non-Binary	-0.08	0.13	[-0.34, 0.18]			
Ex x RS	0.02	0.06	[-0.13, 0.10]		.00	(1, 327) = 0.10
Ex x Female	0.01	0.06	[-0.11, 0.13]			
Ex x NB	0.10	0.10	[-0.09, 0.29]			
Ex x Gender (all)					.00	(2, 327) = 0.56
Ex x Both M					.00	(3, 327) = 0.43
Partnered-Arousal ¹				.22***		(7, 327) = 13.52
Exploration	0.29***	0.05	[0.20, 0.38]			
Relationship Status	0.312	0.08	[0.16, 0.47]			
Male	-0.22*	0.09	[-0.38, -0.05]			
Non-Binary	-0.28	0.15	[-0.58, 0.02]			
Ex x RS	-0.04	0.07	[-0.18, 0.10]			
Ex x Male	-0.17*	0.08	[-0.32, -0.02]			
Ex x NB	0.05	0.11	[-0.17, 0.27]			
Partnered-Arousal ²						
Exploration	0.12	0.06	[0.00, 0.24]			
Relationship Status	0.32***	0.08	[0.17, 0.47]			
Female	0.22*	0.09	[0.05, 0.38]			
Non-Binary	-0.06	0.16	[-0.38, 0.25]			
Ex x RS	0.31	0.07	[-0.18, 0.10]		.00	(1, 327) = .27
Ex x Female	0.17*	0.08	[0.02, 0.32]			
Ex x NB	0.22	0.12	[-0.02, 0.45]			
Ex x Gender (all)					.01	(2, 327) = 2.98
Ex x Both M					.02	(3, 327) = 2.16
Non-Arousal ¹				.03		(7, 327) = 1.23
Exploration	0.05	0.04	[-0.04, 0.13]			
Relationship Status	0.09	0.07	[-0.05, 0.22]			
Male	-0.10	0.08	[-0.25, 0.05]			
Non-Binary	-0.17	0.14	[-0.43, 0.10]			
Ex x RS	-0.05	0.06	[-0.17, 0.08]			

Study Variables	<i>B</i>	<i>SE</i>	95% CI	<i>R</i> ²	ΔR^2	<i>df F</i>
EX x Male	-0.07	0.07	[-0.20, 0.06]			
EX x NB	0.08	0.10	[-0.12, 0.28]			
Non-Arousal ²						
Exploration	-0.02	0.06	[-0.13, 0.08]			
Relationship Status	0.09	0.07	[-0.05, 0.22]			
Female	0.10	0.08	[-0.05, 0.25]			
Non-Binary	-0.07	0.14	[-0.35, 0.21]			
Ex x RS	-0.05	0.06	[-0.17, 0.08]	.00	(1, 327) = .59	
Ex x Female	0.07	0.07	[-0.06, 0.20]			
Ex x NB	0.15	0.11	[-0.06, 0.36]			
Ex x Gender (all)				0.01	(2, 327) = 1.12	
Ex x Both M				0.01	(3, 327) = 1.03	

Note. * $<.05$, ** $<.01$, *** $<.001$ ¹Reference group for gender is Female. ²Reference group for gender is Male. EX = Exploration, RS = Relationship Status, NB = Non-binary, Both M = Effect of both moderators together on the outcome variables.

1

2 Figure 4.3 Offline partnered-arousal activities graph



3

4 Note. N = 335. Differences of participation in offline partnered-arousal activities shown
 5 between female, male, and non-binary gender identities at low and high levels of openness
 6 to exploration. Within the gender identity groups differences between people who are single
 7 or in a relationships also shown. For all three groups at low levels of openness to
 8 exploration people in both relationship status groups participated in fewer online non-
 9 arousal activities than at high levels of openness to exploration. At high levels of openness
 10 to exploration people who were single participated in more non-arousal activities than those
 11 in a relationship for all groups. This difference was significant for female identities when
 12 compared to male identities.

1 **Hypothesis Two**

2 In step one of the regression, the control variables of age, gender identity,
3 orientation, and social desirability were entered and accounted for a significant 4%
4 of the variance of sexual identity synthesis, $R^2 = .04$, $F(6, 328) = 2.16$, $p = .047$
5 (see Table 4.5). In step two, exploration, identity commitment, both online and
6 offline sexual activities (solitary, partnered, and information seeking), online sexual
7 behaviors, and offline sexual behaviors were added and accounted for an additional
8 significant 29% of the variance in sexual identity synthesis, $\Delta R^2 = .29$ $\Delta F(8, 320) =$
9 11.40 , $p < .000$. In combination, the variables accounted for a significant 34% of the
10 variance in synthesis, $R^2 = .33$, $F(14, 320) = 6.87$ $p < .000$. The effect size is large,
11 $f^2 = .49$. The significant predictors at step two were exploration ($sr^2 = .018$),
12 commitment ($sr^2 = .246$), solitary-arousal online sexual activities ($sr^2 = .019$), and
13 social desirability ($sr^2 = .016$).

1 Table 4.5 Regression predicting identity synthesis (N=335)

Variable	Model 1				Model 2			
	<i>B</i>	<i>SE B</i>	β	CI	<i>B</i>	<i>SE B</i>	β	CI
Age	0.004	0.006	.035	-.009, .016	-0.007	0.005	-.064	-.018, .004
Female	-0.081	0.120	-.042	-.317, .155	-0.163	0.116	-.084	-.391, .065
Non-binary Gender	-0.440	0.223	-.126	-.899, .019	-0.018	0.204	-.005	-.419, .382
Primarily Homosexual	-0.009	0.238	.004	-.477, .459	0.064	0.208	.030	-.346, .473
Non-binary Orientation	-0.168	0.258	-.074	-.675, -.338	-0.087	0.224	-.038	-.528, .355
Social Desirability	0.205	0.082	.148*	.044, .366	0.196	0.070	.142**	.058, .334
Exploration					0.133	0.046	.158**	.043, .222
Commitment					0.535	0.049	.542***	.437, .632
SAQ Alone Online					-0.183	0.061	-.203**	-.304, -.063
SAQ Partnered Online					0.132	0.111	.091	-.085, .350
SAQ Info Online					-0.068	0.078	-.061	-.221, .086
SAQ Alone Offline					0.055	0.102	.034	-.146, .256
SAQ Partnered Offline					-0.101	0.085	-.084	-.268, .065
SAQ Info Offline					0.066	0.097	.044	-.125, .257

Note. * $<.05$, ** $<.01$, *** $<.000$. SAQ = Sexual activities questionnaire

2

3 Discussion

4 This study expands on previous work on online sexual activities and identity
5 development. We found that being open to exploring sexual identity is associated
6 with greater participation in partnered and non-arousal online sexual activities and
7 partnered-arousal offline sexual activities. Additionally we found that openness to
8 exploration, sexual identity commitment, and lower amounts of participation in
9 online solitary-arousal activities all predicted sexual identity synthesis.

10 **Online Sexual Activities**

11 Openness to exploration predicted participation in all three types of online sexual
12 activities, while it only predicted offline partnered-arousal activities. This suggests
13 that people use online sexual materials and activities for exploring sexual identity
14 more than similar offline counterparts. This finding is consistent with previous
15 research (Hillier & Harrison, 2007; Kuper & Mustanski, 2014; Poole & Milligan,
16 2018), as the internet provides a way for people, with access, to experiment and

1 learn about different sexual experiences. For offline sexual activities, exploration
2 was only a significant predictor of partnered activities. This could be due to it being
3 easier for people to explore partnered sexual activities offline than online.
4 Interacting with someone else who may have different sexual interests could lead to
5 more participation in different sexual activities by people who are open to
6 exploration. For solitary-arousal activities, it may be that people do not explore
7 these as much offline due accessibility of online materials. For non-arousal
8 activities, stigma could play a role if someone is uncomfortable asking questions
9 about sexuality or sexual health in person. It may be that people are also unaware of
10 offline resources or are not yet comfortable enough, or certain enough, with their
11 identity to participate in an offline group associated with that identity.

12 Relationship status moderated the relationship between openness to
13 exploration and partnered-arousal online activities, but only in combination with
14 gender. Participants who reported lower scores on openness to exploration differed
15 in the amount of participation in online partnered-arousal activities, with people in a
16 relationship participating more than single people. Participants who had higher
17 scores on openness to exploration also differed in the amount of online partnered-
18 arousal activities, but with single people participating in more partnered-arousal
19 activities. This could be due to people who are in a relationship having an offline
20 outlet to explore sexual activities and to people who are single and more open to
21 exploration having easier access to online than offline sexual partners, or feeling
22 safe exploring partnered activities online (Crowson & Goulding, 2013).

23 The difference between participation in online partnered-arousal activities at
24 different levels of openness to exploration was greatest for non-binary identifying
25 individuals. At the low end of openness to exploration, this group participated in
26 fewer partnered-arousal activities than female and male-identifying individuals and
27 participated in more at higher amounts of openness to exploration. Given the
28 correlational design, we can only speculate as to the reason for this and more
29 research is needed, but it could be related to where someone is in the process of
30 exploring their sexual identity. For people who identify as one of the non-binary
31 identity groups (androgynous, transgender, and genderqueer) and who are not open
32 to exploring sexual identity, engaging with other people in-person sexually may not
33 feel comfortable or safe, resulting in low participation in online partnered sexual

1 activities. It could also be that someone who identifies as one of the non-binary
2 genders has already gone through a process of exploring their identity and are more
3 comfortable expressing it offline.

4 Non-binary identifying participants accessed more online non-arousal
5 activities than male-identifying participants. While gender and sexual orientation
6 are clearly not equivalent, other findings reflect similar patterns where LGBTQ+
7 people access more online sexual health materials than heterosexual identifying
8 people (Charest et al., 2016). That there is no significant difference between female
9 identifying participants and the other gender groups reflects previous findings that
10 there is no gender difference, when comparing females and males, in participation
11 in non-arousal activities (Döring et al., 2017). The range of non-arousal activities
12 includes seeking health information as well as joining a community related to
13 sexuality and to signing up for an online dating app/service. This is a wide range of
14 activities and it could be that this category needs to be split into an
15 information/community type and a dating/flirting type. These are different types of
16 non-arousal activities and it could be that someone accessing sexual health
17 information is not interested in online dating or the reverse. With the category as it
18 stands, it is likely that someone who is exploring their sexual identity and
19 questioning their assigned gender it is also looking at more of the dating/flirting
20 aspects of online non-arousal materials as part of their exploration due to concerns
21 over stigma or lack of offline access compared to someone who is not questioning
22 their gender.

23 **Offline Sexual Activities**

24 For offline sexual activities only partnered-arousal activities had a significant
25 interaction. People who identified as female participated in more partnered-arousal
26 activities at higher levels of openness to exploration than male-identifying
27 participants, while they both participated in similar amounts at lower amounts of
28 openness to exploration. It may be that people who identify as female and who are
29 open to exploring their sexuality are less concerned about stigma around women
30 being sexually adventurous and are therefore more interested in trying more sexual
31 activities. Stigma has been found to play a role in whether or not women participate
32 in sexual activities, such as casual sex (Conley et al., 2013), but more research is
33 needed to see if openness to exploration plays a role in this relationship.

1 Additionally other research has found women use the internet for sexual activities
2 less than other gender groups (Barrada et al., 2019) and it may be that people who
3 identify as female are more comfortable with offline than online partnered sexual
4 activities.

5 **Identity Synthesis**

6 Exploration, commitment, online solitary-arousal activities, and social desirability
7 all predicted sexual identity synthesis. A period of exploration and then
8 commitment to a sexual identity are both considered part of the process of
9 achieving a synthesized sexual identity and these results support these as being
10 related to synthesis. While exploration is considered as a step in Marcia's (1966)
11 identity status model the findings from this study are consistent with Worthington's
12 et al. (2008) findings. Their openness to exploration measure represents a general
13 attitude of being open to exploration, rather than representing someone currently
14 being in a period of exploration. Within the current study there was a significant
15 positive relationship found between openness to exploration and synthesis,
16 suggesting that being open to exploring sexual identity is associated with achieving
17 identity synthesis. It is not clear if how open to exploration someone is changes
18 over time or as their identity becomes more synthesized, or if people are going
19 through a specific exploration phase as theorized by Marcia (1966). Using this
20 measure in future studies to see if the strength of this relationship changes over time
21 or with participation in sexual activities may help add information about the role of
22 exploration in achieving sexual identity synthesis. The significant negative
23 relationship between online solitary-arousal activities and identity synthesis could
24 be attributed to people using online sexual materials as part of exploring sexual
25 identity. Further, that more use of these materials indicates that someone is still
26 exploring their sexual identity and is not yet ready to commit to a sexual identity or
27 achieve identity synthesis.

28 The relationship between social desirability and synthesis may be attributed
29 to people wanting to represent themselves as synthesized, thinking that responding
30 affirmatively to the synthesis related items shows them in a more favorable light.
31 Social desirability was negatively correlated with all three types of online sexual
32 activities, suggesting that people who want to be viewed favorably think that
33 participation in online sexual activities will be viewed negatively. Within this study,

1 it is not possible to distinguish whether or not people with high social desirability
2 either avoid online sexual activities all together or if they are just uncomfortable
3 reporting participation in them.

4 **Limitations**

5 One limitation of this study is not knowing what access participants had to offline
6 sexual resources. When people do not have access to offline community and
7 resources they often go online to find these. It could be that some of the people who
8 participated in more online sexual activities did not have access to offline resources,
9 so rather than going online because they felt more comfortable there, they were
10 online because they had no other choice. Future research should look at the role of
11 access to offline resources in what and how much people participate in online
12 sexual activities.

13 Another limitation of the study was the large number of measures used,
14 which may have reduced the number of completed surveys, particularly for the
15 online sample. Reducing the number of measures or using shorter measures may
16 have increased survey completion, providing more representative results. In
17 particular, this may have helped retain more participants from the online sample as
18 they may have had less incentive to complete the study than the participants
19 recruited from the University research pool.

20 The unequal, and non-representative, sample sizes by gender is another
21 limitation of this study. There were over twice as many female-identifying
22 participants recruited as male-identifying participants, and only 26 participants who
23 identified their gender as either androgynous, transgender, genderqueer, or not sure.
24 As this last group, the non-binary group, were combined into one group it cannot be
25 determined if the findings mask differences between the identities within this
26 grouping. These differences in sample size should be taken into consideration when
27 looking at the results. Future research should try and recruit more gender diverse
28 participants as having a larger sample may have an impact on results, including
29 increasing the power of the analysis.

30 **Conclusion**

31 From these results, it can be suggested that people use online sexual activities when
32 they are exploring their sexual identity. Further, as people commit and synthesize

1 their sexual identities they participate in less online sexual activities, suggesting the
2 online and offline sexual activities fulfil different needs. These findings are
3 important in understanding the role online sexual activities can have in people
4 exploring their sexual identities and how this use differs from offline sexual
5 activities. Also highlighted is the importance of looking at online sexual activities
6 as sub-types, rather than as a monolith. The different sub-types of online sexual
7 activities are used by people for different reasons and have different relationships to
8 sexual identity. This is likely true for other aspects of sexuality. Researchers
9 looking at online sexual activities should use sub-types to get a more accurate idea
10 of their effects and relationships. Future research should also consider potentially
11 splitting the non-arousal sub-type into two categories as there may be differences in
12 people who access sexual health/education and community groups compared to
13 people who use the internet for dating or flirting. Additionally research should look
14 at changes over time in what online and offline sexual activities people are
15 participating in and their sexual identity development status.

1 Chapter 5 Locating the real self online and offline

2 Note: The following chapter has been written up for publication and is currently
3 under revision.

4 Abstract

5 People can access a wide range of sexual materials online and use these to explore
6 and learn about sex and sexualities. Some people feel more comfortable expressing
7 themselves online, developing a sense of being more their 'real' selves' online,
8 suggesting identity development may be influenced by engagement with online
9 sexual activities. This study looked at differences in participation in online and
10 offline sexual activities and behaviors and different sexual identity development
11 statuses. Three hundred and thirty eight Australian residents completed an online
12 survey and were grouped based on where they located their real sexual selves;
13 online (N = 35), offline (N = 201), and in both places (N = 102). Kruskal-Wallis
14 tests were used to compare groups based on the location of the 'real' sexual self on
15 participation in online and offline sexual activities, including solitary, partnered,
16 and non-arousal activities, and sexual behaviors. Groups were also compared on the
17 sexual identity statuses of openness to exploration, commitment, and synthesis.
18 People who located their real sexual selves online participated in more online sexual
19 activities than the other two groups and were more open to exploring sexual
20 identity. People who located their real sexual self offline held more committed and
21 synthesized sexual identities than people who located the sexual self in both places.
22 Effect sizes ranged from small to large. This research adds to the understanding of
23 the role of the internet in peoples' lives and the impact that different online sexual
24 activities are having on how people learn about their sexual selves.

25

26 **Keywords.** Online sexual activities; Online-offline differences; Identity; Real self.

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1 Introduction

2 Developing a sexual identity is an important aspect of overall identity development
3 and is impacted by family and peers, cultural norms and expectations, and through
4 personal experiences and learning (Archer & Grey, 2009). One way people can be
5 exposed to different aspects of sexuality and sexual information is through the
6 internet, which provides access to a wide range of sexual information and materials
7 that mirror offline resources, including solitary-arousal, partnered-arousal, and non-
8 arousal activities (Shaughnessy et al., 2014). It is unclear if accessing these
9 materials and engaging in these activities online or offline relates differently to
10 identity development. There is some research on online identity development, but
11 most of the research related to online identity has focussed on identity expression
12 (Wängqvist & Frisé, 2016), and has looked at how people can feel their most 'real'
13 selves online and are more open about expressing their sexual identity online than
14 offline (McKenna et al., 2001). This can lead to eventually feeling more
15 comfortable expressing these aspects offline, suggesting the internet can be used to
16 develop sexual identity. Part of sexual identity development is exploring identity
17 and trying out different things, such as a variety of different sexual activities, to
18 determine what someone is interested in. The current study examines the different
19 locations of the 'real' sexual self and differences in participation in types of online
20 sexual activities as well as associations between locations of the 'real' self and
21 different statuses of identity development in order to investigate the relationship
22 between online and offline sexual behavior and identity development.

23 Sexual identity includes a range of aspects related to someone's
24 understanding of their sexual self, including sexual orientation, sexual values, and
25 preferred sexual activities and partners (Morgan, 2013; Worthington et al., 2002).
26 One model of sexual identity development (Worthington et al., 2002) suggests
27 people start with an unexplored commitment to a sexual identity based on family
28 and social norms (often heterosexuality). If someone becomes interested in
29 exploring their sexuality they then move into a phase of active exploration, where
30 they intentionally learn more about different aspects of their sexuality. Commitment
31 to an identity is when someone's sexual identity becomes more ingrained, either
32 due to maturation or from having explored their sexuality. Synthesis occurs after
33 commitment and is when sexual identity becomes blended with other aspects of

1 identity. One other possible phase is called diffusion, which is unintentional
2 exploration, where someone is trying different things for the sake of trying them
3 and is unlikely to lead to any self-understanding.

4 Exploration of possible identities is an important part of the development
5 process, as this is when people are considering and learning about what is important
6 to them sexually. Adolescence is when sexual identity development begins (Archer
7 & Grey, 2009) It continues into emerging adulthood as people learn about their own
8 sexual attraction and begin romantic and sexual relationships (Arnett, 2000).

9 Although many people commit to an identity within these periods, sexual identity
10 can be questioned and (re-)explored at any time as people have new experiences,
11 meet new people, and mature (Katz-Wise, 2015). One way people can encounter
12 new ideas and people is on the internet. While sexual materials, sexual identity peer
13 groups, and sexual interactions are available offline, participation in online sexual
14 activities can offer something different to offline experiences. This includes access
15 to a wider range of materials, information, and people than someone may have
16 offline. In addition, the ability to be anonymous can facilitate exploration that might
17 not be possible offline due to reduced concerns over being recognised.

18 There are a number of different ways that people can explore sexuality
19 online. Referred to as online sexual activities, there are three subtypes; solitary-
20 arousal (e.g., creating or accessing explicit materials online), partnered-arousal
21 (e.g., interacting with at least one other person sexually over the internet), and non-
22 arousal (e.g., information seeking or participating in online community related to
23 sexuality) activities (Shaughnessy et al., 2011). Much of the research on the impact
24 of online sexual activities has focussed on solitary-arousal use of pornography
25 (Döring, 2009), including addiction, impact on relationships, and well-being
26 (Barrada et al., 2019; Harkness et al., 2015). Research into partnered-arousal
27 activities is often on dating and use of dating/hook-up apps (Albury & Byron,
28 2016). Research into accessing non-arousal materials has looked at how people use
29 the internet for sex education (Simon & Daneback, 2013), and at accessing non-
30 arousal activities/resources such as LGBTI services that someone may not have
31 access to offline (DeHaan et al., 2013; Flanders et al., 2017). How, and if, these
32 different types of online sexual activities have a role in sexual identity development
33 is less understood as much of the research on online sexual activities focuses on

1 demographics and participation in the different subtypes (Döring et al., 2017;
2 Shaughnessy et al., 2013) and identity research looks at overall online use or
3 specific social networking site use (Wängqvist & Frisé, 2016). There may be
4 differences in how these subtypes of online sexual activities interact with identity.

5 Sex and sexuality can be uncomfortable topics for many people, making the
6 internet an appealing place to explore aspects of sexual identity. Research on online
7 behavior in general has found that some people feel more comfortable expressing
8 their ‘real’ or ‘true’ selves online due to fewer social restraints online (Hu et al.,
9 2017) or because they feel more comfortable online (Amichai-Hamburger et al.,
10 2002), while others may prefer interacting online because the internet offers a
11 ‘social substitute’ for offline interactions (Tosun & Lajunen, 2010). Some people
12 participate in online sexual activities because they lack access to offline support and
13 resources (Hillier & Harrison, 2007; Kuper & Mustanski, 2014), are experiencing
14 stigma about their sexual identity (Bond et al., 2009), or have a less coherent sense
15 of identity (Craig & McInroy, 2014). In each of these circumstances, they are likely
16 to use the internet for identity exploration (Davis, 2012; Wängqvist & Frisé,
17 2016).

18 Being able to express and learn more about different possible parts of the
19 self online can result in more comfort with these aspects and result in offline
20 disclosure (Craig & McInroy, 2014; McKenna & Bargh, 1998; Woodland, 1999).
21 McKenna et al. (2001) suggested that people locate their ‘real’ sexual selves in
22 different places, fully online, fully offline, and in both places. In this instance the
23 ‘real’ sexual self refers to identity-important aspects of the sexual self that someone
24 does not usually express due to feeling unable to (McKenna et al., 2002). McKenna
25 et al. (2001) conducted 36 online interviews and surveyed 104 cybersex chat room
26 participants about the online sexual self, online sexual expression, motivations for
27 engagement, and the role of cybersex in their lives. Safety concerns, expressing
28 sexuality, and increasing sexual knowledge/experience were found to be
29 motivations for engagement. They also found that through interactions and
30 participation in online sexual activities, people reported developing a sense of being
31 their ‘real’ sexual selves online. As these aspects of the self become more
32 important, people begin to feel more comfortable expressing these aspects of the
33 sexual self offline (McKenna et al., 2001). Other researchers have found similar

1 patterns, where people explore and develop their sexual identity online and later
2 express the identity in offline contexts (Crowson & Goulding, 2013). This could
3 indicate that for some people exploration of the sexual self is more comfortable
4 online and that this is where they are doing their sexual identity exploration before
5 committing to and synthesising their identities, resulting in their being comfortable
6 expressing them offline. Greater participation in online sexual activities for people
7 who locate their real sexual self online may, in combination, reflect being open to
8 exploring sexual identity.

9 Using the internet in Australia is the norm, with 87% of Australians being
10 internet users (Australian Bureau of Statistics, 2018), suggesting that life is
11 becoming increasingly digitised, perhaps making distinctions between online and
12 offline selves less useful. Looking into whether or not there are differences in where
13 people are comfortable expressing their sexual selves will provide information
14 about how distinct these spaces are for people in regards to sexuality. Examining
15 differences in sexual identity development and these spaces will provide evidence
16 for whether or not online and offline activities have different relationships to
17 identity development. Comparing what different online and offline sexual activities
18 people engage in and their sexual identity development will provide information
19 about how online and offline spaces are used during identity development and
20 indicating how distinct online and offline selves are.

21 Present study

22 Building on McKenna et al.'s (2001) study we wanted to see if locating the real
23 sexual self in different spaces is related to participation in different online and
24 offline sexual activities. In addition we are interested in the amount of specific
25 sexual behaviours people are participating in. Someone may be reading erotica, but
26 reading about a wide range of sexual behaviours within this category, so asking
27 about what specific behaviours someone is engaging with may provide additional
28 detail about differences in participation in online and offline sexual engagement.
29 We also wanted to see if the location of the real sexual self is related to sexual
30 identity development statuses. Location of the real sexual self was divided into
31 three groups, online, in both spaces, and offline to see if these three groups behave
32 differently. The reason for the inclusion of a middle group is to acknowledge that

1 there may not be a distinction between spaces for some people. We also wanted to
2 look at the relationship between location of the sexual self and identity development
3 phases to see if the location of sexual self differs by development phase. Further
4 investigating how the location of the real self relates to identity development stages
5 will help better understand the role of the internet in identity development. Based on
6 previous research we were particularly interested in whether or not locating the real
7 sexual self online, and more participation in online sexual activities and behaviours,
8 is related to identity exploration and if locating the real sexual self offline, and more
9 participation in offline sexual activities and behaviours, is related to identity
10 commitment and synthesis.

11 The overall aim of the study is to look at how the location of the sexual self
12 relates to participation in different types of online and offline sexual activities,
13 participation in online and offline sexual behaviours, and sexual identity phases. We
14 hypothesised that:

15 Hypothesis One: People who locate their real sexual selves online will
16 report participating in more online than offline sexual activities and behaviors than
17 the other groups.

18 Hypothesis Two: People who locate their real sexual selves offline will
19 report participating in more offline than online sexual activities and behaviors than
20 the other groups.

21 Hypothesis Three: Locating the ‘real self’ online will be positively related to
22 identity exploration.

23 Hypothesis Four: Locating the ‘real self’ offline will be positively related to
24 identity synthesis and commitment.

25 Method

26 **Participants**

27 This study is part of a larger study on participation in online and offline sexual
28 activities. Participants were recruited from online message boards and a university
29 research pool and needed to be 18 years or older and residing in Australia. Data was
30 collected between May and November of 2017. Participants completed an online
31 survey, with a median completion time of 18 minutes. Those recruited online had
32 the option to enter a raffle for a gift card after participating and those from the

1 research pool were given course credit. After removing people who did not
2 complete the survey or did not meet eligibility requirements the final sample size
3 was 338. This study received ethics approval from the University's Human Ethics
4 Research Committee.

5 **Measures**

6 **Demographics.** Demographic information, including age, sexual
7 orientation, gender identity, and relationship status was collected.

8 **Sexual Self Online (McKenna, Green, Smith, 2001).** This is a five-item
9 scale based on the Real Me Scale (McKenna et al., 2002). Three of the items are
10 yes/no questions focussing on whether or not someone engages in online sexual
11 activities they would be uncomfortable engaging in offline, and these were the
12 items used for this study (e.g., Have you ever shared your important sexual
13 fantasies, needs, and feelings on the Internet (in a chat, e-mail, or post) that you feel
14 you cannot express to non-Internet sexual partners?). Participants respond either *yes*
15 (*1*) or *no* (*2*) to each item, with *yes* responses indicating that participants located
16 their sexual self online more than offline. Scores were added together to create a
17 total ranging from 3-6, with lower scores indicating people locate their real sexual
18 selves online, while higher scores indicating the real sexual self is located offline.
19 To obtain absolute locations for where participants located their sexual self
20 (following how McKenna et al. (2002) used the original Real Me Scale), responses
21 were put into three location groups based on their score: online (score of 3), both
22 places (score of 4-5), and offline (score of 6). Reliability for this three item scale
23 was .73.

24 **Online Sexual Activities Questionnaire (OSAQ; Shaughnessy, Byers,
25 Clowater, & Kalinowski, 2013).** The Online Sexual Activities Questionnaire is a
26 48-item measure that assesses experience with three categories of online sexual
27 activities (OSA); solitary-arousal activities (e.g., viewing sexually explicit
28 materials, 16 items), partnered-arousal activities (e.g., engaging in writing and
29 sending sexually explicit materials to someone else, 18 items), and non-arousal
30 activities (e.g., looking for information on sexual activities, 14 items). Items are
31 rated on a 7-point frequency scale ranging from 0 (*never*) to 6 (*more than once a*
32 *day*). Mean scores are calculated as each subscale has a different number of items.

1 Factor structure was not entirely replicated, however reliability of the subscales was
2 good (solitary arousal $\alpha = .90$, partnered arousal $\alpha = .88$, and non-arousal $\alpha = .80$).

3 **Offline Sexual Activities Questionnaire (OFSAQ).** This questionnaire is
4 an altered version of the Online Sexual Activities Questionnaire (Shaughnessy &
5 Byers, 2013) measuring experience with the offline sexual experiences equivalent
6 to the online sexual activities in the previous measure. Solitary, partnered, and non-
7 arousal subscales were all created. Where there was not an equivalent offline
8 activity no new question was designed. This reduced the solitary-arousal and the
9 partnered-arousal subscales by one item, while the non-arousal subscale stayed the
10 same. Confirmatory factor analysis was conducted on this measure to see if it lined
11 up with the original measure. There was good fit for a three-factor structure that
12 accounted for 46% of the variance and matches the structure of the original scale.
13 Internal consistency for the subscales was good (solitary-arousal = .87, partnered-
14 arousal = .87, and non-arousal = .77).

15 **Sexual Behaviors Questionnaire (SBQ).** This 15-item measure assessed
16 participants' online and offline experiences with different specific sexual behaviors.
17 The items in this questionnaire were created using a method employed by Paul
18 (2009) to identify the current most frequently viewed types of online pornography.
19 This method selects the 15 most commonly viewed types of pornography on the top
20 five most visited adult-oriented Internet thumbnail gallery post sites. Using search
21 engine results, the top five websites that host adult-oriented video content
22 (pornography) and the top five websites that host adult-oriented fiction writing
23 (erotica) were identified and used to select the 15 most commonly engaged with
24 online sexual behaviors/activities (Appendix A). This was done in February 2017.
25 Participants were asked to indicate their experience with the activities over the past
26 three months online and offline and their interest in participating in the activities
27 online or offline across six response options. For this study, only the two questions
28 about participation (online and offline) over the past three months were used. Totals
29 for each response were calculated with a range of 0 to 15 for each.

30 **Measure of Sexual Identity Exploration and Commitment (MoSIEC;**
31 **(Worthington et al., 2008).** This is a 22-item questionnaire that measures sexual
32 identity development. The MoSEIC assesses four subscales, three on identity
33 development statuses and one on sexual orientation: commitment (6 items),

1 exploration (8 items), synthesis/integration (5 items), and sexual orientation identity
2 uncertainty (3 items), (Worthington et al., 2008). The three identity development
3 statuses subscales were used in this study: commitment (e.g., “I know what my
4 preferences are for expressing myself sexually”), exploration (e.g., “I am actively
5 experimenting with sexual activities that are new to me”), and synthesis/integration
6 (e.g., “The sexual activities I prefer are compatible with all of the other aspects of
7 my sexuality”). Items are rated on a 6-point Likert scale ranging from 1 (*very*
8 *uncharacteristic of me*) to 6 (*very characteristic of me*) and scores of each subscale
9 are averaged. Higher scores on commitment indicate someone is more committed to
10 their sexual identity, higher scores on exploration indicate greater willingness to
11 explore sexuality, and higher scores on synthesis/integration indicate greater
12 commitment to a cohesive sexual identity. Reliability for the subscales in this study
13 was good with $\alpha = .83$ for commitment, $\alpha = .91$ for exploration, and $\alpha = .93$ for
14 synthesis/integration.

15 Planned analysis

16 To test the first two hypotheses, the initial plan was to run a multivariate analysis of
17 variance (MANOVA). However, this was determined to be a poor fit due to uneven
18 sample sizes in the online, both places, and offline groups and assumptions for this
19 test not being met. Instead Kruskal-Wallis one-way ANOVAs were used (corrected
20 for ties). The online sexual activities questionnaire, the offline sexual activities
21 questionnaire, and the sexual behaviours questionnaire were used for these
22 hypotheses Follow-up tests on significant group differences were done using Mann-
23 Whitney U tests. Kruskal-Wallis one-way ANOVA and follow-up Mann-Whitney
24 U tests were also conducted for the third and fourth hypotheses instead of an
25 ANOVA for the same reason. The measure of sexual identity exploration and
26 commitment was used as the dependent variable for these hypotheses. All tests were
27 conducted using IBM SPSS version 26.

28 Results

29 Demographics are in Table 5.1. Chi-square test of contingencies was used to
30 compare the demographic data from the university sample and the online sample to
31 look at group differences. Due to small numbers for some of the groups (less than 5)
32 some of the groups were combined for the analysis. Age was grouped into 18-29,

1 30-39, and 40-79. Gender was grouped into 'female', 'male', and 'non-binary'.
2 Sexual orientation was grouped into 'mostly heterosexual', 'mostly homosexual',
3 and 'non-binary'. Relationship status was grouped into 'in a relationship' and
4 'single'. Comparisons between location of the real sexual self, age, gender, and
5 sexual orientation met the requirements to run a chi-square test. The two groups
6 were significantly different on where they located their real selves, $\chi^2(2, N = 326) =$
7 $17.58, p < .000$. Both groups had the largest amount of participants locating their
8 real sexual selves offline, however this was greater for the university sample (74.9%
9 compared to 46.7%). They also significantly different on age, $\chi^2(2, N = 335) =$
10 $77.61, p < .000$, with the university sample having 96.0% of the participants being
11 18-29, while in the online sample only 58.0% of participants were 18-29. They were
12 also different on gender, $\chi^2(2, N = 335) = 28.39, p < .000$, where female identifying
13 participants being the most represented from each group, male identifying the
14 second, and non-binary the third, however the online group had a higher percentage
15 of non-binary participants (18.8% compared to 2.2%). Lastly for sexual orientation,
16 $\chi^2(2, N = 335) = 43.78, p < .000$, the university sample had 84.8% of participants
17 identifying as mostly heterosexual compared to the online sample, where 51.8%
18 identified as the same. Both groups had more participants identify as non-binary
19 than mostly heterosexual, with 11.2% in the university sample and 41.1% of the
20 online sample. This helps support the inclusion of the different data collection
21 'locations' as including the online group resulted in inclusion of a more diverse
22 range of participant demographics.

23 Chi-square tests were also run to look at demographic differences for the
24 different online sexual self locations and only gender and sexual orientation met the
25 requirements for comparisons and were significant. For gender, $\chi^2(4, N = 326) =$
26 $18.27, p < .001$, the greatest percentage of female identifying participants located
27 their sexual selves offline (66.2%), male identifying participants mostly located it
28 offline (53.9%), and non-binary participants mostly located it in both places
29 (50.0%). For sexual orientation, $\chi^2(4, N = 326) = 16.95, p < .002$, people who
30 reported being mostly heterosexual located the greatest percentage of their real
31 sexual selves offline (64.6%), mostly homosexual participants located it in both
32 places (41.2%), and non-binary participants located it offline (48.5%), at the highest
33 percentages.

1 Table 5.1 Demographics

Variable	All	Online	Mixed	Offline	%
Age					
18-29	274	25	83	166	81.01
30-39	27	5	5	17	7.99
40-49	17	3	7	7	5.03
50-59	4	-	2	2	1.18
60-69	3	-	1	2	0.89
70-79	1	-	-	1	0.30
Missing	12	2	4	6	3.55
Gender					
Female	220	18	58	144	65.09
Male	92	11	32	49	27.22
Androgynous	5	2	3	-	1.48
Transgender	9	1	6	2	2.66
Genderqueer	10	2	3	5	2.96
Not Sure	2	1	-	1	0.59
Sexual Orientation					
Heterosexual	190	11	45	134	56.21
Mostly Heterosexual	61	6	28	27	18.05
Bisexual	28	6	6	16	8.28
Mostly Homosexual	7	1	3	3	2.07
Homosexual	10	3	4	3	2.30
Asexual	19	1	8	10	5.62
Queer	9	4	3	2	2.66
Pansexual	14	3	5	6	4.14
Relationship Status					
Single	143	16	46	81	42.31
Dating	46	6	18	22	13.61
In a Relationship (Mono)	98	7	24	67	29.00
In a Relationship (Poly)	13	2	6	5	3.85
Married/de facto	36	2	8	26	10.65
Divorced	2	2	-	-	0.59
Total	338	35	102	201	

2

3 **Hypothesis One and Two**

4 Descriptive statistics including means and standard deviations are in Table 5.2.
5 Results of the Kruskal-Wallis test (Table 5.33) indicated that for online sexual
6 activities and behaviors there was a significant difference between real sexual self
7 locations in the amount of solitary-arousal, with a small effect (Cohen's $f = .01$),
8 partnered-arousal, with a small effect (Cohen's $f = .09$), non-arousal, with a small
9 effect (Cohen's $f = .11$) activities, and behaviors, with no effect (Cohen's $f = .00$).

1 For offline sexual activities, there was only a significant difference in the amount of
2 solitary-arousal activities, with a small effect (Cohen's $f = .01$), between the
3 different real sexual self groups. Follow-up Mann-Whitney U tests (Table 5.3) were
4 conducted comparing people who located their real sexual selves online and offline,
5 people who located their real sexual selves online and in both places, and people
6 who located their real sexual selves offline and in both places. Results were
7 assessed using a Bonferroni adjusted p-value of .006 due to the multiple
8 comparisons being made. There was a significant difference between the online,
9 both places, and offline real selves' groups for all three types of online sexual
10 activities and for sexual behaviors. For the differences between the online and
11 offline groups, the online group reported more participation in all activities and
12 behaviors. Effect sizes ranged from medium to large; solitary-arousal ($r = .40$);
13 partnered-arousal ($r = .35$); non-arousal ($r = .37$); behaviors ($r = .35$). For the
14 differences between the online and both places groups the online group reported
15 more participation in all activities and behaviors. The effect sizes were all small;
16 solitary-arousal ($r = .26$) partnered-arousal ($r = .26$); non-arousal ($r = .28$);
17 behaviors ($r = .24$). For the differences between the both places and offline groups
18 the both places group reported more participation in all activities and behaviors.
19 The effect sizes ranged from small to medium; solitary-arousal ($r = .30$); partnered-
20 arousal ($r = .21$); non-arousal ($r = .24$); behaviors ($r = .20$). For offline sexual
21 activities there was no significant difference between any of the groups. The reason
22 for the results of the Kruskal-Wallis test being significant and the Mann-Whitney U
23 tests showing non-significance is due to the Bonferroni adjusted p-value.

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1 Table 5.2 Means and Standard Deviations

Variables	Online		Both Places		Offline	
	M	SD	M	SD	M	SD
Online						
Solitary-Arousal	3.00	1.18	2.37	0.99	1.77	0.82
Partnered-Arousal	1.98	0.96	1.58	0.67	1.30	0.43
Non-Arousal	2.69	1.00	2.22	0.78	1.84	0.68
Behaviours	3.24	4.36	1.16	2.48	0.57	1.69
Offline						
Solitary-Arousal	1.24	0.66	1.11	0.66	1.05	0.49
Partnered-Arousal	1.98	0.92	1.74	0.71	1.76	0.72
Non-Arousal	1.10	0.69	1.34	0.65	1.10	0.57
Behaviours	5.76	3.88	4.64	3.82	5.50	3.65
Exploration	4.67	.81	4.08	1.06	3.79	1.13
Commitment	4.22	1.05	4.25	0.97	4.59	0.90
Synthesis	4.31	1.09	4.38	0.92	4.74	0.89

2

Table 5.3 Results of the Kruskal-Wallis H and Mann-Whitney U between real sexual self locations and online and offline sexual activities and behaviours

Variable	Kruskal-Wallis H			Mann-Whitney U											
	<i>df</i>	H	Sig.	Online vs. Offline				Online vs. Both Places				Offline vs. Both Places			
				U	Z	Mean	Sig	U	Z	Mean	Sig	U	Z	Mean	Sig
Online															
Sol-Arousal	2	53.05	.000	1099.00	-6.05	3.00 v. 1.77	.000	1054.00	-2.99	3.00 v. 2.37	.003	6031.50	-5.15	1.77 v. 2.37	.000
Partnered-Arousal	2	34.84	.000	1367.50	-5.32	1.98 v. 1.30	.000	1052.50	-3.00	1.98 v. 1.58	.003	7119.00	-3.58	1.30 v. 1.58	.000
Non-Arousal	2	40.52	.000	1272.50	-5.55	2.69 v. 1.84	.000	1006.50	-3.24	2.69 v. 2.22	.001	6784.50	-4.05	1.84 v. 2.22	.000
Behaviours	2	31.25	.000	1821.50	-5.31	3.24 v. 0.57	.000	1152.50	-2.75	3.24 v. 1.16	.006	7794.00	-3.41	0.57 v. 1.16	.001
Offline															
Solitary-Arousal	2	6.80	.033	2353.00	-2.56	1.24 v. 1.18	.011	1252.00	-1.99	1.05 v. 1.11	.047	9038.50	-0.79	1.05 v. 1.11	.430
Partnered-Arousal	2	5.68	.058	2416.50	-2.29	1.98 v. 1.32	.022	1212.00	-2.15	1.76 v. 1.74	.032	9263.50	-0.43	1.76 v. 1.74	.670
Non-Arousal	2	0.96	.619	2966.50	-0.73	1.10 v. 1.27	.466	1553.50	-0.25	1.10 v. 1.34	.800	8975.50	-0.75	1.10 v. 1.34	.455
Behaviours	2	3.94	.140	3102.50	-0.33	5.76 v. 5.50	.741	1353.00	-1.42	5.50 v. 4.64	.156	8307.00	-1.84	5.50 v. 4.64	.065

Note. For the Mann-Whitney U tests a Bonferroni adjusted p-value of .006 was used. Online N = 33, Both Places N = 98, Offline N = 195, Total N = 326.

Hypotheses Three and Four

Results of the Kruskal-Wallis test (Table 5.4) indicate that there was a significant difference in mean amounts of openness to exploration, with a medium effect (Cohen's $f = .26$), commitment, with a small to medium effect (Cohen's $f = .18$), and synthesis, with a small to medium effect (Cohen's $f = .21$) between the different real sexual self locations. Follow up Mann-Whitney U tests (Table 5.4) were done to compare the online and offline groups, the online and both places groups, and the offline and both places groups. Results were assessed using a Bonferroni adjusted p-value of .016. Between the online and offline groups there was only a significant difference in the mean amounts of openness to exploration with a medium effect size ($r = .31$). Between the online and both places groups there was only a significant difference in the mean amounts of openness to exploration with a medium effect size ($r = .24$). Between the offline and both places groups there was a significant difference in mean amounts of commitment, with a small effect size ($r = .16$) and synthesis, also with a small effect size ($r = .19$).

Table 5.4 Results of the Kruskal-Wallis H and Mann-Whitney U between real sexual self locations and identity

Variable	Kruskal-Wallis H			Mann-Whitney U											
	<i>df</i>	H	Sig.	Online vs. Offline				Online vs. Both Places				Offline vs. Both Places			
				U	Z	Mean	Sig	U	Z	Mean	Sig	U	Z	Mean	Sig
Exploration	2	20.20	.000	1714.00	-4.29	4.67 v. 3.79	.000	1088.50	-2.80	4.67 v. 4.08	.005	8092.00	-2.14	3.79 v. 4.08	.032
Commitment	2	8.44	.015	2616.50	-1.72	4.21 v. 4.59	.086	1602.50	-.077	4.21 v. 4.25	.939	7736.00	-2.66	4.59 v. 4.25	.008
Synthesis	2	13.32	.001	2445.50	-2.22	4.31 v. 4.74	.026	1602.50	-.077	4.31 v. 4.38	.938	7306.50	-3.32	4.74 v. 4.38	.001

Note. For the Mann-Whitney U tests a Bonferroni adjusted p-value of .016 was used. Online N = 33, Both Places N = 98, Offline N = 195, Total N = 326.

1 Discussion

2 In the 20 years since McKenna et al.'s (2001) research there have been a number of
3 social and technological changes around sexuality. Acceptance of sexual minority
4 identities is increasing in high income countries (Flores & Park, 2018) and there are
5 more and more sexually-related material becoming accessible online. Both online
6 and offline there are more resources available for people to talk about and learn
7 about their sexuality, yet the findings from this study suggest people are still
8 exploring sexuality online. This is consistent with other research finding that people
9 increasingly accessing online sexual materials (Döring et al., 2017). The results in
10 this study indicate that people who locate their real sexual selves online participate
11 in more online sexual activities and are more open to exploring sexual identity than
12 those who do not. Additionally, people who locate their real sexual selves offline
13 have a more committed or synthesised sexual identity and participate in fewer
14 online sexual activities than the other two groups.

15 The finding that online arousal activities are associated with location of the
16 sexual self and not offline arousal activities could be explained by pornography and
17 erotic materials being primarily accessed online (Price et al., 2016). It could be that
18 people are exploring potential sexual interests online through engagement with
19 arousal oriented materials and then when they have become more comfortable with
20 their interests or more interested in participating in them do they engage with them
21 offline. Online non-arousal activities were also associated with location of the
22 sexual self. These can include learning about different identities and orientations,
23 which could be part of sexual identity exploration. Learning about different identity
24 labels or learning about sex and relationships could help people learn about their
25 sexual identities, but it could be that engaging with arousal activities and
26 experiencing arousal and sexual attraction provides the opportunity for insight into
27 how someone thinks about their sexual identity. This could be related to the large
28 number of heterosexual identifying participants in this study. As this group is
29 unlikely to be questioning their sexual identity label, they may be exploring aspects
30 of their sexual identity more related to sex and sexual relationships, which could
31 explain the connection between arousal activities and sexual identity development.

1 People who located their real sexual selves online participated in more
2 online sexual activities and behaviours than either of the other two groups. The
3 offline group participated in the fewest online sexual activities of the three groups.
4 Out of the different categories of activities and behaviors they participated in non-
5 arousal activities the most. Non-arousal activities include dating and information
6 seeking/educational activities and it could be that the different location groups are
7 participating in different types of activities within this category. As more and more
8 people are accessing sexual health and education information online (Mitchell et al.,
9 2014) and using online dating apps (Sumter et al., 2017), it could be that people
10 who are otherwise uncomfortable or uninterested in online arousal activities are
11 comfortable engaging in online non-arousal activities. For offline sexual activities
12 and behaviors there was only a significant difference in participation in offline
13 solitary-arousal activities, however this difference was non-significant when
14 looking at direct comparisons between groups. This difference could be related to
15 sexual identity development statuses, however further investigation is needed into
16 these differences to see how offline solitary-arousal activities are potentially being
17 engaged with as part of development.

18 The three groups differed on their openness to exploration, with the online
19 groups having higher scores on this measure than the offline and both places
20 groups. Locating the real sexual self offline was associated with more sexual
21 identity commitment and synthesis, but only compared to the both places group.
22 These results are in line with previous findings that people explore and learn about
23 sexuality online (Fox & Ralston, 2016; McKenna & Bargh, 1998; McKenna et al.,
24 2001) and become more comfortable with themselves and their ability to express
25 different aspects of the self offline. The both places group does seem to represent a
26 transition between the online and offline locations, with this group's scores on the
27 three identity measurements falling in the middle of the two other groups, further
28 suggesting that people are exploring online before expressing their real self offline.
29 This research only measures one point in time, so does not capture transitions.
30 Future research could look at changes over time in where someone locates the
31 sexual self and changes in identity development to see if this transition occurs.
32 Rather than representing a transition, the differences in scores could be due to what
33 people are exposed to in the different spaces. Being online more is likely to expose

1 people to a wider variety of materials, ideas, and people than offline, which could
2 lead to feeling more open to learning about these things. Conversely, spending less
3 time online may result in less exposure and less challenge to identity.

4 That people who are exploring sexual identity are doing so online, or are
5 doing some of it online, indicates that arousal-based online sexual activities offer
6 something that the offline counterparts do not in relation to sexual identity
7 exploration. This was further supported by the finding that there was no difference
8 between the groups in participation in offline sexual activities. The additional
9 differences in participation in online sexual activities between the groups also
10 supports the idea that locating the sexual self in different places represents different
11 phases of sexual exploration and commitment. Considering the real sexual self
12 locations in this way, rather than as distinct places where someone is ‘truly’
13 themselves, may be more useful in future research.

14 **Limitations**

15 The main limitation of this study was the uneven sample sizes for the three real
16 sexual self location groups. The online group only had 35 participants, while the
17 both places group was larger with 102, and the offline group had 201. Having a
18 more balanced sample would increase the power for this study and reduce possible
19 error, making similarities and differences between the groups more reliable.
20 Specifically seeking participants who located their real sexual selves online would
21 potentially help this imbalance. Nonetheless the findings give insight into
22 differences between these groups and provide support for the idea that people use
23 online sexual activities differently at different stages of sexual identity
24 development. Further research with larger groups is needed to replicate these
25 findings and better understand the relationship between online sexual activities and
26 sexual identity development.

27 From this study it is not possible to tell if people who are open to exploring
28 sexuality are choosing to participate in more online sexual activities or if accessing
29 online sexual activities is leading people to be more open to exploring sexual
30 identity. It is possible that being exposed to more sexual content online makes
31 people more open to thinking about/exploring sexuality. Looking at changes over
32 time for participation in online sexual activities and sexual identity development
33 may enhance our understanding of the causal direction of the relationship. This

1 research may be particularly apt with adolescent samples, as this group is often
2 starting sexual identity development and likely to be starting to look at sexually
3 explicit materials online.

4 **Conclusion**

5 Our findings indicate that where someone locates their real sexual self is related to
6 their participation in online sexual activities and sexual identity development.
7 Accessing arousal-based online sexual activities, but not offline sexual activities is
8 associated with sexual identity exploration, indicating that sexual activities in these
9 two places are accessed for different reasons. These findings are important in
10 understanding how different types of online sexual activities are being used by
11 people and their impact. Future research should look at changes in the types of
12 online sexual activities people participate in in relation to their sexual identity
13 development to better understand the impact of different types of online sexual
14 activities on identity. Looking at reasons people access online sexual activities
15 compared to offline activities will also help to understand how people view
16 differences in these activities.

1 Chapter 6 Discussion

2 The aim of this thesis was to better understand whether there is a connection
3 between accessing sexual activities online and sexual identity development. To
4 achieve this aim two studies were conducted. The first was to clarify the current
5 understandings of the definition of sexual identity and potential differences between
6 this term and sexual orientation. Through interviews with people in emerging and
7 early adulthood and human sexuality professionals, a definition was developed that
8 distinguished sexual identity from sexual orientation, and highlighted the
9 uniqueness of sexual identity for each individual. Using the developed definition the
10 second study was conducted to find whether there were differences between
11 participation in online and offline sexual activities, and the links between
12 participation and identity development. Through this study, where people located
13 their 'real' sexual self, and links to sexual identity statuses were also examined.
14 These findings indicated that exploring sexual identity is related to online sexual
15 activities, and holding a more committed or synthesised identity is related to offline
16 sexual activities. Overall, the findings from the studies in this thesis suggest that
17 participation in online sexual activities is associated with exploring sexual identity.

18 Sexual identity definition

19 The definition of sexual identity developed in the first study guided the selection of
20 the measures in the second two studies. This definition was broad, acknowledging
21 that people will have different aspects of sexuality that are important to them and
22 how they think about themselves, while also recognising the importance of culture
23 and environment in how people are able to develop a sexual identity. The definition
24 fit with other descriptions of sexual identity that consider the term to encompass
25 more aspects of sexuality than sexual orientation alone (Worthington et al., 2002)
26 and can include behaviour, attraction, and values. However this definition is based
27 on primarily Australian thoughts on sexual identity and it may not be appropriate
28 for other groups or in other cultures. Australia is a majority white, Western, cis-
29 gender society, which is going to have an impact on how people think, regardless of
30 their own cultural background. It may be that using 'sexual identity' is not the best
31 term in other places, and researchers need to take this into consideration when
32 designing research. Testing the applicability and appropriateness of terms and

1 definitions before use would both make sure the most relevant ones are selected and
2 also assess the usefulness of the term/definition in other cultures. The finding that
3 people consider sexual identity to be broader than sexual orientation matches other
4 research indicating that people are increasingly less focused on sexual orientation
5 (Galupo et al., 2016). It also highlights the importance of considering these different
6 aspects when looking at how people develop their sexual identity and how they
7 describe it. Using a broader definition within this research ensured the whole of
8 sexual identity was being investigated, and that people who were exploring and
9 developing aspects of sexual identity other than sexual orientation would be
10 included in the subsequent studies.

11 Sexual identity development

12 Key to identity development is the ability to explore and learn about different ways
13 of identifying. The findings in this thesis suggest that the internet and online sexual
14 activities can be used as a way for people to explore their sexual identity and can
15 work like exploration in offline environments. Study 2 participants who were open
16 to exploring sexual identity reported accessing online sexual activities more than
17 offline sexual activities, and this may be part of identity exploration. Feeling more
18 comfortable expressing the sexual self online (locating the 'real' sexual self online)
19 was also associated with more participation in online sexual activities and openness
20 to exploration. People could be feeling more their 'real' selves because this is where
21 they are exploring. This finding is similar to other study findings that people
22 sometimes feel safer or more comfortable expressing sexuality online than offline
23 (Craig & McInroy, 2014; Fox & Ralston, 2016; Giano, 2019; McKenna et al.,
24 2001). However, more research is needed on connections between being open to
25 exploring sexuality and why people choose to access online sexual activities.
26 Additionally, the positive association between openness to exploration and online
27 sexual activities, but not offline sexual activities, suggests online sexual activities
28 offer something different to offline sexual activities.

29 There was not a similar connection between openness to exploration and
30 offline sexual activities, with the exception of partnered-arousal activities. For
31 offline sexual activities, there was a connection to sexual identity commitment and
32 synthesis, as well as finding the real sexual self offline. This difference suggests

1 that people may be using online sexual activities to explore sexual identity and then
2 expressing it offline when they are more comfortable with it. Other studies looking
3 at sexual identity development through participation in online chat groups (Bargh et
4 al., 2002; McKenna & Bargh, 1998; McKenna et al., 2001), and with development
5 of sexual orientation through online forums (McInroy & Craig, 2018, 2019) support
6 this pattern. From this it seems that people who explore their sexual identity online
7 may feel more comfortable with sexual expression online, and that this use and
8 comfort develops the overall sexual self. Sexuality is a sensitive topic that people
9 can have difficulty discussing and expressing (Noland, 2012; Poole et al., 2004),
10 having the barrier of a screen and the benefit of anonymity when learning more
11 about sexuality and sexual identity could be part of the attraction to online use. This
12 could explain why online sexual activities were linked to openness to exploration,
13 and offline sexual activities were linked to commitment and synthesis. Rather than
14 there being separate online and offline selves, there is one overall self that is
15 influenced by both online and offline experiences. With the wide range of sexual
16 activities available online, the increasing ease of internet access, and with people
17 spending more time online in general, it could be that people start this exploration
18 online and then move it offline. This suggests that for some people, some aspects of
19 sexual identity are primarily explored online. Further research examining both
20 location and the different aspects of sexual identity that are being explored will add
21 to the understanding of differences in how people are using and processing online
22 and offline sexual activities and their relationships to sexual identity development.

23 Recent research into online sexual identity development has focused on
24 internet use as a way for people with sexual minority identities to safely explore and
25 learn about their identities and find similar others (Austin et al., 2020; Craig &
26 McInroy, 2014). The research conducted as part of this thesis had a majority of
27 participants who identified as heterosexual and with a binary gender identity
28 (female/male). The finding that Australian people with more culturally normative
29 sexual orientation identities go through a process of sexual identity development is
30 in line with other research that heterosexual identity development occurs and is an
31 important part of identity development for this group (Eliason, 1995; Morgan, 2012;
32 Worthington et al., 2002). It further supports using a broader definition of sexual
33 identity when looking at identity development. Heterosexual people are likely to be

1 exploring aspects other than orientation and people with minority sexual
2 orientations are likely exploring orientation in addition to other aspects of sexual
3 identity. This highlights a need to look at how people develop a wider range of
4 sexual identity components, as these may be explored and developed differently
5 than sexual orientation. These are going to be different for every group, however, as
6 found in the first study, partner characteristics and sexual behaviour could be
7 starting places for learning about different components. These different aspects are
8 also important to people and how they identify, understanding what they are and
9 how they are developed is useful for supporting development of different
10 components.

11 **Identity outcomes**

12 The findings from these studies suggest that online sexual activities in general can
13 be part of the sexual identity development process and may give people access to
14 ideas and experiences they would not otherwise have. This builds on previous
15 research that has found connections between accessing online sexual activities and
16 both sexual behaviour (Smith et al., 2016) and attitudes towards sexual partners
17 (Albright, 2008), and adds further evidence to the influence of online sexual
18 activities on offline expressions of sexuality. The findings from Study 2 suggest that
19 using online sexual activities is a way for people to explore sexual identity, and that
20 offline sexual activities are a more common way for people to express sexual
21 identity when someone has committed to an identity and reached identity synthesis.
22 This does not suggest that exploration is only done through online sexual activities,
23 but that they offer a way for people to explore. This access may mean that people
24 have access to activities and resources that give them the opportunity to explore that
25 they may not have had otherwise. Comparing differences between participation in
26 online and offline sexual activities for people with different levels of internet access
27 may indicate how much having internet access influences sexual identity
28 exploration and development.

29 **Different online sexual activities**

30 Looking into the relationship between different types of online sexual activities and
31 sexual identity development is one novel aspect of this thesis. Other research has
32 looked at chat rooms (Adam et al., 2011; Austin et al., 2020; McInroy & Craig,

1 2019; Subrahmanyam et al., 2006) and potential behavioural outcomes from
2 engaging with online sexual activities, primarily pornography (Harkness et al.,
3 2015; Lim et al., 2016). Additionally, researchers have examined demographics and
4 outcomes from use of different categories of online sexual activities (Barrada et al.,
5 2019; Shaughnessy et al., 2013). Looking at different categories of online sexual
6 activities provides additional information about why people engage in these
7 different activities and demonstrates that different aspects of identity are developed
8 through different online sexual activities.

9 Including a wide range of types of online sexual activities and materials in
10 this thesis is one of the strengths. Asking about a wide range of activities and
11 materials meant that people with diverse interests were included. Continuing to ask
12 about a wide range of materials in future research will help get an idea of what
13 people are accessing online. What is available online and how it can be accessed
14 continues to change and new online activities need to be taken into account. Since
15 this start of this thesis one website, OnlyFans, has been developed and become a
16 more popular way for people to access online sexual materials. OnlyFans is a
17 subscription service where people pay to access content from online creators,
18 including sexually explicit material (van der Nagel, 2021). Paying for sexually
19 explicit materials online was asked about in the questionnaires, however this service
20 is different than buying a pornography video or pictures online. People are buying
21 access to images and videos from specific creators/performers and it could be that
22 this is interacted with differently than traditional paid pornography services. Staying
23 aware of new types of online sexual activities will ensure research is addressing the
24 materials people are actually using.

25 Demographic factors also played a role in who participated in online sexual
26 activities. People who identified across the gender and sexual orientation spectrum
27 participated in all three types of online sexual activities. Previous research has
28 found people who identify as male participate in more online sexual activities than
29 people who identify as female (Ballester-Arnal et al., 2016; Cooper et al., 2002;
30 Shaughnessy et al., 2011), and this was consistent with what was found in these
31 studies. Relationship status played a role in participation in online sexual activities,
32 and looking more into how relationship status and sexual identity development

1 interact may add to the understanding of why people engage in these behaviours,
2 and when they are positive and negative experiences.

3 Including sexual identity in more research on online sexual activities could
4 add to the understanding of participation in these activities, and the implications of
5 this are addressed below.

6 Implications

7 Findings from this research have methodological, theoretical and practical
8 implications. Methodological implications arise from the effective use of online
9 research methods for investigation of a sensitive topic. Theoretical implications
10 demonstrate where this research adds to existing findings on online sexual activities
11 and sexual identity. The practical implications involve the use of these findings to
12 promote sexual identity development and the importance of sexuality education.
13 Overall, the findings from this thesis demonstrate the importance of thinking of
14 sexual identity broadly and that incorporating this broader understanding into
15 research on online sexual activities is important for understanding the ways in
16 which internet use is connected to how people think about their sexual identities.

17 **Methodological implications.** Using an online audio chat program, in this
18 case Skype, for conducting research into a sensitive topic is a novel methodological
19 component of this research. Online audio communication programs have been
20 successfully used in previous research (Oates, 2015) and sensitive topics research
21 has been conducted online (Bouchard, 2016). Conducting interviews over audio-
22 only voice chat provided a way for people to participate in research into sexuality
23 ‘in person’, while allowing them a comfortable space in which to participate. This
24 has implications for other studies into sensitive topics where participants may be at
25 a distance from the researcher or do not feel comfortable meeting face to face. In
26 addition, finding this method to be effective for sensitive topics research is timely as
27 travel and face-to-face interactions are currently limited by COVID-19 (Lawrence,
28 2020). Having additional options for how to conduct research and reach a wide
29 range of participants is particularly important in order for research to continue
30 during this time. With greater use of online chat programs there is more information
31 about challenges and security risks with this technology, and researchers need to
32 take these into consideration when selecting chat programs to use for research.

1 **Theoretical implications.** The updated definition of sexual identity reflects how
2 people are using and thinking about sexual identity in daily life, as well as in a
3 range of professional applications. The findings also make clear that sexual identity
4 and sexual orientation are different, despite the terms often being used to describe
5 the same thing. This updated definition aligns with research findings that sexual
6 orientation is not always the defining feature of someone's sexual identity (Galupo
7 et al., 2016; van Anders, 2015). Researchers should consider a wider range of
8 sexual identity components than just sexual orientation when asking people about
9 how they think about their sexual selves. Although this might be the most culturally
10 salient aspect of sexual identity for most people, it may not actually be the most
11 important part. Investigating what other aspects are important is a research priority.
12 Further research into how people are learning, thinking, exploring, and identifying
13 other aspects of their sexual identity is also important to better understand how
14 sexual identity is developed.

15 Using the more expansive definition within research on sexual identity
16 development and participation in online sexual activities is one novel aspect of this
17 research. Previous research has looked at the relationship between online sexual
18 activities and sexual orientation and gender identity development (Austin et al.,
19 2020), but not other aspects of sexual identity. The findings in this thesis
20 demonstrate that sexual identity exploration and development are related to
21 participation in online sexual activities, even when not focusing on sexual
22 orientation specifically. Due to the wide range of sexual identity components,
23 someone can learn about and explore online, future research should continue to look
24 at different components of sexual identity and how these are developed and
25 explored through different types of online sexual activities.

26 **Practical implications.** Using a broad definition of sexual identity and finding
27 associations between online sexual activity and sexual identity development
28 provides evidence that sexual identity development is not specific to sexual
29 minority identities. Most of the participants in the second study identified as
30 heterosexual and cis-gender, and while it is not known if they went through a
31 process of exploring and committing to either of these, they did report being in
32 different sexual identity statuses suggesting that some aspects of their sexual
33 identity were, or had, been developed. This development is linked, to different

1 aspects of wellbeing and mental health (Hucker et al., 2010; Johns et al., 2013;
2 Muise et al., 2010; Waterman, 2007), indicating that it is an important process.
3 People are most likely to go through this process when some aspect of their identity
4 is ‘challenged’ or outside of the norm (Cass, 1979; Fassinger & Miller, 1997).
5 People with a heterosexual orientation are less likely to develop an identity related
6 to their heterosexuality unless this identity is brought to their attention
7 (Worthington & Mohr, 2002). The findings from the first study in this project
8 support this as well, with people who identified as heterosexual having thought less
9 about sexual identity prior to the interviews. Practically, this information suggests
10 that sexuality education and information about sexual identity should include
11 discussing components of sexual identity beyond sexual orientation. This is
12 important to support development of sexual wellbeing by bringing different aspects
13 of sexual identity to people’s attention. Future research into sexual identity
14 development should look at what specific aspects of sexual identity people with a
15 heterosexual orientation are exploring, as they may not explore their heterosexual
16 identity. In addition, looking at what motivates people to explore heterosexual
17 identity would add to the understanding of how this aspect of sexual identity is
18 developed. In Study 2 participants at different statuses reported participation in both
19 online and offline spaces, and in the third study participants’ attitudes to online
20 sexual activities were mostly neutral to positive. Together these suggest that
21 accessing online sexual activities is a common occurrence that, on average, people
22 do not have strong feelings about, which is consistent with other research into
23 attitudes towards specific subtypes of online sexual activities (Byers &
24 Shaughnessy, 2014). As online sexual activities become increasingly more
25 acceptable and accessible it is important that they are addressed in sexuality
26 education. This should include addressing both information about pornography, as
27 well as addressing what people might be learning from engaging with pornography
28 (Albury, 2014) and how they are thinking about and processing what they have
29 watched (Goldstein, 2020).

30 Limitations

31 One of the limitations of this body of research is that the sample across all studies
32 primarily identified as heterosexual and within the gender binary of female/male.

1 Having a more even sample would have given more power to comparisons made
2 between these different groups, as well as being able to better demonstrate any ways
3 in which they develop sexual identity similarly. Increased understanding of the
4 similarities and differences would better show the role of online sexual activities in
5 the development of these groups and could guide suggestions for how to talk to
6 people about different online sexual activities.

7 Another limitation within this research is not knowing what aspects of
8 sexual identity someone is open to exploring. Sexual identity was measured
9 broadly, so it is unclear what or how many aspects of sexual identity someone is
10 actively exploring. Better understanding of how people are thinking about the
11 components of their sexual identity, and what aspects they are learning about,
12 would provide more detail about the influence of online sexual activities on sexual
13 identity.

14 All measures used in this study were self-report measures. There is no way
15 to verify if participants are responding honestly (or remembering correctly), leading
16 to people potentially under or over-reporting behavior. The inclusion of the social
17 desirability measure (Hays et al., 1989) was intended as a check on people being
18 uncomfortable responding to sexually related items. Despite this it cannot be known
19 if people responded accurately. A few of the measures were adapted for the studies
20 in this thesis. The only checks on reliability and validity of these adapted measures
21 were done after data collection, rather than in a pilot study beforehand. Despite this,
22 there was good reliability and validity for these measures, suggesting they were
23 appropriate for use in this thesis. Single-item measures were also used in this
24 research both to reduce participant fatigue and where an appropriate larger scale
25 could not be found. Multi-item measures are more comprehensive, however single-
26 item measures can be effective for simple, single factor constructs (Loo, 2002).

27 Finally, the studies in this thesis only take place at one point in time and do
28 not show the relationship between participation in online sexual activities and
29 changes to sexual identity. Additionally, no causal conclusions can be drawn,
30 restricting the ability to see the directionality of the relationships. Future research
31 using longitudinal research should aim to look at causal relationships between
32 online sexual activities and sexual identity development to understand the effect of

1 these materials on sexual identity. This will help expand understanding of how
2 people are using the internet and how this use is affecting them.

3 Finally, data was collected using convenience sampling of university
4 students, people who participate in online forums. All of these participants lived in
5 Australia, and most were younger and well-educated. This is a small percent of the
6 Australian population (only 35% hold a bachelor's degree or above (Australian
7 Bureau of Statistics, 2020)), which limits the generalisability of this study. Having
8 more information about the work and education background of all participants
9 would provide more information about how representative the samples in this thesis
10 are. Additionally, these participants are likely to have more interest in online sexual
11 activities or sexuality in general as they are choosing to participate, likely out of
12 interest, which could skew the results by having people who engage in more online
13 sexual activity use than would occur in a random sample (Strassberg & Lowe,
14 1995). Previous research comparing results between a random sample and a
15 convenience sample in a study on online sexual activities found the two groups to
16 be more similar than different (Cooper et al., 2001). This supports the use of
17 convenience sampling in this research and suggests that these findings may be
18 generalisable.

19 Conclusion

20 How people think about sexual identity is individualised and nuanced. How sexual
21 identity develops is going to differ as well. The internet is an increasingly accessible
22 way for people to explore and express their sexual identity through participation in
23 a range of activities. Through participation, people can learn more about their
24 sexual selves and gain a better understanding of who they are. Although this is not
25 how everyone develops their sexual identity, increasing internet access and
26 acceptability of participation in online sexual activities suggests that more
27 participation in these activities is going to occur, and will likely have an effect on
28 more people. The finding that online sexual activities and sexual identity have a
29 relationship suggests that this factor should be included in future research into
30 online sexual activities.

31
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Appendices

Appendix A

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Ethical Considerations When Using Online Research Methods to Study Sensitive Topics

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Conducting sensitive topics research online can allow researchers access to a wider range of participants with “sensitive topics” experience; however, additional ethical considerations need to be considered when conducting this research. Online research can either involve active or passive data collection, with each requiring extra thought around consent, anonymity, confidentiality, and data security. Suggestions for how researchers should begin thinking about ethical issues in online research around a sensitive topic are given.

What is the significance of this article for the general public?

This commentary offers an introduction to the ethical considerations researchers should make when designing online research into sensitive topics with specific suggestions for both passive and active data collection methods.

Keywords: sensitive topics, online research, process ethics, procedural ethics, research ethics

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Sensitive research topics are those that may cause emotional or physical harm and/or psychological distress to participants or researchers involved in a study (Elmir, Schmied, Jackson, & Wilkes, 2011; Lee, 1993). Both participants and researchers report that it can be difficult to participate in sensitive topics research. Participants are sometimes uncomfortable discussing sensitive topics and fear being judged (Bourne & Robson, 2015), while researchers can experience vicarious traumatization (Sikes & Hall, 2020) and difficulties in processing and appropriately responding to emotional stories (Dickson-Swift, James, Kippen, & Liamputtong, 2009; Hanna, 2019), maintaining professional boundaries and ending relationships with participants (Fahie, 2014; Watson, 2009). Despite

these challenges, a systematic review of the literature indicates that overall participants in sensitive topics research have positive experiences and even where they do experience distress, they feel it is still worth doing (Alexander, Pillay, & Smith, 2018). However, when conducting research on sensitive topics it is important for psychological researchers to be aware of the risks and have plans to help mitigate them. In this article we outline ethical considerations when using online research methods to study sensitive topics in order to minimize risk.

Using the Internet for Data Collection on Sensitive Topics

The Internet provides access to large amounts of people without being restricted by location and is increasingly being used to both access research participants and conduct research. People with specific interests and experiences “gather” on different websites and platforms online, making it easier for researchers to access populations of interest, including for research on sensitive topics.

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Both qualitative and quantitative research can be conducted online, and may involve active (researcher generated data) or passive (using existing unsolicited data) data collection. Active qualitative research can be conducted through online interviews and focus groups, including video, audio, and text discussions, while active quantitative research can be conducted through online questionnaires. These methods yield similar response rates, results, and data quality to offline methods (Joinson, 2001; Loomis & Paterson, 2018; Sturges & Hanrahan, 2004). Outside of directly engaging with participants, researchers also have access to existing data from web forums, blogs, and social media posts, enabling passive data collection.

Online data collection holds several advantages for conducting research on sensitive topics. First, using online technologies for active data collection provides the potential for participants to remain anonymous, even in interviews. Using forums, e-mail, or audio/video chat programs participants can create unidentifiable user names or e-mail addresses to correspond with the researcher (Sipes, Roberts, & Mullan, 2019). Second, conducting active research on sensitive topics online can also make it easier for participants to leave a study if they feel too uncomfortable to proceed, through simply logging out. Both participants and researchers can participate in the research from safe locations, reducing the risk of physical harm. Third, the use of passive data collection online has the potential to be unobtrusive, avoid retraumatizing participants and provide a rich source of data (Burlles & Bally, 2018).

In selecting an online data collection method for research on sensitive topics, whether it be active or passive, ethical researchers need to balance the potential benefits of the research against potential harm. Prior to commencing the research, this involves *procedural* ethics (i.e. identifying potential risks and benefits and obtaining ethical approval from an Institutional Review Board or Human Research Ethics Committee). This needs to be followed by *process* ethics (i.e. being sensitive to, and responding to, ethical issues as they arise during the course of conducting research; see Roberts, 2015).

Ethical Considerations for Active Online Data Collection

Active online data collection on sensitive topics typically involves recruiting participants through online communities. While many of these communities may be publicly accessible and/or easy to join, it is important for researchers to make sure they familiarize themselves with community norms or discuss their research with website administrators before approaching participants or advertising their studies. As part of procedural ethics, an assessment needs to be made regarding where the community sits on the public-private dimension and the potential impact of the research on both individual research participants and their community. Careful consideration of the potential benefits of the research against potential harm is required where the proposed research involves the use of deception or deceptive identities (Roberts, 2015).

We take the stance that institutional ethics approval (procedural ethics) should be required for all active online data collection for psychological research. Potential research participants need to provide informed consent before participating in the research, and researchers have a responsibility to attend to further ethical issues that may arise during the conduct of the research as part of process ethics. Researchers conducting interviews online will be able to monitor for psychological distress in participants resulting from participating in the research, and a follow-up check-in e-mail (developed as part of procedural ethics) can be used for the same purpose when conducting surveys on sensitive topics (Smith, Thew, & Graham, 2018).

In addition to protecting research participants, it is important to protect the researchers. Hanna (2019) highlights the emotional labor involved in conducting research on sensitive topics online, noting that online research can be highly emotive and require empathy and emotional investment. Possible self-care strategies include reflexivity, supervisor/mentor support, and counseling (Hanna, 2019). As part of procedural ethics, researchers can prepare guidelines on how to respond to potentially distressing disclosures and identify services to support both the participants and themselves if additional support is needed (Sipes et al., 2019).

Specific research profiles can be set up and closed upon completion of the study to prevent blurring of boundaries between research and personal profiles (Hennell, Limmer, & Piacentini, 2019).

Ethical Considerations for Passive Online Data Collection

Passive online data collection typically involves the "scraping" and use of existing data from online settings that was never intended for research purposes. A key consideration is whether the originators of such data should be treated as authors or research participants (Roberts, 2015) and therefore whether institutional ethics approval is required. Burles and Bally (2018) argue that obtaining informed consent for use of existing online data (and hence treating the originators of the data as research participants) is especially important when it is on a sensitive topic, due to the increased vulnerability of the people involved, but also notes the needs for this to be weighed against potential effects on the functioning of the community.

Obtaining consent for passive online data collection studies is challenging due to the large sample sizes typically involved (Norval & Henderson, 2020) and difficulty in tracking down respondents. Researchers are already investigating the feasibility of automated dynamic consent procedures to expedite this process (Norval & Henderson, 2020), an option that requires careful ethical consideration. These procedures use algorithms to assess potential participants' past behavior, such as how publicly they share posts on social media, to predict if they would consent to their data being used in research without needing to directly ask them. Even where consent is sought from key participants, if data collection is ongoing, the potential for involving others who have not consented exists (e.g., where others comment on an original participant's posts; Hennell et al., 2019) and as part of procedural ethics procedures will need to be developed for dealing with this.

When writing up findings from passive data collection, a key consideration is protecting the privacy of research participants and their online communities. The risk of participant identification is heightened when quoting directly, as the potential exists for readers to conduct online searches to find the original source and reiden-

tify data (Narayanan, Huey, & Felten, 2016). For example, Ayers, Caputi, Nebeker, and Dredze (2018) reported that in the majority of reviewed papers that include verbatim tweets from Twitter, reverse identification of the original poster was possible. Reverse identification is of particular concern when community members only learn they have been the subject of research after the completion of the research, and may negatively impact on the future functioning of the community (Roberts, 2015). Ayers and colleagues (2018) make a series of recommendations for ensuring this does not occur, including authors presenting aggregated findings only, editors refusing to publish where reverse identification is possible, and ethics committees attending to privacy issues.

Other risks requiring ethical consideration apply to both active and passive online data collection. As part of procedural ethics, researchers need to develop a plan for dealing with psychological distress and clinical issues that might be encountered (e.g., suicidal intentions in social media posts; Young & Garrett, 2018). Participants need to be advised of the limits to confidentiality when there is a likelihood of serious harm to self or others (Hennell et al., 2019). Researchers also need to ensure the security of the data collected and learn how, and what, is being transmitted and stored, making sure that the methods are secure and only accessible to the researchers (Nosek, Banaji, & Greenwald, 2002). Information that is not part of the main research aim, such as IP addresses, can be collected as part of the data gathering process (e.g., through survey programs or data mining) and researchers need to be aware of how this additional information is stored and how they want to handle it to avoid breaching participants' confidentiality (Perez Vallejos et al., 2019). Whether data collection is active or passive, ethical consideration of unexpected issues that arise will be required as part of process ethics.

Conclusion

This commentary has outlined some of the key ethical considerations when conducting research online on sensitive topics. The underlining premise is the need for context specific ethical considerations that comply with disciplinary research ethics requirements. We have

highlighted the importance of both procedural and process ethics, arguing that ethical considerations do not cease once ethics approval is granted. Ongoing technological developments mean that variations on the issues outlined are likely to arise over time. We encourage researchers to actively engage in ethical considerations, drawing on disciplinary ethical documents, the ethical guidelines from the Association of Internet Researchers (franzke, Bechmann, Zimmer, Ess, & Aol Researchers, 2020), and discussion with ethical review committees.

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Appendix B



Voice-only Skype for use in researching sensitive topics: a research note

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Voice-only Skype for use in researching sensitive topics: a research note

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ABSTRACT



This research note adds to a growing body of literature supporting Skype as an effective method for conducting interviews by describing its use in research on a sensitive topic in psychology. Considerations before beginning research and the advantages and disadvantages of using Skype in sensitive topics research are discussed. Drawing on our own research using voice-only Skype for conducting research into sexual identity, we conclude that Skype can be an effective method for getting detailed information from participants and should be considered as a useful tool in conducting research into sensitive topics. Key steps for setting up Skype for research on sensitive topics are included in a checklist.

KEYWORDS

Skype; sensitive topics;
 internet interviews;
 qualitative interviews;
 checklist

Introduction

Researching sensitive topics can be difficult, where getting participants to honestly discuss topics they may find distressing or uncomfortable is vital to the integrity of the results. Sensitive topics are considered those that may cause physical harm or emotional or psychological distress to the participant or researcher (Lee 1993; Elmir et al. 2011). Risk of physical harm can come from researching in violent places or with violent groups, while emotional distress often comes from discussing topics that are private or emotionally charged that someone may not be accustomed to talking about (Lee & Renzetti 1990). For example, in a study on experiences of women who had babies removed from their care immediately after birth, Marsh et al. (2017) described the importance of building trust to recruit participants and encourage discussion on the topic as these women had often experienced discrimination in other settings and were sceptical of why they were being researched. Participants were reluctant to participate and discuss these thoughts and feelings because they were concerned about being judged and had a distrust of authority figures. Other researchers have reported similar issues, finding it difficult to get participants to be comfortable discussing sensitive issues (Rimando et al. 2015), reporting

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participants feared being judged (Bourne & Robson 2015) or reporting the emotional intensity participants may experience in discussing sensitive issues, to the extent that they may withdraw from the research (Wolgemuth et al. 2015). While researching sensitive topics requires special consideration at each stage of the research process (Renzetti & Lee 1993), our focus in this research note is on using voice-only Skype as a media for conducting interviews on sensitive topics.

Because psychology often deals with sensitive topics, it is important researchers in this area be aware of ways to create a suitable environment for interviews. Building rapport, being aware of signs of distress, and conducting interviews in a safe and comfortable environment can all work toward this aim (Dickson-Swift et al. 2007; Elmir et al. 2011; Bouchard 2016a). Researchers should also be aware of the participants' tone of voice, the words they choose, and their body language because these signs can help to indicate how participants are responding to the interview (Seitz 2016; Holt 2010). Face-to-face interviews provide the researcher with immediate verbal and nonverbal feedback. If distress is noted, the researcher responds appropriately, in the form of breaks, comfort, or termination of the interview (Corbin & Morse 2003). Conducting the interview in a space in which both the participant and researcher are comfortable can make this easier to manage (Dickson-Swift et al. 2008). However, face-to-face interviews typically require either the participant, the researcher, or both to meet in an unfamiliar place, which can add a level of discomfort and incur additional time and cost commitments in the form of travel. Thus, alternative interview styles need to be considered.

Face-to-face interviews may also be uncomfortable when discussing sensitive topics (Sturges & Hanrahan 2004). Some participants may find it easier to discuss uncomfortable or intimate topics if there is physical distance from the researcher. Using technology can provide participants this distance while still maintaining detailed data collection equivalent to face-to-face interviews (Joinson 2001; Corkrey & Parkinson 2002; Sturges & Hanrahan 2004; Adams-Hutcheson & Longhurst 2017). Sturges and Hanrahan reported no substantial difference in the content or depth of responses when comparing data from telephone and face-to-face interviews. Joinson found participants who engaged in conversation using computer-mediated communication, where they were visually anonymous, disclosed more information about themselves than nonanonymous visible participants. Both telephones and computers provide participants with additional levels of privacy and anonymity while not compromising the quality of the data collected (Chanakira et al. 2014; Oates 2015). While telephone interviews do require the participants to share their phone numbers with the researcher, computer-facilitated research allows participants to be anonymous (Sturges & Hanrahan 2004). Participants can invent new unique identifiers for the interview and

participate through text chat or voice only communications, limiting the ability for them to be identified by researchers, which may be particularly useful when researching sensitive topics (McDermott & Roen 2012).

When participating in sensitive topics, research participants may be particularly concerned about potential identification or people they know learning about their involvement in the research (Fahie 2014). Other researchers have found the ability to participate anonymously, such as through audio-only Skype, encouraged people to participate who were interested but concerned about identification (AlKhateeb 2018). While this level of anonymity might raise concerns about participants being honest and “who they say they are” in interviews, it is believed this is no more of a concern in online qualitative research as it is in other forms of research, both online and offline and qualitative and quantitative (Bouchard 2016b; O'Connor et al. 2014). Using a synchronous instead of an asynchronous method, such as email, for interviews may help assure the honesty of the participants responses, with them being part of an ongoing, real-time conversation where there is less opportunity to invent a dishonest response (O'Connor & Madge 2017).

Increasing spread and use of the internet has provided more options for how an interview can be facilitated. An increasing number of programs exist that allow people to communicate through both computers and smartphones (Nightingale 2017), including Skype, Google Hangouts, Whatsapp, Facebook Messenger, and Viber messenger (Google 2017). While these applications are free and have similar features, allowing text chat, voice chat, and videoconferencing, Skype provides the most anonymity, with accounts in the other applications linking to either the user's phone number or to existing email and social media accounts. In Skype, users can either create a temporary guest account or sign up by creating a unique username and filling out a profile, which does ask for identifying information but is not linked to existing online accounts or phone information, allowing choice over how much information to share. As with the other programs, internet access is needed to use Skype either through the web or as a downloadable program onto a computer, tablet, or smartphone. Text chat can be used on all devices, and a microphone and/or camera is needed to access the phone and videoconferencing aspects of the program. These features and the ability to use voice-only make Skype an option that can use the advantages of a telephone interviews while increasing participant anonymity (Oates 2015).

There is increasing use of Skype to conduct research interviews (Deakin & Wakefield 2013; Hamilton 2014; Hanna 2012; Janghorban et al. 2014; Iacono et al. 2016; Oates 2015; Seitz 2016; Sullivan 2013; Weinmann et al. 2012). Researchers have found Skype useful to communicate with harder-to-reach populations (Deakin & Wakefield 2013) and to access participants who may be unable or unwilling to meet in person (Hanna 2012; Janghorban et al. 2014). Skype allows participants to participate from a safe and familiar space to

potentially create a more relaxing environment (Hanna 2012). It also makes it easier for participants to exit an interview since they do not have to navigate either excusing themselves or asking the researcher to leave; all they need to do is click a button (Bertrand & Bourdeau 2010). There is an inherent power imbalance in all research, with the researcher the person asking the questions and the one who primarily benefits from the interview (Kvale 2006). The physical distance and ease of exiting the interview afforded by using Skype can help to even out this power imbalance by making it easier for the participant to exit the interview, helping them to feel more in control and comfortable in the interview (Hanna & Mwale 2017). Additionally, Skype allows users to block unwanted contacts, allowing participants to block the researcher after the interview, preventing future contact. In the context of sensitive issues, this would help reassure participants that they have control over how much they will be participating in the research, and that if they choose to stop the interview for any reason they cannot be contacted again. Alternatively, participants can set up a username specifically for the interview either by creating a new account for that interview or by using a temporary guest account.

Skype can also help facilitate additional protections for participants. Research information sheets and consent forms can be sent to participants using Skype before the interview so they have time to read about the study and what is involved and ask questions before the study begins, then providing verbal informed consent before the start of the interview. Alternatively, researchers can set up separate web pages with the study information and consent forms, where users can link this consent to their Skype username, similar to how consent is often given in an online questionnaire. Another advantage to this online platform is that information for support services can be easily sent to participants. Phone numbers and links to websites that provide support services can be sent to participants directly within Skype in addition to including these on research information sheets. The researcher can then also send the participant the most relevant link or phone number based on the information disclosed but can also remind the participant to refer to the information sheet for additional resources.

Using Skype also provides protections for the researcher. Qualitative research can involve researchers putting themselves at risk due to being in unfamiliar or unsafe environments (Bahn & Weatherill 2013) and spending time listening to and processing potentially distressing information from participants (Dickson-Swift et al. 2009; Lee 1993; Dickson-Swift et al. 2008). Skype reduces these problems. During some sensitive research interviews, researchers have reported stress when having to monitor their reactions to information brought up in interviews (Dickson-Swift et al. 2009). The space provided by voice-only Skype can also help researchers respond to disclosures of distressing events or experiences by allowing them to focus on their verbal response rather than their body language or facial expressions. Having one less

thing to pay attention to, especially when conducting research on a sensitive topic, may relieve some tension for researchers. However, to respond to participants' distress without visual cues, researchers need to pay close attention to what participants are saying and interject appropriate responses and offer breaks to participants as needed (Mealer & Jones 2014). The ability to block people on Skype is also a benefit for researchers so that participants cannot contact them once the research is over. Qualitative research, especially when it is about sharing personal or emotional experiences or opinions, can create the feeling that the relationship between the researcher and participant extends beyond these bounds, making it difficult for the researcher to cleanly end the relationship (Fahie 2014; Watson 2009).

There are, however, reported difficulties with using Skype for research. Some researchers have reported that participants have had trouble or have been uncertain about their ability to correctly access and use Skype (Hamilton 2014). Poor internet quality can also cause problems (Seitz 2016), and researchers should consider how participants' location may impact internet quality and how this may limit their ability to use Skype's video or audio features. Often these difficulties can be managed, but in some instances it has prevented people from participating or resulted in the need for an alternative interview method (Weinmann et al. 2012).

Skype has been used in some instances to conduct research on sensitive topics, such as volunteer engagement in Phase 1 clinical trials (Hanna & Mwale 2017; Oates 2015), but discussions of this research is limited. Past research has addressed the value of Skype as a way to facilitate interviews, but it has largely focused on its usefulness for hard to reach populations and as a way to combine advantages from telephone and face-to-face interviews. While there is some discussion of the advantages of other computer-mediated communication and sensitive topics, a more detailed examination is needed. The current research focuses on Skype voice-only interviews, including advantages and disadvantages of using this platform. We draw on our research to provide insights into using Skype interviews for researching sensitive topics.

Using voice-only Skype in a sexual identity study

Our research involved a series of 24 semi-structured interviews on the topic of sexual identity. Participants were Australian residents who self-identified as male, female, and gender-fluid and ranged in age from 18 to 27. Skype was chosen as the platform for the interviews because sex and sexuality are often considered sensitive topics (Noland 2012; Poole et al. 2004). While the interviews were about what people thought about sexual identity and how they understood it, not on their own sexual identities, there was concern about sensitive issues being discussed. Based on this, it was determined that

using voice-only Skype would provide increased anonymity to participants so they would not have to physically show themselves and could use a Skype account unconnected to their real name.

An advertisement for the research was placed on the university's research participant pool website, and interested participants contacted the first author. Potential participants were sent additional information about the study, including aims, what participation involved, and consent and data protection information. Participants were told they would need to supply a Skype user name, and it was suggested they create a new one for the study. Contact on Skype was made between the first author and each participant before the start of the interview. The information sheet was reviewed with participants at the time of the interview, and they were given the chance to ask any questions before providing verbal informed consent and beginning the interview. Interviews concluded with the option for participants to ask any further questions.

Preparing for Skype interviews on sensitive topics

Due to the potentially sensitive nature of the topic, a number of precautions were taken during the research design phase to ethically manage potential risks to both participants and researchers. The goal was to create a safe environment for participants to feel comfortable discussing a potentially sensitive topic (sexual identity), so ways to increase participant anonymity within an interview and being able to provide support to participants were important. Also key was ensuring researchers were protected. The researcher conducting the interviews (first author) discussed potential issues with a counsellor, an information technology (IT) advisor, and a university lawyer. Concerns about how to handle disclosures of abuse or distressing sexual experiences from participants were discussed with the counsellor. Key strategies suggested were to spend some time working out possible disclosures and how to appropriately respond to them. For example, disclosures of sexual abuse, either as victim or perpetrator, were a concern due to the sexuality topic, although considered unlikely as the questions were designed to investigate the concept of sexual identity rather than experiences. However, if this were to occur, knowing how to handle these potential disclosures to best support the participant was important. Participants are volunteering personal and potentially emotional information and researchers need to consider how to respond and support these disclosure to best mitigate possible harm within the research context (Johnson & Clarke 2003). Responses to a disclosure that acknowledged what the participants shared and checked in with how they were feeling were prepared ahead of time for the researcher to reference in the moment. Additionally, contact information for relevant helplines for

participants who expressed emotional distress or disclosed being the victim of abuse were readily available. These were included both on the participant information sheet and kept on the researcher's computer so she could copy and paste the information into the Skype text chat box to send to the participant if needed.

Questions about how to set up the researcher's Skype account and how to handle any inappropriate (e.g., unrelated sexually explicit communication or images) or unwanted contact from a participant were discussed with the IT advisor. Key suggested strategies were to conduct the interviews on campus to prevent the researcher's personal IP address from being tracked and to conduct the interviews as voice-only.

The questions used for the interviews were reviewed by the lawyer to make sure they were unlikely to uncover participation in illegal activities. In this instance, the fact that interviews conducted over Skype can mask a person's location is a disadvantage, as the interviewer cannot know if what someone is discussing is legal or not in their location. Some laws, such as age of consent, vary across jurisdictions, and we did not have a way of distinguishing what laws would apply to each participant. Within face-to-face or telephone interviews, this is less likely to be a problem because the researcher will know where the participant is when he or she is participating. Legal reporting requirements the researcher might have if an illegal activity was disclosed were also discussed. The decision was made to carefully word questions to help reduce the likelihood illegal activities would be mentioned and to immediately divert the conversation should this occur. Illegal activities did not arise during the interviews. If illegal activities had been disclosed, the legal advice was to prepare a report which included the participant's Skype details to have a record of the disclosure, although due to the nature of the interviews conducted over Skype there was limited ability to trace the individual. We did not provide information on (not) discussing illegal activities on our information sheet or directly raise this with our participants, and reflecting on our practice we now view this as problematic.

The precautions taken were to protect both the participants and researcher since sensitive topics can have an impact on everyone involved. Some of these steps, such as meeting with the counsellor and the lawyer, would also be useful for face-to-face and telephone interviews on sensitive topics. Discussing additional considerations with IT is Skype specific, but an important step when deciding to use Skype. Having an awareness of both how Skype works and how the researchers' institution internet setup can help facilitate anonymous and effective interviews will help toward making the interviews successful.

Advantages to conducting sensitive topics interviews using voice-only Skype***Increased control***

Skype reduced the time needed to participate for both the researcher and participants because there was no requirement for people to travel to conduct the interviews. It also allowed participants to choose where they wanted to be during the interview. This was important for at least one participant, who reported he would not want to participate from home, so Skype allowed him to call from another location. Having control over where the interview took place helped people feel more comfortable participating in a topic that may have been more difficult to discuss in a different environment.

Willingness to disclose

Participants were willing to share their views regarding sexual identity during the Skype interviews. Participants discussed personal experiences and information about their sexual identity unprompted. While the interview questions did not ask about personal experiences, participants freely shared these to support or demonstrate their opinions, including those regarding their own sexual experiences. It did not seem that participants held back information due to discomfort, which can be a concern when researching sensitive topics. This willingness to disclose information in Skype interviews on sensitive topics is similar to findings in telephone interviews (Trier-Bieniek 2012; Irvine et al. 2013), indicating that use of a computer or internet connected mobile device does not affect rapport-building and disclosure. In one instance, a participant did not want to say something but stated it was because it was “rude” and might be offensive, so it is unclear if a different interview method would have made the person more comfortable saying the held-back statement.

Text chat

The use of text chat was also beneficial during the course of this research. In one instance, a call was dropped due to a bad internet connection, but the text chat function still worked. Luckily this was at the end of the interview with only a wrap-up question and some demographic items to answer. The participant typed in a detailed response to the last question, indicating no reduction in depth of information. In line with other research (Couch et al. 2012; Kazmer & Xie 2008), this suggests text chat would also be a useful method for sensitive topics interviews, particularly when anonymity and physical distance may help the participant feel more comfortable.

Additional features

The ability to use other features in Skype should be considered as well. Within Skype there are symbols to indicate whether a person is online, offline, or away, which are helpful in determining if a participant is online; however, these are not always an indication the participant is ready to commence the interview. Before starting the interview, the researcher was able to message participants to make sure they were ready without disrupting them with a call if they were not.

Disadvantages to conducting sensitive topics interviews using voice-only Skype**Dropped calls and lack of visual cues**

A combination of internet connectivity issues and a lack of visual cues also created problems during the interviews. With the lack of visual cues it was hard to tell if there was a drop in the connection, if participants were just thinking, or if they were uncomfortable with the question, making it necessary to check with a person to make he or she was still there. This concern was compounded when there had already been issues with the call leading to exchanges such as the following:

Researcher: ...just a general passing of time people understand themselves better? Does that sound right? (long pause, no response, and no background noise) Hello?

Participant: Hello.

Researcher: You're still there, I thought it cut out for a second. No worries, um, so saying experiences and time allow people to kinda get a better understanding of themselves?

While this did not completely disrupt the conversation, it did interrupt the flow of conversation and require a rephrasing of the question. However, this is not always a bad thing; in an instance where someone is uncomfortable with the question rephrasing can provide the researcher with an opportunity to present the question in a less threatening manner.

In other instances, long silences can give participants time to think about their answer or compose themselves when discussing an emotional topic (Mealer & Jones 2014). In this study, longer silences or pauses were assumed to be due to the participant thinking and helped researchers avoid rushing participants to answer and to give them time to think. Silences were interrupted when it became unclear why the participant had not responded. A lack of background noise, Skype indicating that the internet connection was poor, and previous pace of responses within the interview were used to decide when to interrupt the silence. These were fairly good indicators of

when to interject, with fewer interruptions, but more longer silences in which the participant was waiting for the interviewer to respond.

Other interruptions come from instances such as in the previous Text Chat section when a call is dropped. While this was disruptive to the interview, it did occur at the end with only one wrap-up question left. Had it occurred in the middle of the interview or during the discussion of a particularly sensitive area, this may have been more disruptive. In this case, it may have been necessary to conduct the remainder on text chat or reschedule the other half of the interview. However, a switch between methods for the second half of the interview or rescheduling may have had an impact on rapport. Depending on what was being discussed at the time of the dropped call, there may be concerns over harm to participants if they were in the middle of an emotional disclosure. Suddenly losing connection to the researcher may be jarring and leave participants feeling vulnerable. Text chat may help in this instance if the internet connection is not completely lost, with the researcher being able to follow up and check in on participants, re-establish the conversation, and send links to support services if needed. The interview may be able to continue with little to no loss of participants' comfort in discussing sensitive topics with text chat having been found useful in aiding disclosures of personal information in an online therapeutic setting (Stubbings et al. 2015), and this may hold true for interviews as well. This drop in connection may end the interview and the researcher and participant will have to consider if they want to reschedule, or if poor internet connections make the potential harm from an additional lost connection not worth the risk.

Other potential disadvantages

One of the disadvantages to not conducting an interview on a sensitive topic in person is the loss of physical cues between the research and participant. This may lead to the researcher unknowingly missing a signal that the participant is distressed and needing a break or some additional support. As with telephone interviews, it is important researchers listen for cues and check in with participants, double checking if they are ok or need a break. One advantage to using Skype over the telephone is the text chat function, where researchers can send participants links to help lines or other resources. This can be done either as the researcher sees fit or at the end of every interview, even if the information was provided in the information and consent sheets, as a back-up measure.

Another potential issue brought up by Irvine et al. (2013) is their finding that participants in telephone interviews will more often seek reassurance that the answers they are providing are sufficient than

participants in face-to-face interviews. Possible reasons for this were lack of feedback from researchers and lack of visual cues. A potential ethical concern was that participants may feel they did not do “well” at the interview, and this may cause stress after the interview is over. Within the context of sensitive issues, this is particularly concerning since participants may already be feeling stress from recalling or discussing the research topic. In this study, some participants did ask if they were answering questions “correctly” or understanding the questions properly. The interviewer found it helpful to start the interviews by restating the aims of the interview and that the goal was to learn how the participants thought and understood the topic. When participants were asked if they were “correctly” answering questions, they were reassured and reminded of the goals of the research, which seemed to help. Without follow-up after the interview, however, it is not possible to know if this was effective in preventing any long-term uncertainty or distress as a result of participating in the research.

Additional Skype considerations

Program familiarity

While Skype is an accessible program, it does require some familiarity with computers, which could prevent people from participating in research. Some participants in our research had difficulty accessing Skype due to a lack of familiarity with the program. This required some help from the researcher to direct participants to the website where they could download Skype and set it up. Some of the difficulty came from having to do all communication over email, meaning directions had to be very clear and the participant and researcher had to hope they were both referencing the same thing. Other researchers have provided detailed directions to participants before the interviews (Hamilton 2014), and this would help reduce difficulties.

Account set-up

Researchers should make sure the Skype account they use for the research is easy to find and not similar to other Skype usernames. In this research, some participants found and contacted the researchers’ personal Skype account. While the researchers’ research account had their university affiliation in the profile, the difference between the two accounts was not clear enough. To reduce this problem researchers could include a word or number in their username and profile (such as “Researcher”) and tell participants to look for that. Finding the correct participant account was sometimes difficult for the researcher because multiple accounts for the same name (e.g., “Jane Smith”) would come up and the researcher would have to guess which one was correct based on any provided profile cues. Not only does this make establishing contact more difficult, but it

could also enable participants to contact researchers after the study. Due to the nature of sensitive topic research and the rapport and empathy expressed by the researcher, the relationship between participant and researcher can become blurred (Bahn & Weatherill 2013; Dickson-Smith et al. 2006). Sometimes participants will want to continue to discuss the topic with the researcher outside of the study (Fahie 2014); preventing participants from getting personal contact details for the researcher will make it easier for the researcher to maintain a professional relationship and appropriate boundaries with the participant. Researchers could also ask participants to include additional identifying information in their profile during the set up phase, although researchers should be hesitant to give participants additional tasks. Researchers could also make sure that any personal Skype accounts do not include their name or change the privacy settings to make it more difficult for people to find their profile.

Based on our experience we have developed a Skype Preparation Checklist for future researchers considering using Skype for their research on sensitive topics (see below). This can be used as a supplement to existing checklists for conducting interviews on sensitive topics, such as Dempsey et al.'s (2016) Framework of Essential Elements in Qualitative Interviewing, which provides considerations and actions required for various stages of interviews from planning through to concluding interviews. What our Skype Preparation Checklist adds is additional considerations when planning to interview on Skype.

Skype Preparation Checklist

- Determine appropriateness of study or population for Skype interviewing
- Decide whether to use audio-only or video.
- Brainstorm for possible distressing events (new ones may come up during the research):
 - Consider responses to these events and whether you will be able to respond sufficiently through Skype.
- Create a plan for how to manage these events, discussing with others where needed:
 - Counsellor
 - Supervisors/co-researchers
 - IT
 - Legal team
 - Gather contact information for helplines or websites (national):
 - Have this information in a document so it can easily be copied and pasted into Skype to send to participants.
- Set up research Skype username and profile:
 - Make any personal accounts private.
 - Make research account username easy to identify.
 - Decide if you want to include a photo in your profile.

- Create directions for how to set up Skype to provide to participants.
- Check that the microphone/camera on the device you are using for interviews is working and up-to-date (do regularly during the course of the research).
- Test a Skype call from the interview location.

Discussion and conclusion

Within this study, Skype was a useful and effective way of interviewing participants on a sensitive research topic. Using the voice-only feature of the program afforded participants an additional level of anonymity not available with face-to-face or telephone interviews. Using Skype did not appear to have a negative impact on participants' willingness to discuss sensitive issues, with many sharing personal details related to sexual identity.

There were some problems with using Skype, the biggest being internet connection issues, which could limit the use of the program if people are in places with poor internet connections. While there were some technical difficulties and some participants who were unfamiliar with Skype, it was easy to overcome these problems. Researchers looking to use Skype may want to consider having directions for set up and use of the program available to send participants. The participants in this study were younger, ranging from 18 to 27 years old, so they might have had more familiarity with Skype or similar programs than older participants who may be less comfortable with technology.

None of the issues that were of concern before the research started, such as disclosures of abuse or unwanted sexual contact from participants, were encountered during this research. This could be due to the not very sexually explicit nature of the research topic, recruiting participants from the researcher's own university, or the precautions taken in setting up the Skype interviews. However, thinking through possible issues and ways to respond was still useful because they prepared the researcher for the possibility of these occurring. As other researchers have reported issues when conducting research on sexuality and other sensitive topics, it is important to be aware of issues that might be encountered so they can effectively deal with (Dickson-Swift et al. 2008; Lee 1993; Roulston 2014).

Based on our experience, we developed a checklist for future researchers considering using Skype for their research. While Skype was useful in the context of our research it may not be an effective method for researching other sensitive issues. Direct questions were not asked about participants' own experiences in relation to sensitive issues, and while participants did share these, responses might have been different if the questions were directly

about them. However, the findings from our research are encouraging and suggest that Skype may be an effective tool for conducting research on other sensitive issues.

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Appendices

Appendix C

Online Sexual Activities Questionnaire

Solitary-Arousal Items

Prompt: Many people access sexually explicit material for their own entertainment or arousal. For each item listed, please indicate if you have ever participate in the activity either **online or offline** and how often you have participated in it in the **past 3 months** (if applicable).

Response options presented in two columns, one for online and one for offline:: No; Yes, but not in the last three months; Yes, once or twice; Yes, a few times; Yes, once or twice a month; Yes, once or twice a week; Yes, daily; Yes, more than once a day; Not applicable (for something that does not have an online/offline counterpart)

Viewed sexually explicit pictures involving men and women

Viewed sexually explicit pictures of two or more women

Viewed sexually explicit pictures of two or more men

Viewed sexually explicit pictures of transsexual/intersex people

Viewed sexually explicit pictures related to a kink (e.g., sexually explicit pictures involving clowns, S&M, bestiality, etc.)

Watched sexually explicit videos involving men and women

Watched sexually explicit videos of two or more women

Watched sexually explicit videos of two or more men

Watched sexually explicit videos of transsexual/intersex people

Watched sexually explicit videos related to a kink (e.g., sexually explicit videos involving clowns, S&M, bestiality, etc.)

Watched someone/others engaged in sexual activity on webcam/in a room

Paid to access sexually explicit pictures and/or video

Read erotic or sexual stories

Posted/shared erotic or sexual stories

Posted/shared a video of yourself engaging in a sexual activity

Gone into a virtual sex world using an avatar to look around but not talk with people (Answer for ONLINE ONLY)

Partnered-Arousal Items

For partnered-arousal activities the options were not presented side by side, but in separate sections due to the items not being as applicable across online and offline as with the solitary-arousal and non-arousal items.

Prompt: Many people use the Internet to participate in sexual activities with other people. For each item listed, please check the box if you have ever participated in the activity **offline** and how often you have participated in it in the **past 3 months** (if applicable).

Response options: No; Yes, but not in the last three months; Yes, once or twice; Yes, a few times; Yes, once or twice a month; Yes, once or twice a week; Yes, daily; Yes, more than once a day; Not applicable (for something that does not have on online/offline counterpart)

Offline	Online (These are the included this is included for comparison)
Participate in a sexual activity with another person	Had your avatar participate in a sexual activity with another avatar(s)
Engaged in sexual acts for someone watching	Engaged in sexual acts for someone watching over webcam
Participated in a sexual chat or discussion for arousal	Participated in an online sexual chat or discussion group for arousal
Participated in sex games	Participated in online sex games
Used any kind of sex toy that is controlled by someone else	Used any kind of electronic sex toy that is controlled through the internet by someone else (e.g., with the Simulator)
Controlled any kind of sex toy that someone else was using	Controlled any kind of electronic sex toy through the internet that someone else was using
Sent messages to someone about sexual acts you would do to him/her through text/SMS or the mail	Sent messages to someone about sexual acts you would do to him/her through email and/or a social networking site or online/app messaging platform (e.g., facebook, RSVP, tinder)
Received messages about sexual acts someone would do to you through text/SMS or the mail	Received messages about sexual acts someone would do to you through email and/or a social networking site or online/app messaging platform (e.g., facebook, RSVP, tinder)

Appendices

Wrote and sent stories about sex to someone through the mail	Wrote and sent stories about sex to someone through email and/or a social networking site
Received stories about sex from someone through the mail	Received stories about sex from someone through email and/or a social networking site
Exchanged text/SMS messages about sexual acts that you would do with another person	Exchanged instant messages about sexual acts that you would do with another person
Engaged in sexual acts, by yourself, that someone was telling you to do	Engaged in sexual acts, by yourself, that someone on IM was telling you to do for a webcam
Watched someone engage in sexual acts, by themselves, that you were telling them to do	Watched someone engage in sexual acts, by themselves, that you were telling them to do on webcam
Acted out sexual stories, by yourself, that another person wrote to you	Acted out sexual stories, by yourself, that another person wrote to you
Engaged in sexual acts by yourself at the same time as someone else	Engaged in sexual acts by yourself at the same time as someone was by themselves on webcam Engaged in sexual acts by yourself at the same time as someone was by themselves using video call
Watched someone engage in sexual acts, by themselves	Watched someone engage in sexual acts, by themselves, on webcam
Engaged in sexual acts with someone for another (e.g., two individuals engaging in sexual acts while a third party watches)	Engaged in sexual acts with someone for another on webcam (e.g., two individuals engaging in sexual acts on a webcam while a third party watches)

Appendices

Non-Arousal Items

Prompt: Many people use the Internet and offline resources to connect with others and access information. For each item listed, please indicate if you have ever done the activity either online or offline.

Please also indicate how often you have had each experience in the **past 3 months**.

Response options presented in two columns, one for online and one for offline: No; Yes, but not in the last three months; Yes, once or twice; Yes, a few times; Yes, once or twice a month; Yes, once or twice a week; Yes, daily; Yes, more than once a day; Not applicable (for something that does not have an online/offline counterpart)

Looked for information about sexual health (e.g. STIs, contraception, fertility, anatomy/physiology, etc.)

Looked for information about sexual activities

Looked for information about sexual orientation

Looked for information about sexual toys, devices, material, clothing

Looked for advice about sexual relationships

Looked for advice about sexual problems

Joined a community related to your sexual orientation

Joined a dating service

Exchanged messages with someone through a dating service

Flirted with someone using IM or SMS (e.g., MSN messenger, Yahoo messenger, etc.)

Flirted with someone using email and/or a social networking site (e.g., Facebook)

Joined a support group related to sexual health concerns

Joined a kink group/community (e.g., S&M groups, bondage, rubber, etc.)

Used a dating site/service specifically to seek sex partners (e.g. intimate encounters on Lavalife, Plenty of Fish, Adult Friend Finders, Swingtowns, Womanline, etc.)

Appendix D

Co-Author Attribution

Co-Author Attribution: Professor. Barbara Mullan		
	Online Research Ethics (Chapter 2)	Skype for Sensitive Topics (Chapter 2)
Conception & Design	X	X
Acquisition of Data & Method		
Data Conditioning & Manipulation		
Analysis & Statistical Method		
Interpretation & Discussion	X	X
Final Approval	X	X
I acknowledge that these represent my contribution to the above research output. Signed:		

Co-Author Attribution: Associate Professor. Lynne Roberts		
	Online Research Ethics (Chapter 2)	Skype for Sensitive Topics (Chapter 2)
Conception & Design	X	X
Acquisition of Data & Method		
Data Conditioning & Manipulation		
Analysis & Statistical Method		
Interpretation & Discussion	X	X
Final Approval	X	X
I acknowledge that these represent my contribution to the above research output. Signed:		