Curtin School of Population Health

A Community-Engaged Research (CEnR) to Explore Attitudes, Behaviours, and Experiences (CABE) of Men Who have Sex with Men (MSM) and Transgender Women (Waria) in Bali, Indonesia.

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Doctor of Philosophy

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement 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 research procedures have been approved by Human Ethics Committees from Curtin University, Western Australia **(HRE 2019–0759)** and Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia (**No: 2521/UN14.2.2.VII.14/LP/2019).**

Signature: …….

Date: 20 October 2022

Executive Summary

Background

Within the Indonesian province of Bali, there are a significant number of MSM (14,000) and waria (650) (Bali AIDS Commission 2014). These are priority populations for public health programs given the high incidence of HIV and STIs among these populations.

The most recent Indonesia Biological and Behavioural Survey (IBBS) administered in 2015 found HIV prevalence amongst MSM in Denpasar was 36.0% (Indonesia Ministry of Health 2015). In Bali between 2011 to 2015, 20% of HIV cases were via transmission from homosexual, and 76% from heterosexual sexual activity (Indonesia Directorate General of Disease Prevention and Control 2017). Epidemiological data is not routinely collected; however, based on the most recent published data, the prevalence of Human Immunodeficiency Virus (HIV) infection in Bali among gay men was 18.7% and for transgender people 40.9% (Januraga, Wulandari et al. 2013).

A survey conducted in Bali amongst the MSM and waria community (Indonesia Sexual Health Survey (SekSI) study 2018) highlighted the risk of HIV and STI transmission among MSM due to the proportion of participants reporting multiple sex partners and unprotected sexual intercourse. MSM reported having sex with their female partners, with casual partners and with sex workers, highlighting the significance of sexual health risks outside the MSM community (Bavinton, Mahendra et al. 2019). While this study explored behaviours of MSM, further research is needed to understand the attitudes, behaviour, and socio-cultural experiences of the unique MSM and waria populations in Bali.

Objectives

This study explored attitudes, behaviours, and experiences of MSM and waria in Bali to inform sexual health policy and practice. The specific objectives were: 1) to explore socio-ecological factors that influence sexual health attitudes and behaviour among MSM and waria living in Bali; 2) to identify enablers and barriers that influence their safer sex behaviours; 3) to develop a social model that conceptualises their sexual health attitudes and behaviours; 4) to explore experiences of MSM and waria including social-cultural aspects, stigma, discrimination, and mental health (psychological distress and happiness); and 5) to provide recommendations for the development of strategies or interventions to improve safer sex behaviours among MSM and waria living in Bali.

Methods

This community-engaged research (CEnR) study employed moderate engagement of community members as research partners. The mixed methods research included five sequential phases. The first two phases focused on building partnerships and exploratory research (focus group discussions/FGDs). Phase three included the administration of an online survey (n = 416 Indonesian MSM and waria participants). Phases four and five involved explanatory (in-depth interviews) and dissemination strategies, respectively. The survey analysis was focused between socio-ecological characteristics (individual-level, interpersonal-level, and community/societal-level) and attitudes and behaviours. Individual-level factors included age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, receiving sexually transmitted infection (STI) information or not, STI experience in the past six months, psychological distress level, happiness level, and Human Immunodeficiency

Virus (HIV) infection status. Interpersonal-level factors included marital status, family disclosure and acceptance of sexual identity, daily activities, and number of partners. Community/societal-level factors included stigma, discrimination, and environmental safety. In addition to descriptive statistics and univariate analysis, multivariate analysis (logistic regression and linear regression) was employed for the quantitative data (survey) and thematic analysis was used to analyse the qualitative data (FGDs and in-depth interviews).

Results

Phase 1

The first phase of the study involved building partnerships with MSM and waria communities through a one-day workshop meeting with ten purposively selected research partners (6 December 2019). The workshop enabled discussion and brainstorming to identify various social and health issues experienced by the MSM and waria community. Research partners also helped to identify potential survey items. An outcome of the workshop included the development of a draft survey to measure attitudes, behaviours, and experiences of MSM and waria in Bali.

Phase 2

Two focus group discussions (FGDs) with MSM and waria community members were conducted after the workshop to better understand issues faced by these communities. Participants were involved in two FGDs (N=18) and were purposively recruited by research partners. Key themes from the first FGD (N=10) included cultural obstacles, urban vs rural residence, community understanding of HIV, and high-risk jobs amongst waria. Questions pertaining to these themes were added to the survey draft. The second FGD (N=8) provided the opportunity to present the draft survey to all

participants to review for face and content validity. The FGDs enabled the development of a revised survey draft which incorporated feedback from partners and FGD participants.

After these FGDs, meetings with three public health experts were conducted to further refine the survey. These meetings were held in-person (N=2) and online (N=1). The final version of the survey aimed to accommodate all suggestions with some minor revisions from the research team to ensure all relevant information was collected and the survey could be completed in an acceptable time. The final survey underwent face validity with the ten research partners.

Phase 3

Phase 3 included the administration of an online survey (n = 416 MSM and waria participants). Conducted from July to September 2020, this survey aimed to collect data to address research objectives one, three, and four. Data from the survey, which focused on socio-ecological variables that influenced attitudes and behaviours, were analysed using SPSS and Stata software and four papers were developed. Currently, one of these papers has been published and three are under review. Key findings included:

1. Objective 1a: to explore socio-ecological factors that influence sexual health attitudes.
    a. Amongst MSM participants, a less supportive condom use attitudes score was reported by non-Hindu MSM. More supportive condom attitudes were associated with a higher condom use knowledge score.
    b. A higher stigma score was associated with less positive condom attitudes, and those who were “unsure” if it was safe to live in Bali reported more positive condom use attitudes.

c. Amongst waria participants, a higher number of commercial sex partners was associated with less positive condom use attitudes.

2. Objective 1b and 3: to explore socio-ecological factors that influence sexual health behaviour, and to develop a social model that conceptualises the sexual health attitudes and behaviour among MSM and waria in Bali.
    a. Most MSM and waria participants were categorised as 'medium risk' of condom use behaviours (53.9% and 49.6% respectively).
    b. Amongst MSM, condom use behaviours scores were significantly related to condom use attitudes; STIs experiences; marital status; occupational status; number of regular, casual, and commercial sex partners; and discrimination experiences.
    c. Amongst waria, HIV status; marital status; number of regular, casual, and commercial sex partners were found to be significantly associated with condom use behaviour scores. Several variables were found to be significantly related to condom use behaviours amongst MSM including drinking alcohol; illicit drug use; and asking prospective sex partners about their experience of injecting drugs use. Amongst waria participants condom use behaviours were associated with drugs use; condom use; and immediate sex with a new person.
3. Objective 4: to explore experiences of MSM and waria in Bali including social-cultural aspects, stigma, discrimination, and mental health (psychological distress and happiness).
    a. High levels of stigma were reported by 50.5% of MSM and 62.7% of waria. Discrimination was reported by 35.5% of MSM and 72.4% of waria. Family rejection or no family awareness of MSM status equated

to higher levels of stigma. MSM who were not single were twice as likely to experience discrimination. Non-Hindu MSM were nearly three times as likely to experience discrimination. Homosexual and bisexual waria reported lower odds of experiencing stigma. Waria who were studying were less likely to experience discrimination.

b. Factors found be significantly associated with higher psychological distress included: being a student, reporting higher levels of stigma, previous lifetime experience of discrimination, felt better prior to COVID-19 pandemic, and self-reporting as less happy than the average person. Those who identified themselves as being homosexual reported significantly lower psychological distress. Those who considered themselves to be less happy than the average person (N = 316; 87.1%) were more likely to live with a partner and to report moderate to very high psychological distress.

Phase 4

Phase 4 identified the enablers and barriers to safer sex behaviour among MSM and waria in Bali and explored their socio-cultural experiences. In-depth interviews administered via WhatsApp video calls were conducted during March 2021, amongst ten MSM and waria. Respondents were selected purposively based on gender, employment, and marital status to obtain a broad variety of experiences.

Six themes described the experiences of MSM and waria living in Bali: *bullying and physical harassment; social, self-stigma, and discrimination; difficulty in fulfilling religion, culture, and family expectation; issues with working conditions; problems in daily life which reduce happiness and increase depression and distress;*

and complicated sexual life. In relation to reducing high-risk behaviours, MSM and waria participants in this study discussed enablers and barriers that influenced them to practise safer sexual behaviours. Some enablers that emerged during the in-depth interview were *perceived susceptibility for STIs/HIV, the ability to negotiate with sexual partner, availability and accessibility of condom, and awareness of the impact of unsafe sexual behaviours for future health.*

While the availability and affordability of condoms was found to be an enabler, several participants also described this as a barrier. Themes describing barriers included: *unavailability and condom cost, persistent stigma around condom, sexual pleasure and preferences to not using condom, and under the influenced of alcohol during sexual intercourse.*

Conclusions and Recommendations

Despite this research occurring amongst the evolving COVID-19 pandemic, this project achieved strong participation across all five phases and was well supported by the ten research partners. It presents a strong example of community-engaged research, and how it can be a very effective tool to collect highly sensitive information from marginalised populations.

Many socio-ecological factors were found to be associated with condom use attitudes and behaviours including religion, STI knowledge, marital status, employment status, number of partners, and stigma. Enablers of safer sexual behaviours included perceived susceptibility for STIs/HIV, the ability to negotiate safer sexual practices, the availability and affordability of condoms, and awareness of impact of unsafe sexual behaviour on health. Barriers to safer sexual behaviours included unavailability and condom cost, persistent stigma around condoms, sexual

pleasure and preferences to not using condoms, and alcohol consumption during sexual intercourse. Experiences of MSM and waria living in Bali also varied from bullying whilst at school or college; physical harassment while working as sex workers; social and self -stigma and discrimination during various life stages; religion, culture, and family expectation as a "man" in the family and society; daily life and working environment which triggers depression, psychological distress, and reduced happiness; and complicated sexual life.

Several recommendations based on this research were developed. **For policy makers**, reducing discrimination by strengthening company policy regarding the importance of respecting all people, regardless of their gender and sexual identity, should be a priority and based on articles 5 and 6 the "Employment Act" no. 13 year 2003. Stakeholders could also work with global human rights organisations to learn from other countries who have successfully advocated for the decriminalisation of same sex relationships and sex work. Government-led interventions focusing on safe access to healthcare settings and confidentiality when disclosing MSM status to healthcare providers will also reduce stigma and enhanced access by MSM and waria. School-based relationships and sexuality education that affirms diverse gender and sexual identities is recommended. Whole school approaches should be adopted to address issues such as bullying, harassment, stigma and discrimination. Opportunities for waria to develop skills to enhance employment opportunities should be provided. Advocating the opportunities for waria to have their identity as waria in their national identity card and health insurance card should also be instigated. **For non-government organisations (NGOs)**, this research found low condom use knowledge was associated with negative condom use attitudes, and a previous experience of STIs was associated with higher risk condom use behaviours. It is recommended NGOs actively

target condom knowledge and condom attitudes. This may be via targeted education campaigns for particular groups or populations. In addition, opportunistic education could be provided to individuals as part of clinic visits or outreach in the field. Condom distribution, which is routinely conducted by NGOs during outreach and in clinics, could be supplemented with other risk reduction strategies that acknowledge sexual activities between regular, casual, and/or commercial partners. Several types of risk reduction practices used by the MSM community other than condom use include abstinence, postponing sex, solo sex, mutual masturbation, dry kissing, and choosing manual sex compared to oral or anal sex (Mimiaga, Reisner et al. 2013). The development and implementation of an intervention targeting families to accept MSM and waria would be beneficial as familial support was found to be a significant factor of stigma amongst MSM. **For MSM and waria communities and families,** reducing stigma related to culture and environments issues by community participation may be beneficial; for example, having and keeping a good relationship with neighbours and engaging actively in events in the community. **For future research,** further investigation around the associations between condom attitudes and religion, and research focusing on the relationships between other individuals (i.e., ethnicity), interpersonal (i.e., social, and sexual networking) and societal factors (i.e., law and policy) and condom use attitudes and behaviours are required. Interventions are required to mitigate the exacerbation of the mental health burden due to the pandemic and may include several modalities, in person or online. Research on the amenability and efficacy of telehealth services and/or 24/7 helplines numbers is needed. Better understanding of the potential protective factors of employment during the pandemic or other crises on the impact of psychological distress and happiness amongst these communities is required to inform policy and practice.

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Om Swastiastu,

May All Beings Be Happy

I deleted my drafts several times, as I did not know where I should start and finish this acknowledgement. This has been a wonderful learning journey: full of surprises and joyful, but at the same time it has been very hard, sad, and full of challenging times. And this journey was not only about the thesis, but more a steppingstone which has opened my eyes to what are the important things in life. It has taught me how to become a strong person, what is the purpose of my life, what should I do, and where I should go next.

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Om Shantih, Shantih, Shantih, Om.

Statement of Contribution

The Curtin School of Population Health at Curtin University provided the research environment that supported the PhD candidate to undertake this research. The PhD candidate was responsible for designing the study including the methodology, participant recruitment, implementing data collection and analysis, and leading the development of all publications presented as part of this thesis, with input from co-authors. Details are summarised as follows.

Supervisors:

1. Professor Sharyn Burns
2. Doctor Jacqueline Hendriks
3. Professor Bruce Maycock

Research collaborators and co-authors: All of the supervisors, Dr. Hui Jun Chih, and Dr. I Nyoman Sutarsa. Signed statements of the contribution of each co-author are provided in Appendix A.

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Statement from Principal supervisor

I recommend that the thesis now is ready to submit for examination. The original work conducted as part of this thesis submission has led to six publications in peer- reviewed journals, three of which have been published and the other three are currently under review following request for revisions from the journal.

Professor Sharyn Burns
Principal Supervisor

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Exegesis List of Figures

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Exegesis List of Abbreviations

AIDS: Acquired Immunodeficiency Syndromes

ARRM: AIDS Risk Reduction Model

CEnR: community-engaged research

COVID-19: Coronavirus Disease-19

CLAI: condom-less anal intercourse

FSWs: female sex workers

FGDs: focus group discussions

HBM: Health Belief Model

HIV: Human Immunodeficiency Virus

IBBS: Indonesia Biological and Behavioural Survey

LGBT: lesbian, gay, bisexual, and transgender

LMICs: low/middle income countries

MSW: male sex workers

MSM: Men who have sex with men

MLR: Multiple linear regression

NGOs: Non-governmental organisations

PLHIV: people living with HIV

PWID: people who inject drugs

PrEP: Pre-exposure Prophylaxis

STIs: Sexually transmitted infections

SekSI: Indonesia Sexual Health Survey

SCT: Social Cognitive Theory

TBP: Theory of Planned Behaviours

Chapter 1 Introduction

1.1 Overview

Bali is an island and a province in Indonesia covering an area of 5,780 square kilometres (United Nation 2019). The island is known as Indonesia's cultural centre, which makes it a popular tourist destination with travellers from Indonesia and internationally. This has boosted the Balinese economy making it a desirable place to live. In 2022, the Balinese population was estimated at over 4.2 million, with 83.5% of the population following the Balinese Hinduism religion (World Population Review 2022). Many expatriates live in Bali with an estimated 30,000 people from other Indonesian islands and other countries. As well as being known as one of the most popular tourist destinations in the world Bali is also seen as one of the most gay-friendly islands globally (Statistics of Bali Province 2017).

Bali is successfully assimilating preserved cultures while embracing other cultures associated with tourism activities. The indigenous Balinese community practises a patriarchal system, which means girls (women, daughters) usually marry and leave the family home while boys (men, sons) bring their wife into the household (Howe 2006). Balinese men are commonly perceived as the important gender in Balinese culture and they enjoy privileged rights and inheritances (Ndun, Suttor et al. 2018). Therefore, cultural expectations support Balinese men to marry a female and have a family (inheritors).

Hinduism is the most common religion practiced in Bali. Religious texts make no explicit declarations or disapproval towards transgenderism or homosexuality. In practice, transgender women are able to take part in dance and other performances in Balinese Hindu rituals; however, there have been cases of transgender women being denied entry to temples due to "inappropriate dress," such as wearing traditional costumes of the opposite gender (UNDP and USAID 2014). There has been no debate attempting to acknowledge diverse gender and sexual identities in these religious societies (UNDP and USAID 2014).

Men who have sex with men (MSM) include those who identify as gay/homosexual and men who engage in sexual activities with men without self-identifying as gay. This includes male sex workers (MSW), bisexual men, and heterosexual men who have other partners (male

and/or female); and who may be married to a female. In Indonesia, MSM and waria are identified as key populations for STIs and HIV surveillance along with people who inject drugs (PWID) and female sex workers (FSWs) (Indonesia Directorate General of Disease Prevention and Control 2017).

The number of MSM in Indonesia, as estimated by the Indonesia Ministry of Health (2012), is around 1.2 million with more than 14,000 of these individuals living in Bali. The Bali AIDS Commission also estimated there were 650 waria living in this province (Bali AIDS Commission 2014). Sexually transmitted infections, especially Human Immunodeficiency Virus (HIV) infection, continues to be one of the major health problems worldwide with an estimate of more than 37 million people living with HIV (PLHIV) at the end of 2020 (World Health Organization 2021). Recent data shows Indonesia, with a total population more than 273 million in 2020, has an estimated number of PLHIV of 540.000, accounting for 0.4% of the global adult population prevalence (World Health Organization 2022). Among key populations in Indonesia, men who have sex with men (MSM) have the highest percentage of HIV infection (17.9% in 2020), while HIV prevalence amongst people who inject drugs and sex workers accounted for 13.7% and 2.1% respectively (World Health Organization 2022). There was an increase of HIV/AIDS amongst MSM from 2011 to 2016 in Indonesia, with this group being the second highest high-risk behaviour group after the heterosexual group. In 2015, the Indonesia Biological and Behavioural Survey (IBBS) found HIV prevalence amongst MSM in Denpasar was 36.0% (Indonesia Ministry of Health 2015). In Bali from 2011 to 2015, 20% of HIV cases were transmitted via homosexual and 76% heterosexual sexual activity (Indonesia Directorate General of Disease Prevention and Control 2017).

A study conducted in Bali in 2013 reported the prevalence of HIV amongst homosexual men and transgender women to be 18.7% and 40.9% respectively (Januraga, Wulandari et al. 2013). A more recent survey conducted in Bali amongst the MSM and waria communities (Indonesia Sexual Health Survey (SekSI) study 2018) found 20% of respondents (N=709) reported having had sex with female partners in the last six months in addition to their male partners. Of these, 48.6% had sex without condoms (Bavinton, Mahendra et al. 2019). The study also found that 15% and 28.1% of respondents had sex with sex workers and sex workers' clients respectively in the last 6 months with 48.1% and 42.2% of these practising condom-less anal intercourse (CLAI). Sex work was the main income for 44.6% of waria and 8.3% of MSM (Bavinton, Mahendra et al. 2019).

This study highlighted the risk of HIV and STI transmission among MSM due to the proportion of participants reporting multiple sex partners and unprotected sexual intercourse. MSM participating in this survey reported having sex with their female partners, with casual partners and with sex workers, highlighting the significance of sexual health risks outside the MSM community. While this study explored behaviours of MSM, data exploring the attitudes and socio-cultural experiences of MSM living in Bali were not collected. Research is needed to understand the attitudes, behaviour, and experiences of the unique MSM and waria population in Bali.

Before developing an appropriate and effective health promotion program, it is critical to understand the sexual risk behaviours among specific groups and barriers to practising safer sex behaviours. A general program cannot be assumed to be appropriate for all groups (Crisovan 2006, Safika, Johnson et al. 2014). Other research recommends the need to understand the socio-cultural aspects of safer sex practices to inform the development of STIs and HIV behaviour change strategies (Crisovan 2006, McKechnie, Bavinton et al. 2013). It is essential to understand the influence of community/social norms risk reduction on MSM behaviours (McKechnie, Bavinton et al. 2013). Understanding the attitudes, behaviours, and experiences of MSM and waria is necessary to inform the development of a culturally appropriate prevention program (McKechnie, Bavinton et al. 2013). This study focuses on MSM and waria because of their risky behaviours and the influence of Indonesian culture, which may increase the likelihood of experiencing stigma and negative judgement from the community (Rokhmah and Soedhirham 2015).

1.2 Aims and objectives

1.2.1 Aims of the study

This project explored the attitudes, behaviours, and experiences of MSM and waria in Bali using CEnR, with the aim to inform sexual health interventions for this population group.

1.2.2 Objectives of the study

The five objectives of this study were:

1. Explore factors that influence sexual health attitudes and behaviour among MSM and waria in Bali.
2. Identify enablers and barriers that influence safer sex behaviours among MSM and waria in Bali.
3. Develop a social model that conceptualises the sexual health attitudes and behaviour among MSM and waria in Bali in detail.
4. Explore experiences of MSM and waria in Bali including social-cultural aspects, stigma, discrimination, and mental health (psychological distress and happiness).
5. Provide recommendations for the development of strategies or interventions to improve safer sex behaviours among MSM and waria in Bali.

1.3 Significance of the study

This study led to the development of a specific model to describe the attitudes, behaviours, and experiences of MSM and waria in Bali. The research will also inform the development of guidelines to help address the issues based on the project's results and inform strategies for organisations working with MSM and waria to promote safer sexual health. There is a high prevalence of STIs, especially HIV, amongst MSM and waria in Bali. This is associated with the sexual behaviours of many MSM and waria, including heterosexual sexual activity. Preventable high-risk behaviours, such as condom-less sexual intercourse including condom-less anal intercourse (CLAI), impact STI and HIV transmission. While in some countries ARV treatment and prevention (for example pre-exposure prophylaxis/PrEP) are widely adopted among HIV positive and at risk HIV negative people (Chakrapani, Newman et al. 2015, Chuang and Newman 2018, Hammoud, Vaccher et al. 2019), this is not the case in Bali. For many communities, antiretroviral (ARV) medications for PrEP are inaccessible. To-date there is little research that has focused on understanding the complex associations between culture, expectations, and behaviours among MSM and waria in Bali. This study has adopted a CEnR approach to explore attitudes, behaviours, and experiences amongst MSM and waria in Bali including the social-cultural context. The use of sequential mixed methods design within this CEnR provides useful insights which can inform future research in other settings. In addition,

the mixed-methods design enables the exploration of different views and paradigms. The adoption of CEnR involves the community from the onset, enhancing research translation (Barkin, Schlundt et al. 2013, Rhodes, Tanner et al. 2018).

1.4 Study design

This study adopted a community-engaged research (CEnR) approach with moderate engagement of ten community members as research partners and employed a sequential mixed method design. Five phases comprised the study:

1. Phase one: partnership building with community members.
2. Phase two: initial exploration of attitudes, behaviours, and experiences of MSM and waria in Bali. This phase included focus group discussions with ten MSM and waria purposively recruited by research partners and in-depth interviews with purposively recruited public health experts to inform the development of the survey instrument.
3. Phase three: online survey administered to MSM and waria (N=416) living in Bali. Participants were recruited by the ten research partners.
4. Phase four: in-depth interviews with ten purposively sampled MSM and waria were conducted to gain deeper explanation, information, and clarification of some of the survey results, especially around life experiences, enablers, and barriers of safer sexual behaviours.
5. Phase five: dissemination of study findings and recommendations to stakeholders.

A detailed methodology is provided in Chapter 3 of this thesis.

1.5 Outline of the thesis

The following provides an introduction to the seven chapters in this thesis:

1. Chapter 1. Introduction

   Chapter one gives the general background on MSM and transgender women (waria) communities, STIs/HIV infection situation in Bali and Indonesia, and Bali as the study location. The aims and objectives of the study are also described in this chapter together with the significance of the study.

2. Chapter 2. Literature review

   Chapter two describes the relevant literature. The Chapter includes discussion about MSM and waria in general, as well as determinants of condom use attitudes and behaviours amongst these populations. Theories and models relevant to sexual attitudes and behaviours are discussed. This Chapter also includes a published scoping review of methodologies of stigma-related research in Asia Pacific low/middle income countries (LMICs) (Septarini, Hendriks et al. 2021). Strategies to reduce high-risk sexual behaviours and community-engaged research were also discussed in this chapter.

3. Chapter 3. Methods

   Chapter three is the methodology used in this study. A description of the study design, study settings, participants, sample size calculations, the data collection procedures, instruments, statistical analysis, and ethical considerations are provided. This chapter is also presented in a protocol paper which has been published in a peer-reviewed journal (Septarini, Burns et al. 2022).

4. Chapter 4. Building the partnership (Phase 1) and understanding the issues (Phase 2)

   Chapter four provides the processes and results of phase one and two of this research, which included building the partnership with the research partners and exploring the sexual health related issues experienced by MSM and waria communities living in Bali.

5. Chapter 5. Survey Results (Phase 3)

   Chapter five presents the results of phase three of this study (explanatory phase 1 - survey). This chapter includes one published paper (Septarini, Hendriks et al. 2021) and three submitted papers (under review).

6. Chapter 6. In-depth Interview Results (Phase 4)

   Chapter six provides the results and discussion of phase four of this research. Phase four (explanatory phase 2) comprised ten in-depth interviews with conveniently sampled MSM and waria.

7. Chapter 7. Dissemination (Phase 5): Conclusion, and Recommendations

   Chapter seven describes phase five of this research (dissemination). Key findings of the study, strengths and limitations, and recommendations are presented.

The research procedures of this thesis have been approved by Human Ethics Committees from Curtin University, Western Australia **(HRE 2019–0759)** and Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia (**No: 2521/UN14.2.2.VII.14/LP/2019)** (see Appendix B)**.**

Ethics approval confirmation (Appendix B); information sheet for respondent and survey instrument (Appendix C); information for respondent, in-depth interview short survey and guideline (Appendix D); and other relevant documents are presented in the appendices.

Chapter 2 Literature Review

2.1 Overview

This chapter comprises six sections which provide an overview of the current literature related to this thesis. The six sections are as follows:

1. Overview. This section provides an overview of MSM and waria in general including terms and definition, factors related to sexual behaviours amongst these communities as well as research available in this area.
2. Sexual behaviours. This section presents critical reviews on determinants of *high-risk* sexual behaviours including factors that influence condom use attitudes and behaviours amongst MSM and transgender women communities, especially throughout Asia and the Pacific countries.
3. Theories and models to understand the social-cultural context, sexual attitudes, and behaviours. This section focuses on theories and models to understand sexual attitudes and behaviours amongst MSM and waria communities, for example, the Health Belief Model (HBM), the Theory of Planned Behaviours (TPB), and the AIDS risk reduction model (ARRM).
4. Published paper: Methodology on stigma related research amongst MSM and transgender women. This section comprises a scoping review focusing on methodologies of stigma-related research amongst MSM and transgender people in Asia and Pacific low/middle income countries (LMICs).
5. Strategies to reduce high-risk and increase safer sexual behaviours. This section describes strategies to increase safer sexual behaviours including STI risk reduction, Anti-retroviral (ARV) based technique and pre-exposure prophylaxis (PrEP).
6. Community-engaged research (CEnR). The final section describes community-engaged research as a study design.

2.1.1 Men who have sex with men (MSM)

The term "MSM," commonly used in clinical settings, refers to men who have ever engaged in sexual activity with another man, regardless of their sexual orientation. Therefore an individual may be classified as MSM even though they identify as heterosexual (Center for Disease Control and Prevention 2021). MSM include those who identify as gay in addition to men who engage in sex with men without self-identifying as gay or transgender. This includes male sex workers (MSW), bisexual men, and heterosexual men who have other partners (male and/or female) or a wife.

Many factors have been associated with increased vulnerability to STIs infections among MSM including having multiple, anonymous, and concurrent partners (Center for Disease Control and Prevention 2021). MSM are also at a high risk for HIV infection as transmission risk is much higher for anal compared to penile-vaginal sex (Center for Disease Control and Prevention 2021). Moreover, in many settings, MSM are considered to be a vulnerable population, making the community vulnerable to criminalisation, stigma, discrimination, and violence. These vulnerabilities compromise their human rights and may compromise access to health services for STIs, and other important and essential services (World Health Organization 2022).

Research to help understand the prevalence and determinants of STIs/HIV among MSM has been conducted globally and in different settings (Berry, Go et al. 2013, Li, Wu et al. 2014, Assi, Abu Zaki et al. 2019). A study conducted in Vietnam amongst rural (Thai Nguyen) MSM found homosexuality was highly stigmatised in the general population which prevented a cohesive community from forming and made them difficult to find sexual partners, and this stigma affected the number of partners and level of sexual risk of this community as they need to find partners online or go to a major city to find MSM partners, while urban (Hanoi) MSM were allowed to explore their sexual identity, find their acceptance, and find partners in their urban social environment (Berry, Go et al. 2013). Research in Lebanon amongst MSM found increased odds of inconsistent condom use was associated with having only a school level education (Assi, Abu Zaki et al. 2019). Other studies have focused on the mental health and wellbeing of this community (Wohl, Galvan et al. 2013, Stahlman, Grosso et al. 2015, Desyani, Waluyo et al. 2019). For example, a study amongst Latino and African American MSM found HIV stigma and MSM stigma felt by the MSM were associated with depression (Wohl, Galvan et al. 2013); while Stahlman, Grosso et al. (2015) found depression was positively related with social stigma experienced as a result of being MSM in Lesotho.

Several studies have explored HIV and stigma among MSM in Indonesia (Butt 2013, Culbert, Earnshaw et al. 2015, Aggarwal, Yu et al. 2018, Cempaka, Wardhani et al. 2020, Johnston, Soe et al. 2021). Johnston, Soe et al. (2021) found HIV infection in urban Bandung (West Java) MSM was associated with being aged 20–24 years, having a steady partner, and preferring the receptive position during sex. Fear of gossip and stigmatization amongst HIV positive people in highlands Papua had hindered their ability to visit health services. Mixed-method research conducted amongst HIV positive prisoners in Indonesia found higher HIV stigma for those with drug-related offenses, those who were seeking help to decrease their drug use, those who were HIV positive before they were incarcerated, and those who had not disclosed their HIV status to family and friends (Culbert, Earnshaw et al. 2015). Another study amongst MSM living in Jakarta found condom use was influenced by depressive symptoms, history of physical abuse during childhood and adulthood, level of education, type of partners, and the use of club drugs before sex (Safika, Johnson et al. 2014). To date, no published research has explicitly explored the interaction of attitudes, behaviours, and experiences of MSM in Indonesia.

2.1.2 Transgender women (waria)

The term “cisgender” refers to an individual who adopts the gender identity they were assigned at birth while transgender refers to an individual who adopts a gender identity that differs from the sex they were assigned at birth (Center for Disease Control and Prevention 2019). Transgender women are born with male anatomy (assigned male sex at birth) but identify as female (Center for Disease Control and Prevention 2021). Gender identity is independent of sexual orientation, and transgender persons have diverse sexual identities (Center for Disease Control and Prevention 2021). Transgender persons might have sex with cisgender or other transgender people (Center for Disease Control and Prevention 2021). Transgender women in Bahasa Indonesia are commonly known as **waria.** This phrase is specific to Indonesia and comes from the combination of words **wa**nita (woman) and p**ria** (man). More recently the term transpuan is also used.

These terms are similar to transgender women or “male transvestite” (Boellstorff 2004). The waria term has a range of different explanations (Boellstorff 2004). As stated by Dede Oetomo (2000), approximately 20 years ago, waria did not only include “men who imitate women in their clothing styles or mannerisms while retaining a masculine identity,” but had a wider definition based on Indonesian cultures. In some parts of Indonesia, waria even belong to the third gender (Oetomo 2000), and they are assigned as men in many parts of Indonesia including in Bali (Boellstorff 2004).

Social scientists and others have defined waria as males who become, and dress like, females. Many waria work in the entertainment industry; for example: hairdressers, make-up artists, fashion designers, or sex workers (Ford, Wirawan et al. 1993). The WHO acknowledges waria as a specific indigenous term in Indonesian culture “to describe people who form same-sex relationships and those who exhibit non-binary gender identities” (World Health Organization 2016).

Transgender women overall, including waria in Indonesia, report difficulty in accessing health services due to a range of issues such as legal barriers, violence, stigma and discrimination (World Health Organization 2022). Transgender people may experience violence, family rejection, violation of their education, employment, and social protections rights which in turn increases unemployment, social insecurity, and poverty. A lack of legal recognition further contributes to their marginalisation (World Health Organization 2022).

2.2 Sexual behaviours

2.2.1 High risk and low risk sexual behaviours

MSM and waria are identified as key populations for STIs and HIV surveillance in Indonesia, along with people who inject drugs (PWID) and female sex workers (FSWs) (Indonesia Directorate General of Disease Prevention and Control 2017). HIV/AIDS cases in 2019 accounted for 22% of reported AIDS cases in Indonesia (Ministry of Health Indonesia 2020).

The Indonesia Health Profile 2020 estimated the total number of HIV positive individuals in Indonesia was 543,100 people; 67% of these cases were men (Indonesia Ministry of Health 2021). In 2019, MSM and transgender/waria in Indonesia were estimated at 505,986 and 34,695 people respectively (www.aidsdatahub.org 2022). The HIV prevalence amongst MSM and waria in Indonesia from 2018 to 2019 was 17.9% and 11.9% respectively (www.aidsdatahub.org 2022). Of 17.9% of HIV prevalence amongst MSM in Indonesia, 42.1% live in Bali (38.1% live in Denpasar City and 4% live in Buleleng Regency) (www.aidsdatahub.org 2022). In Bali from 2011 to 2015, 20% of HIV cases were transmitted via homosexual and 76% from heterosexual sexual activity (Indonesia Directorate General of Disease Prevention and Control 2017). These findings are consistent with a previous study conducted in Bali, which reported that the prevalence of HIV amongst gay men was 18.7% and among transgender was 40.9% (Januraga, Wulandari et al. 2013).

2.2.2 Determinants of high-risk sexual behaviours

A range of factors influence sexual health behaviours amongst MSM and waria. To date, some studies have confirmed several influencing factors associated with condom-less sexual activities. Research conducted in Vietnam found several barriers associated with condom use

amongst MSM. For example, being seen with a condom was thought to indicate promiscuity ("access barrier") (Mimiaga, Reisner et al. 2013). This study also found respondents perceived that condom use reduces pleasure during sexual intercourse ("usage barrier") (Mimiaga, Reisner et al. 2013). A cross-sectional study in Jogjakarta, Indonesia, revealed that, even though condom use was increasing for sexual activity in the last anal sex with non-regular partners, waria tend to report lower condom use in the last anal sex with their regular partner (Praptoraharjo 2011). Similarly, a study conducted in Jakarta among MSM and waria revealed condom-less sexual activities with regular partners was common (Safika, Johnson et al. 2014). The regular partners of waria and MSM may also have other partners outside the primary relationship. In his study, Crisovan (2006) revealed that partners of waria tend not to use condoms because engaging in sexual activity with waria is not considered to "be having sex." This is because the definition of sex for some people within Indonesian culture means that the "penis enters a vagina" (Crisovan 2006). Further, there was also a belief that having a sexual relationship with waria is not considered to be homosexuality because waria are not seen as male. Therefore, when a male husband has a sexual relationship with waria, it is not considered cheating because the waria is a male as well (Crisovan 2006). This phenomenon needs to be explored in greater depth to inform strategies and interventions to increase safer sex behaviours especially amongst bisexual men.

A study of the gay *komunitas*[1] in Denpasar, Bali found while some members of the *komunitas* were motivated to consider safer sex options due to the availability of free counselling, HIV testing and materials for safer sex, for others, HIV/AIDS has resulted in a more connected and empowered community. The study found work, socialization, and their love life, in addition to discrimination and isolation, were the issues most were consumed with. Consequently, condom use was often forgone, especially in the heat of the moment (Ramonès 2015). Furthermore, lower condom use amongst MSM and waria in Jakarta was found to be significantly related to depression and physical abuse experiences in childhood and adulthood, while more condom use was associated with a higher level of education (Safika, Johnson et al. 2014).

[1] *Komunitas* is not an exact translation of 'community'. Ramones (2015) has used this term to describe respondents who identify as gay and belonging to the *komunitas,* highlighting that the *komunitas* is not juts associated with sexual orientation or gender identity, but friends, social connections and places of socialisation.

2.3 Theories and models to understand the social-cultural context, sexual attitudes, and behaviours

Theoretical models have been used globally to better understand the context of high-risk sexual practices amongst diverse populations. These include the Health Belief Model (HBM) (Rosenstock 1974), Theory of Planned Behaviours (TBP) (Ajzen 1991), and Social Cognitive Theory (SCT) (Bandura 1991). Wulfert, Wan et al. (1996) conducted research amongst gay men that applied these three theories. This research suggested a significant part of the disparity in CLAI could be clarified by conceptually analogous constructs common to these models (Wulfert, Wan et al. 1996). A meta-analysis of articles that focused on the TPB determined that the model is useful to help understand the process of condom use amongst the MSM population (Andrew, Mullan et al. 2016). Twenty four percent of the variance of condom use could be explained by attitude, subjective norms, and perceived behavioural control, while 12% of the variance was associated with perceived behavioural control and intention (Andrew, Mullan et al. 2016). Subjective or social norms refer to the normative belief of situation and how one is expected to behave by a significant person or a group of people (Wulfert, Wan et al. 1996, Kok, Hospers et al. 2007). A study in the Netherlands amongst MSM found that attitude, subjective norms and perceived control accounted for 55% of the intention of condom use (Kok, Hospers et al. 2007).

The AIDS Risk Reduction Model (ARRM) developed by Catania, Kegeles et al. (1990) is a modification and integration of several behavioural models, including the HBM. The ARRM focuses on social and psychological factors and includes three stages: problematic high-risk behaviours (labelling stage); developing a commitment to change the behaviours into positive responses (commitment stage); and defining and identifying strategies and actions to address the problem (enactment stage). The model is useful where low-risk behaviour is already practised, whereby it helps maintain low-risk behaviours and avoid high-risk action. The ARRM helps understand why people do not to practise specific positive behaviour. Several factors that were found to contribute to low-risk sexual behaviour include knowledge, perceived susceptibility, self-efficacy level, emotional status, and social aspects (including peer support, communication and norms) (Catania, Kegeles et al. 1990). Another study utilised ARRM to help understand HIV risk behaviour and sexual behaviour change among adult gay and bisexual

men in New York (Gillis, Meyer-Bahlburg et al. 1998). The research found the commitment stage, including sex guilt, safer sex intention, efficacy and self-deception, were crucial aspects to consider when measuring sexual behaviours among gay men in urban areas (Gillis, Meyer-Bahlburg et al. 1998). A study of Indian truck drivers (n = 90) explored initial commitment to PrEP and circumcision for HIV prevention (Schneider, Dandona et al. 2010). This study, which used in-depth interviews, found ARRM can be used by peers, health care professionals, and public health workers to identify risk perception, cultural belief related to doctors and medication, and barriers of the interventions (PrEP and circumcision) (Schneider, Dandona et al. 2010). Another study in Ghana that adopted ARRM found stigma, stereotyping, and blaming influenced unsafe sexual behaviours among men over 15 years of age. Those practices made men feel at lower risk of contracting HIV/AIDS resulting in them taking fewer precautions. However, this research suggested longitudinal or intervention studies were needed to enable definite conclusions (Riley and Baah-Odoom 2010).

Other research has aimed to develop a gender affirmation framework to understand the risk behaviours amongst a particular community. A study conducted in San Francisco revealed a specific framework conceptualised for high-risk and risky body modification behaviour amongst transgender women of colour (Sevelius 2013). This framework was called a concept of gender affirmation which is the centre of high-risk behaviours amongst the transgender community in San Francisco (Sevelius 2013). This study found higher levels of engaging in risky body modification procedures (street hormone and injection silicone use) may be predicted by comparing a transwoman's body to nontrans women or other transwomen. These theoretical models informed stages of this project; for example, TPB and ARRM were used in the development of the survey instruments for phase three of this project.

2.4 Published paper: Methodology on stigma related research amongst MSM and transgender women

A scoping review focusing on methodology of stigma-related research was conducted to review and critique methodologies and measurements employed in research with MSM and transgender people communities. The peer-reviewed publication was published in *Frontiers in Reproductive Health* in October, 2021.

Septarini NW, Hendriks J, Maycock B, Burns S. Methodologies of stigma-related research amongst men who have sex with men (MSM) and transgender people in Asia and the Pacific low/middle income countries (LMICs): A scoping review. Frontiers in Reproductive Health. (2021):73

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Methodologies of Stigma-Related Research Amongst Men Who Have Sex With Men (MSM) and Transgender People in Asia and the Pacific Low/Middle Income Countries (LMICs): A Scoping Review

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Much stigma-related research focuses on marginalized populations, including men who have sex with men (MSM) and transgender people. The importance of research in this area is widely recognized, however methodologies and measures vary between studies. This scoping review will collate existing information about how stigma-related research has been conducted in low/middle income countries (LMICs) within the Asia Pacific region, and will compare research designs, sampling frameworks, and measures. Strengths and limitations of these studies will inform recommendations for future stigma-related health research. A methodological framework for scoping studies was applied. Searches of Psych INFO, Scopus, ProQuest, Global Health and PubMed were used to identify articles. Stigma-related research amongst MSM and transgender communities, published between 2010 and 2019 in LMICs within the Asia Pacific region were included. A total of 129 articles based on 123 different studies were included. Of the 129 articles 51.19% (*n* = 66) were quantitative; 44.96% (*n* = 57) were qualitative and 3.88% (*n* = 5) were mixed methods studies. The majority of studies (n = 57; 86.36%) implemented a cross sectional survey. In-depth interviews (*n* = 20, 34.48%) were also common. Only 3.88% of studies utilized mixed-methods design. Non-probabilistic and probabilistic sampling methods were employed in 99.22 and 0.78% of studies respectively. The most common measures used in quantitative studies were the Center for Epidemiological Study on Depression (CES-D) (*n* = 18) and the Self Stigma Scale (SSS) (*n* = 6). Strengths and limitations proposed by researchers included in this review are summarized as lesson learnt and best practices in stigma-related research.

Keywords: culture, discrimination, health, methodology, MSM, stigma, transgender

INTRODUCTION

Men who have sex with men (MSM) and transgender communities have been a focus of sexually transmissible infection (STI) prevention in many countries (1–4). These communities may experience a range of social, economic, legal and cultural barriers in accessing physical and mental health interventions especially in low and middle income countries (LMICs) where homosexuality is not legal (5–11). A diverse range of factors contribute to these barriers with stigma and discrimination being significant influences (12). Addressing stigma and discrimination amongst vulnerable communities is challenging.

While there is a body of global research focusing on stigma, the nuances of research with MSM and transgender people are complex. There are a range of factors that can affect the quality of research conducted in this population. In some countries, particularly where homosexuality is not accepted, cultural norms impact stigma and discrimination (6, 13). Therefore, research with MSM or transgender people, especially if Human Immunodeficiency Virus (HIV) infection status is an area of interest, can be problematic. When collecting sensitive data from potentially vulnerable populations it is an ethical imperative that researchers balance potential harms with anticipated benefits.

To date, there is no robust summary or resource detailing methodologies employed for stigma-related research in the context of MSM or transgender populations throughout the Asia-Pacific. Therefore, the focus of this study is to review study designs, sampling frameworks, and specific measures used by researchers from LMICs in this region during the past decade to inform future research. LMICs have been selected as focus in recognition of the different approaches that may be employed in high income countries (HICs) due to differing traditional beliefs and levels of stigma (14). Methodologies undertaken in low-resource settings will also be explored. This review does not intend to determine whether specific methods or measures are more appropriate and accurate than others, as research with marginalized groups are often requires a nuanced approach. This study aims to review/identify research designs, sampling methods and measurements employed in stigma-related research with MSM and transgender communities in LMICs in the Asia- Pacific region and to explore similarities and differences between countries and between population groups (either MSM/transgender or HIV positive/HIV negative). This review addressed three specific questions as follows:

1. What research designs and sampling methods have been used in stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region?
2. What measures have been used in stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region?
3. What are the reported limitations, ways to increase strengths and overcome limitations of research methods, sampling methods and measures of the studies focusing on stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region?

It is intended the review will provide a reference for future research in the area of stigma amongst MSM and transgender people in LMIC in the Asia-Pacific. This review paper has followed the PRISMA extension for scoping reviews (15).

MATERIALS AND METHODS

The PRISMA extension for Scoping Reviews (PRISMA-ScR) was employed to provide guidance for this review (15). The five-stage methodological framework for scoping reviews suggested by Arksey and O'Malley (16) was followed. Stages include: (i) identify the research question; (ii) identify relevant studies; (iii) paper selection and screening; (iv) data charting; and (v) collate, summarize and report the results. The following provides a description of each stage:

Identifying the Research Question

Three specific research questions as described in the introduction were identified.

Identifying Relevant Studies

Relevant studies from empirical peer-reviewed research articles that examined stigma, discrimination, culture, and health of MSM and transgender communities within the Asia Pacific region-LMICs were identified, retrieved and evaluated.

Paper Selection and Screening

Search Strategy

Eight searches of peer-reviewed manuscripts published from 2010 to 2019 were conducted between May and July 2020 using five databases: Psych INFO, Scopus, ProQuest, Global Health and PubMed. Searches included terms related to (1) "stigma" (2) "discrimination" (3) "culture" (4) "Asia and Pacific countries", including all countries with this classification based on UNDP in Asia and the Pacific. **Supplementary Material 1** of search strategy planner includes all the list of terms that searched in the databases.

Inclusion Criteria

Inclusion criteria were peer-review publications which included:

1. an English language abstract;
2. full-text available;
3. research conducted in the Asia-Pacific region (based on the World Health Organization categorization that includes 48 countries) (17).

Exclusion criteria were applied at two stages and included initial screening by title and abstract followed by screening by full text. Exclusion criteria included:

1. Studies conducted in HICs in the Asia Pacific region based on the World Bank categorization (Singapore, Brunei Darussalam, Japan, Korea, Taiwan, Northern Mariana Island, Australia, and New Zealand) (18);
2. Studies not assessing at least one of these categories: health outcomes associated with stigma, discrimination or culture;

3. Editorials, letter to editor, letter, book reviews, systematic/scoping reviews; and
4. Studies including population groups other than MSM and/or transgender people.

Publications were imported into Endnote by NS. Article titles and abstracts were initially screened against the inclusion and exclusion criteria. Two authors, SB and JH were continued to screen the Endnote file based on titles, duplication, and full text availability. All authors discussed final inclusion at this stage.

Charting the Data

Data were mapped in Excel. The extract data information recorded included: full references, year of publication, country of origin, study design, sampling method(s), number of study participants, study participants, study focus/objective(s), variable(s) measured, measure(s) or scale (s) used, main finding (s), outcome(s), limitation(s), and recommendation(s). **Supplementary Material 2** includes all the list of information recorded. Data was extracted by the first author (NS) and cross-checked by all other authors. Following data extraction, it became apparent an individual research project may have resulted in multiple articles. All related articles were included if they met the inclusion/exclusion criteria.

Summarizing and Reporting the Findings

A "Narrative review" was used to gather similar and different information on all papers to generate a holistic comparison (19). The results presented summary of articles, research methods, and measures that have been used as well as reported limitation of research methodologies.

RESULTS

Initially 1,544 potential articles were identified. A total of 816 relevant articles were included after screening based on titles, removing 725 studies. Duplicates were removed (n = 209) and full-text was not available for a further 20 articles. Of the 590 remaining publications, articles were removed due to country, population groups, focus of the paper, type of article, and year of publication. A total of 129 articles, based on 123 studies were considered eligible and included in this review. The six articles including studies already described, presented different and important information in each article hence we included in the analysis. **Figure 1** details the PRISMA study selection process.

Articles' Characteristics

Figure 2 shows that stigma-related research publication in Asia-Pacific LMICs increased during the 2010–2019 period. Stigma-related research among MSM and transgender communities constitutes a growing body of literature, with 66.7% (n = 86) of included articles published between 2015 and 2019 compared to around one third (33.3%) from 2010 to 2014.

Of the 40 LMICs in the Asia Pacific region, research meeting the criteria of this review came from 16 countries. The majority of eligible studies were conducted in China (n = 58, 44.96%), India (n = 26, 20.16%), Vietnam (n = 11, 8.53%), and Thailand (n = 9, 6.98%). Forty-one studies (31.81%) were conducted in the South-East Asia region. **Figure 3** provides a summary of country of origin.

Table 1 provides a descriptive overview of included study characteristics. Our first research question focused on research designs and sampling methods that have been used in stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region. Study designs employed quantitative, qualitative and mixed method methodologies. Of the 129 articles included in this review, 66 (51.16%) were quantitative. For most studies (n = 57, 86.36%), a cross sectional survey was employed. Other methods (n = 9, 13.6%) included trial research, cohort/longitudinal studies, and community-based studies. Qualitative methodology was also common, allowing researchers to explore experiences without drawing any inferences about population-wide trends (21). Common methods employed by the 58 (44.96%) qualitative articles included in-depth interview (n = 20, 34.48%) and use of both in-depth interview and focus group discussion (FGD) (n = 19c, 32.76). Other methods are described in **Table 1**. Only five (3.88%) articles employed a mixed methods design, with all of these studies employing quantitative-cross sectional survey and qualitative- in-depth interview or FGD. All mixed method studies in this review utilized this explanatory design. For example, a study conducted in India analyzed a rapid survey (n = 247) and subsequently conducted five focus group discussions with married MSM in order to obtain a better understanding of issues like stigma, discrimination, and fear of disclosure in the family (22). Triangulation of the survey data was also conducted by Li et al. (23) when conducting FGD and interviews after the quantitative data collection with different participants. Moreover, Chakrapani et al. (24) conducted in-depth interviews and FGDs to explore barriers to disclosure of HIV status which were initially identified from their quantitative survey.

While differentiating types of sampling methods, sampling methods are considered to be probabilistic or non-probabilistic (25). The majority of studies (99.22%) in this review employed non-probabilistic sampling methods including convenience/consecutive, purposive, snowballing/respondent-driven sampling (RDS), and multiple sampling methods. Non-probability sampling is useful when random sampling is not possible to conduct, such as when the population is large or hidden (26). Nearly a quarter of studies (18%; n = 22) employed multiple sampling methods.

Convenience and consecutive sampling was the most common methods employed in this review. Twenty four articles used convenience/consecutive sampling. Most of these were conducted at health care settings or at places where consultation, testing, and treatment was available (27–32). This method was widely used as random sampling was not usually feasible (8, 33–37) and some helped by non-governmental organizations (NGOs)/community-based organizations (CBOs) staff (12, 38–48). Limitations associated with the use of convenience/consecutive sampling recruitment included that the sampling may not reach all subpopulations and the study may lack the intended diversity (21, 49). However, using recruiters with diverse social-demographic networks may alleviate this (21).

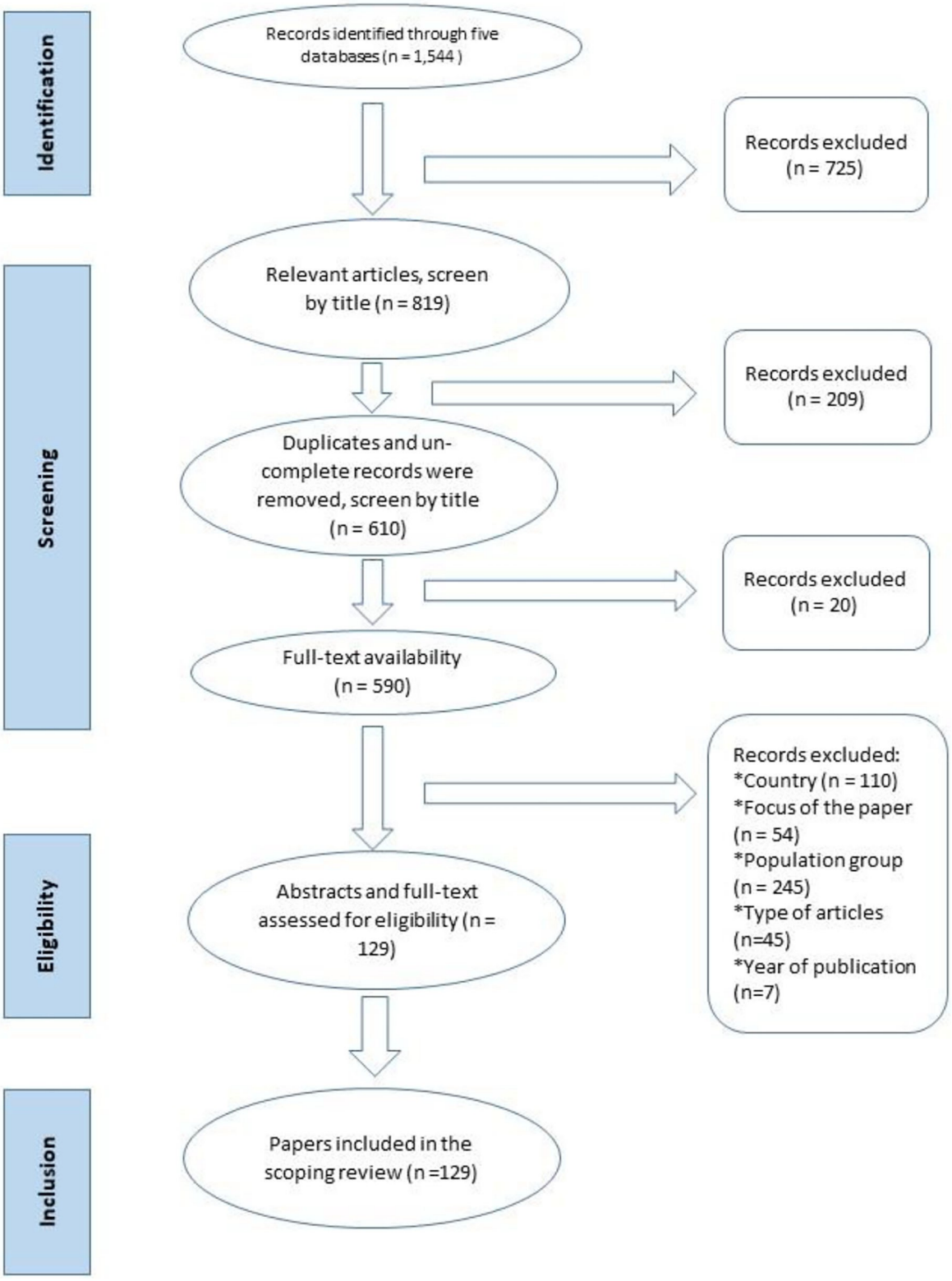

FIGURE 1 | PRISMA flow diagram of scoping review stages based on Arksey and O'Malley (16).

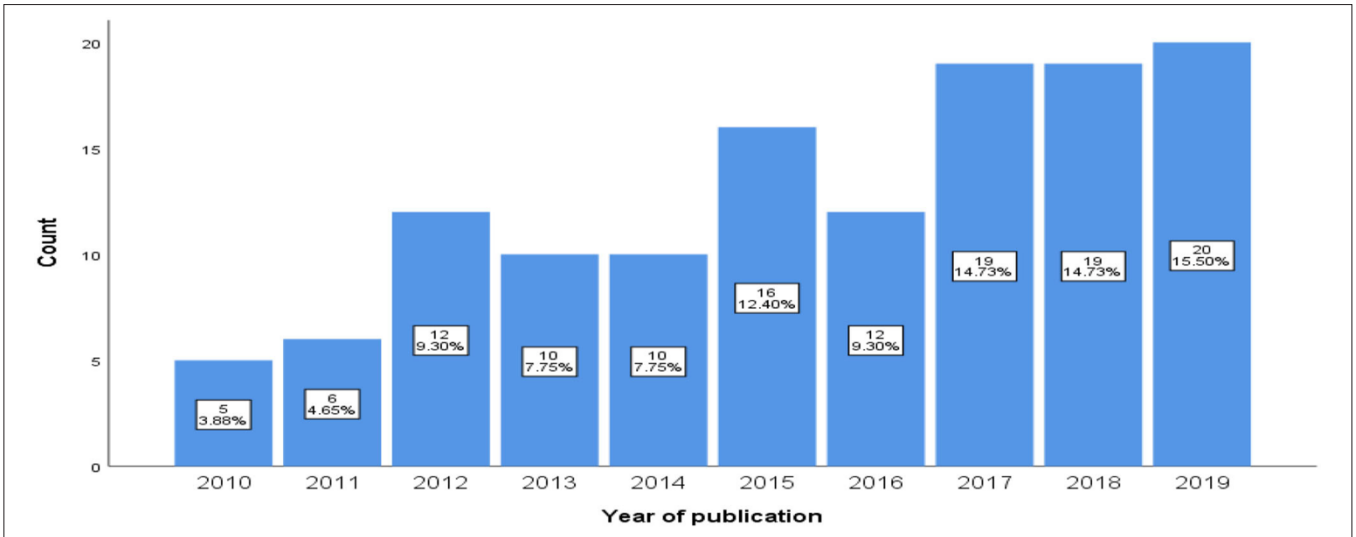

FIGURE 2 | Number of studies and year of publication.

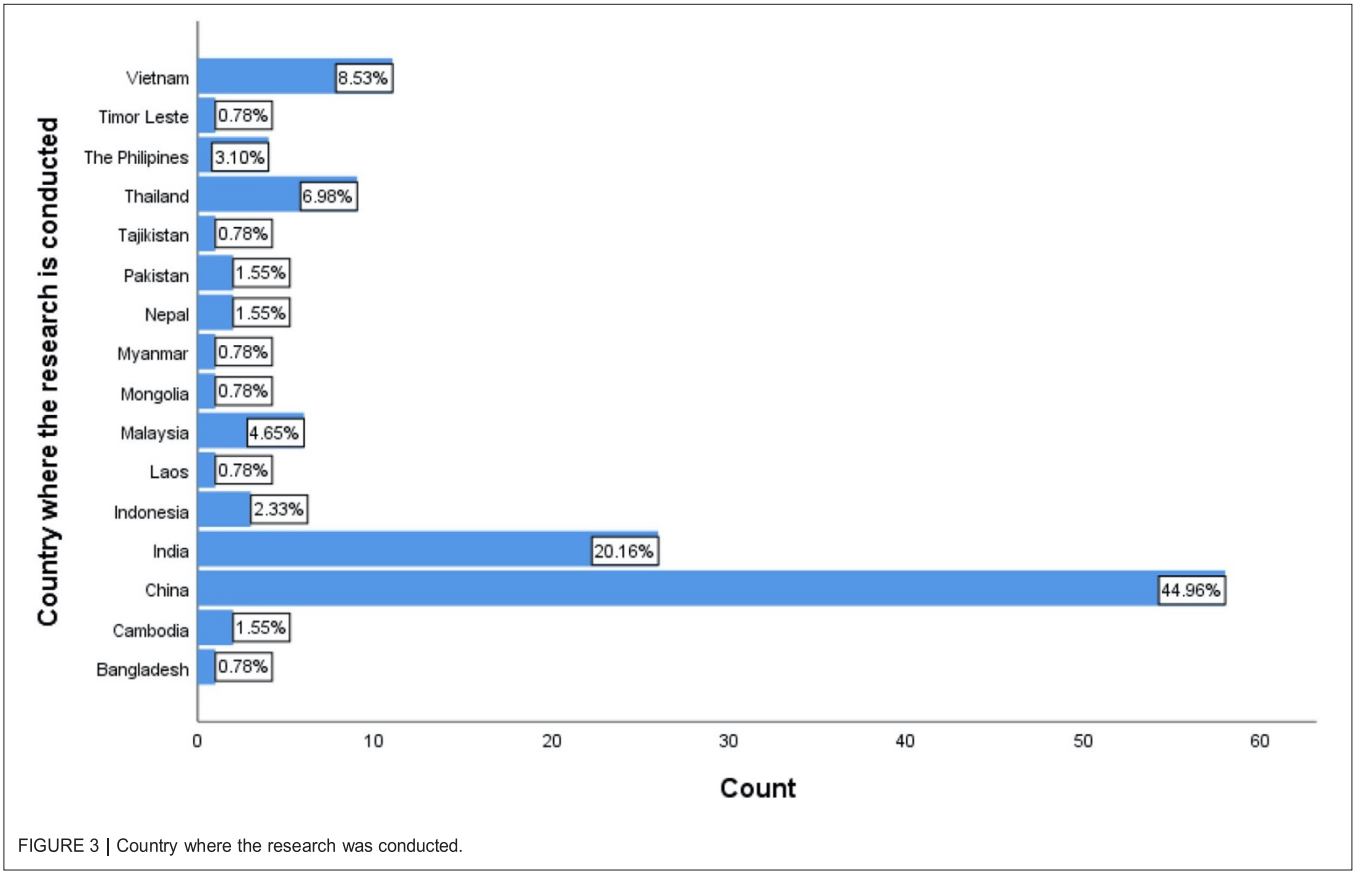

FIGURE 3 | Country where the research was conducted.

Moreover, this sampling framework makes it difficult to achieve a representative sample, thereby limiting the generalizability of the findings (50, 51).

Purposive sampling which enables researchers to recruit participants with specific characteristics or obtain more specific data from a particular group (26), was used by 27 (21.09%) articles in this review. Purposive sampling is commonly used at the explanatory phase of research when the current research is seeking deeper explanation about specific issues. For example, this sampling method was used to understand why

TABLE 1 | Overview of study characteristics.

Variable				*N* (%)	*N* (%)
1	Study design				
		Quantitative study			66 (51.16)
			Cross sectional survey	57 (86.36)	
			Trial	4 (6.06)	
			Cohort prospective / longitudinal study	3 (4.54)	
			Community based study	2 (3.03)	
			Total	66 (100)	
		Qualitative study			58 (44.96)
			In-depth interview	20 (34.48)	
			Semi-structured interview	3 (5.17)	
			FGD	2 (3.45)	
			In-depth interview & FGD	19 (32.76)	
			In-depth interview & Community based study	1 (1.72)	
			In-depth interview, FGD, & Community based study	3 (5.17)	
			In-depth interview & field work observation	1 (1.72)	
			Life story/life history	3 (5.17)	
			Case series	1 (1.72)	
			Ethnographic study	2 (3.45)	
			Ethnographic, participant observation, community based study	1 (1.72)	
			Phenomenological study	1 (1.72)	
			In-depth interview & phenomenological study	1 (1.72)	
			Total	58 (100)	
		Mixed methods study			5 (3.88)
			Cross sectional survey & in-depth interview	1 (20.00)	
			Cross sectional survey & FGD	1 (20.00)	
			Cross sectional survey, in-depth interview, & FGD	3 (60.00)	
			Total	5 (20)	
		Total			129 (20)
2	Sampling method				
	Probabilistic (random sampling)				1 (0.78)
	Non-probabilistic				128 (99.22)
		Convenience/Consecutive sampling		24 (18.75)	
		Purposive sampling		27 (21.09)	
		Snowball sampling/Respondent-driven sampling (RDS)		24 (18.75)	
		Multiple methods (using more than one method)		31 (24.22)	
		Other methods (i.e., NGOs-driven sampling, theoretical sampling, online recruitment, referral, phone recruitment, ethnographic technique)		22 (17.19)	
		Total		128 (100)	
		Total			129 (100)

transgender women and same-sex-attracted men have intimate sexual relationships with "mane-forte" (straight-identifying men) in Timor-Leste enabling recruitment of specific population groups (52).

MSM and transgender communities may be inter-linked but in hard-to-reach or hidden networks, hence 24 (%) studies employed snowball sampling or RDS technique to reach, recruit, and interview the participants. This non-probability sampling technique is effective when recruiting participants from populations which may be stigmatized and/or hidden (53). Snowball sampling involves researchers asking participants they have recruited to tell their peers about the research (54). This method enables the researcher to get referrals from colleagues/staff working in organizations that may work with MSM and transgender community in addition to referrals from current research participants (55). When using snowball sampling the researchers do not need to know from where participants obtain the referral/information about the study,

however this information is important when using RDS (56). RDS was employed in an Integrated Biological and Behavioral Surveillance (IBBS) in Vietnam which recruited 399 MSM (57). "Seeds" who were part of the intended target population were initially identified and recruited by the member(s) of CBOs or NGOs working with the network in order to ensure a broad diversity of socio-demographic characteristics and geographic area representation (57).

There are a number of limitation associated with RDS: firstly, the actual proportion of refusal (non-response bias) cannot be assessed therefore response rates cannot be accurately calculated. Secondly, due to overlapping peer groups, sexual or social networks among the "seed" several recruiters may recruit the same people (57). Thirdly, "seeds selection" bias could occur, which might require a substantial RDS adjustment (57). There are potential concerns regarding selection bias as some groups/networks may remain underrepresented (57). Recruiting participants from disadvantaged populations is not always easy. Studies revealed that MSM and bisexual communities are often reluctant to participate in research due to confidentiality issues (58), resulting in a more non-representative sample.

Thirty-one papers in this review used multiple sampling methods during recruitment to increase representativeness of the research population and generalizability of findings [e.g., (59–61)]. These recruitment methods include outreach work by peer educators or NGO staff, community outreach, venue- based recruitment, and internet advertisements, and web-based recruitment (37, 60). However, these methods were not always successful in recruiting MSM and transgender people as these groups are often difficult to reach, making convenience sampling and RDS a preferred option (62). This method was widely used as random sampling was not usually feasible (36).

Sampling Framework

The sample size of the studies varied widely **Supplementary Material 3**. For quantitative studies, sampling size ranged from 10 (63) to 1,375 participants (64, 65), whereas qualitative study samples ranged from 10 (66) to 363 participants (67). Samples for mixed methods studies ranged from 60 (68) to 1,178 participants (10). Participants included MSM, gay men, male sex worker (MSW), mixed (lesbian, gay, bisexual, transgender, LGBTI) identities, transgender women, HIV + MSM, and key informants. Key informants were commonly stakeholders or staff from NGOs or CBOs working with MSM and transgender communities as well as health staff working in MSM-related health services. Young MSM and transgender youth under 18 years were specifically targeted in six studies.

Variables and Measures

This review explored measures used in stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region. Included studies used a range of different measures to assess stigma, discrimination and related behaviors, and health. While some researchers developed their own measure, others used previously developed and/or validated measures. When using validated measures, the majority of researchers also calculated Cronbach's Alfa coefficient to determine internal consistency of each measure amongst participants. Cronbach's Alpha coefficient for various measures ranged from 0.60 (questionable) (69) to 0.99 (excellent) (70). Some studies did not report Cronbach's Alfa coefficients.

A range of different measures were employed (see **Supplementary Material 4**). When measuring depression or depression symptoms, the Center for Epidemiological Studies Depression (CES-D-20) scale was most widely used (71). This measure was used by 12 studies in five different countries including China (41, 55, 72–74), India (48), Nepal (50), Vietnam (75), Cambodia (64, 65). Four studies in this review used this shorted version (CES-D-10) (35, 61, 76, 77). Another short version of this measure, the CES-D 12, was used in China by Nehl et al. (78) and Huang et al. (79).

Researchers suggest to not to employ the CES-D measure as a diagnostic tool, however this measure can be used as the basis for screening and determining the need for further mental health clinical assessment (80). Therefore there is the possibility that data from the CES-D may misrepresent actual prevalence of depression disorders in the population (80). Symptoms of depression might be under-estimated in regions where the behaviors are highly stigmatized (80). Since the measure is a self-report instrument, there is also the possibility of misclassification bias due to social desirability (74).

Stigma among in MSM and transgender communities was measured using a number of self-report tools (**Supplementary Material 4**). To assess internalized stigma (self-stigma), six studies used either the Self-Stigma Scale (SSS) (81) or the SSS-short version (30, 41, 51, 70, 74). The SSS was developed by Mak et al. (82) after FGDs with groups, comprising LGBT individuals, people with communicable diseases, migrants, and people with mental health problems (82). The original measure, comprises 39 items including affective, behavioral, and cognitive items (83). Each item uses a 6-point scale from strongly disagree [1] to strongly agree [6] (82). However, many studies selected the short nine-item SSS-S version that only captures a subset of affective, behavioral, and cognitive responses (83). The Self-Stigma Scale—Short Form (SSS-S) was used by researchers in China (41, 51), India (23), and the Philippines (70) (n = 5).

The Internalized Homophobia Scale, adapted from Meyer (84) was used in four Chinese studies (61, 85–87). Other measures of stigma included the Internalized Shame Scale, also originally developed by Meyer (84) which was used in one Malaysian study [Brown et al. (88)], and the Rosenberg Self Esteem Scale (58) which was used in one study in China (72).

When assessing other types of stigma including gender-conformity, sexual, and HIV-related stigma, research in LMICs in the Asia and Pacific used a range of measures including the Transgender Identity Stigma Scale (TGISS) in India (38, 89, 90); and The Gender Non-Conformity Stigma Scale (GNCSS) also in India (38, 90). The Stigma Consciousness Scale developed by Pinel (91) and the Sexual Compulsivity Scale were used by Xu et al. (87) in study among HIV+ MSM conducted in China.

Research in India used the HIV-related Stigma Assessment scale in research with transgender women (44, 92). In China, several scales to measure HIV-related stigma amongst HIV positive MSM have been used. For example, the Steward's HIV stigma scale was used in research focusing on the relationship between stigma and depression (93), while Li et al. (94) used the Berger's HIV Stigma scale in a HIV-related stigma study. The HIV/AIDS related stigma and discrimination scale was used by Fan et al. (95). Furthermore, the AIDS-related Stigma scale was also used in China on research focus on the impact of homophobia and HIV-related stigma focusing on the uptake of HIV testing (76). While many studies as mentioned employed a validated measure in assessing stigma amongst MSM, a study conducted in China measured three indicators of stigma: internalized, anticipated, and enacted stigma using their own developed instrument (55). In addition to mental health and stigma measures, other measures to assess self-esteem, social support, stress, resilience and coping, and alcohol use were also employed (**Supplementary Material 4**).

Reported Limitations

The review also aimed to discuss the reported limitations, ways to increase strengths and overcome limitations of research methods, sampling methods and measures of the studies focusing on stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region. A number of limitations related to study designs, sample size, and sampling recruitment methods were identified by authors. Nearly 30% of studies (n = 39) discuss the nature of cross-sectional research design as a research limitation. Researchers reported results with caution, especially when making any causal inferences (3, 37, 72, 87, 96). Several studies reported associations rather than the ascertainment of causal relationships or determine the causality of the statistically significant associations between variables (28, 29, 38, 62, 97). This design also undermines the ability to draw conclusions about causality on the evidence (41, 50, 77, 81, 89, 98). However, researchers acknowledge the possibility of other directional associations between the variables of interests in the study (30). Moreover, in order to mitigate the use of cross-sectional design, researcher suggests to add some qualitative research insights (49).

Nearly 10% (n = 12) of studies discussed the nature of qualitative research as a study limitation. Data saturation is a critical consideration in qualitative research. In order to reach data saturation, certain number of participants are needed. Studies conducted in China reported since the sample size was small, and authors identified saturation was not achieved [n = 10 (63) and n = 14 (5)]. Other research analyzed only 26% of all data collected (39 interview transcripts/149 interviews) due to saturation in themes (99).

The majority of studies were either exploratory or explanatory with the majority (n=82, 63.57%) indicating study findings were only applicable to certain population groups and could not be generalized (20). Research focusing on a particular group or network, for example research with HIV positive MSM, transgender women, or male sex workers was only applicable in these settings (100).

Moreover, some studies were unable to make generalizable conclusions due to recruitment methods. For example, recruitment *via* online survey (87) or through a medical center (101), could not generalize findings to the wider population as not all members of the community may have had access to the internet or attended the medical center (87, 101, 102). Furthermore, most MSM and transgender people living with HIV/AIDS are difficult to reach by offline sampling methods because of the dual stigma and discrimination toward HIV infection and homosexuality (60).

Research using other types of non-probability sampling methods, such as purposive, convenience, and snow-ball sampling techniques also provided similar statements about restrictions on the generalizability of research findings (29, 33, 34, 38, 50, 51, 89, 101, 103–107). As an example, even though participants in Wei et al.'s (2014) study were diverse based on sociodemographic characteristics, the qualitative findings could not be generalized because participants were recruited *via* convenience sample (107). Geographic location was also cited as a reason that findings were not representative of the broader community (43, 65, 75, 102). Convenience sampling was used due to stigma and prejudice surrounding MSM and transgender communities and related research topics which may have impacted recruitment using other methods (43, 108). Some researchers also expressed caution when using research findings in other regions of the study country as the pattern of variables being measured may differ and the access to health services, and cultural beliefs may differ (55, 58).

Beside limitations related to study design and generalizability, limitations also exist around systematic error/bias. Four types of bias were commonly identified: included socially desirability (n = 23, 17.83%); self-report/response (n = 31, 24.03%); participation (n = 40, 31.01%); and information/recall bias (n = 8, 6.20%). Studies that focus on sensitive issues or gather data that may be viewed as "illegal" or unacceptable by family, society or the law, must consider social desirability and self-report bias (35, 37, 42, 65, 89, 106, 109). Participants in these studies may feel ashamed and/or uncomfortable to express their attitudes and behaviors during face-to-face interviews which include sensitive questions (37, 110). Participants' self-report might also be affected by their sociocultural background (77). One study suggested that self-report bias might be reduced by selecting interviewers that were experienced and well known in the study site (80). Self-report bias may under-estimate the true prevalence of particular attitudes or behaviors due to under-reporting of issues such as drug abuse (42), unprotected sex (37), and sexual violence (28, 37, 98). However, self-report bias can be minimized by certain activities such as building a good rapport with the proposed participants, providing additional material and details about the benefit of the study, ensuring confidentiality, providing comprehensive explanations about the topic of the research in addition to providing opportunity to ask questions in a safe environment (42, 111). Another way to increase the reliability of self-report data and to reduce socially desirable bias is by employing Audio-Computer-Assisted Self-Interview (ACASI) or

other computer-assisted questionnaires to collect behavioral data (77, 112). Another study suggested that participants' discomfort maybe diminished by conducting interviews at MSM-friendly venues and by efforts of well-trained and experienced research team including peers as data collectors (49).

Studies addressing stigma may also be prone to participation bias. Forty studies (31.01%) of in this review acknowledged participation bias. Those with the strongest stigma concerns are likely to be underrepresented because they would be the most concerned about leaving contact information for follow-up in a longitudinal study (55). This concern can be managed by allowing the participants to provide pseudonyms and allowing them to provide less identifiable forms of contact information, for example a social media platform address or a cruising site (55, 73). Studies also revealed that the inclusion of incentive also influenced participation, with a person more likely to participate in research if a financial incentive was provided, especially for those come from low socioeconomic status (28). This type of bias which is sometimes called self-selection bias, may exist when convenience sampling is used when recruiting participants, for example studies conducted in China acknowledged the possibility of self-selection bias due to respondents recruited *via* the internet (36, 74).

Recall bias, where participants fail to accurately report their past actions, is a type of information bias which influences the validity of information gained from the participants (57) and may influence the magnitude of associations between variables (98). Eight (6.2%) studies acknowledged information/recall bias as a limitation. For example, recall bias was identified in a longitudinal study with a relatively long spacing (e.g., 6 months) between data collection time points, particularly when measuring mental health outcomes that typically only consider the previous few weeks (73). It was also evident when data relied on retrospective self-reports within surveys (110) or in- depth interviews (24). For example, questions about condom and lubricant use over a previous 6 or 12 months period are likely to be open to recall bias (95, 113).

DISCUSSION

This scoping review aimed to review study design and methods, measure and reported limitations on studies focusing on stigma-related research with MSM and transgender communities in LMICs within the Asia Pacific region. Research evidence in this area has significantly increased during the period 2010–2019. The majority of research was conducted in China and India, which are the two largest countries in this region. Included studies were concerned with different influences of stigma, with different methodologies. Study designs which included quantitative, qualitative, and mixed-methods designs and were dependent on the research focus target population, and setting. Cross sectional survey was the most popular, which is likely associated with the feasibility and suitability of this design for accessing "hidden populations" which have been found to be difficult to follow up in longitudinal study or trial (81). However, some studies recommended that longitudinal research with adequate sample size and probability-based sampling procedures is likely to better support testing complex models and causalities or in order to verify the results (37, 38, 72). Intervention-based research may also provide an alternate option to conduct to measure the impact of interventions on attitudes or behaviors (81). Despite the potential of longitudinal design, a Chinese study found use of this design did not provide a definite causal interpretation (55). Two cross sectional design papers in this review described the baseline survey of an intervention study (68, 93). The cross sectional survey was most often selected when the researchers sought to explore stigma, attitudes, behaviors, and health outcome of marginalized groups using specific previously validated measures.

Qualitative study design is another option for conducting research in MSM and transgender communities. In-depth interview was the most commonly used qualitative methodology employed, which may be associated with the confidentiality this method affords in comparison to FGDs. However, in order to obtain different perspectives from various participants, many researchers employed multiple data collection methods (**Table 1**). Qualitative designs allowed researchers to explore phenomena and issues in greater depth. Qualitative research method enables exploration which generalization of results is not required (114). Qualitative design was also used to triangulate quantitative data from surveys conducted in a mixed-methods design (33, 68, 115). For studies with small sample sizes, triangulation may increase validity. For example, a study in India employed a mixed-methods design which included survey, in-depth interview, and focus groups, and data sources were triangulated (MSM and transgender) to investigate sexual risk behaviors and HIV status disclosure amongst HIV positive MSM and transgender people (24). Exploratory sequential mixed methods design occurs when the qualitative data collection and analysis builds or develops a quantitative instrument or quantitative intervention (116). This method was not employed by any paper in this review.

A wide variety (n = 49) of measures were used to measure mental health and stigma across 123 studies. The CES-D (27) was commonly used to measure depressive symptoms and the SSS (81) or SSS-short version (70) to measure internalized stigma. This review did not compare measures given the diversity in population groups, settings and variables explored. Internal consistency in quantitative studies of measures was not cited in 14 studies. However, when reported, Cronbach's alpha coefficient of the measure in their sample felt between 0.60 and 0.99. However there is debate around the efficacy of using Cronbach's alpha to measure the internal consistency of measures. While Schmitt (117) argued that presenting alpha information is not sufficient and inter-correlations and corrected inter-correlations should also be reported. Further, there level of acceptability is also contested with measures reporting (by conventional standards) low levels of alpha continuing to be useful in some cases (117). In contrast Heo et al. (118) conclude that cross sectional and longitudinal research should use instruments with greater Cronbach's alpha since they have smaller measurement error and greater statistical power. Enhancing Cronbach's alpha of the instrument when questions are parallel targeting a

TABLE 2 | Limitations of MSM and transgender studies.

Area of limitations		Number of studies reported the limitations (%)	Example of studies
Study design	Quantitative-cross sectional survey	38 (29.46)	(30, 37, 76)
	Qualitative	12(9.30)	(119, 120)
Sample size/generalizability		82 (63.57)	(72, 97, 121)
Measure/Scale used		31 (24.03)	(79, 92)
Bias	Socially desirable	23(17.83)	(28, 105)
	Self-report/response	31 (24.03)	(36, 98)
	Participation	40 (31.01)	(88, 104)
	Information/recall	8 (6.20)	(57, 95)

One study may reported more than one limitations.

unidimensional construct is also needed and can be done by developing a set of highly correlated items but not by excessively increasing the number of items with insufficient inter-item correlations (118).

Some researchers discussed ways to overcome the limitation of their study design. This review summarized considerations around conducting stigma-related research. This includes the selection of study designs, sample size, generalizability, measures used, and the possibility of systematic error or bias (**Table 2**). These considerations are similar to conducting research in other marginalized populations such as female sex workers (122), and research in harm reduction among people who inject drugs (123). Researchers did not discuss limitations in relation to sampling collection methods, as many MSM and transgender in LMICs within the Asia Pacific region are hidden and difficult to reach due to prejudice and legality concerns. This conclusion is similar to a study conducted in the US, which used multiple methods to recruit 6,456 transgender participants (124). Choosing suitable sampling methods is important when conducting research in disadvantaged populations. Some considerations proposed by studies included difficulties in reaching the target population, the sensitive nature of research topics, and time allocation. Since MSM and transgender populations are mostly hidden and their sexual behaviors deemed illegal in some Asia Pacific-LMICs, researchers commonly chose multiple recruitment methods, in order to achieve the desired sample size and recruit a diverse sample [e.g., (125)].

This review is not without its own limitations. It is possible that more explanation could be included if authors had been personally approached to provide information on the methodologies chosen. Future reviews of stigma-related research in MSM and transgender population would also benefit from using available validated tools to critically appraise the quality of included studies. Moreover, other factors influencing the quality of research should also be assessed, including survey translation, response rate, data saturation, and validation of overall instruments. This would assist cross country and population comparisons. This scoping review is also only included studies in English language and did not include "gray literature" or doctoral theses. Finally, this review is not a systematic literature review, therefore, we did not assess or exclude papers based on their quality.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/**Supplementary Material**, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

NS and SB: conceptualized the paper. NS and JH: conducted data curation. NS, SB, and JH: conducted the formal analysis. All authors drafted, reviewed, and edited the paper.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/frph.2021.688568/full#supplementary-material

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2.5 Strategies to reduce risk and enhance safer sexual behaviours

A range of STIs risk reduction practices are advocated to reduce the risk of STIs and to enhance safer sexual behaviour. Different risk reduction practices have been used by MSM, gay, bisexual, male sex worker (MSW) and transgender communities (Van de Ven, Kippax et al. 2002, Morisky, Ang et al. 2004).

Using a condom, reducing the number of partners, and circumcision are factors that have been found to reduce the likelihood of acquiring STIs (Schneider, Michaels et al. 2012, Subramanian, Ramakrishnan et al. 2013, Scott, Irvin et al. 2015). A study conducted in Jakarta (n = 302) found 66% to 84% of MSM reported using condoms consistently (Safika, Johnson et al. 2014). In their study, Morineau, Nugrahini et al. (2011) utilised self-reported behavioural surveillance data amongst MSM in six cities in Indonesia (Bandung, West Java; Malang, East Java; Jakarta, Semarang, Central Java; and Surabaya, East Java) (n = 1,450) and found 27% of MSM engaged in condom-less anal sex with multiple male partners and 27% of MSM also engaged in unprotected sex with a female partner (Morineau, Nugrahini et al. 2011). Another study in Vietnam (n = 23) found male commercial sex workers used risk reduction strategies such as: restriction of client numbers; avoidance of anal sex; delivering manual sex with any clients perceived as being at higher risk of STIs; and rinsing the mouth with mouthwash after oral sex (Mimiaga, Reisner et al. 2013).

Another modality to reduce STIs risk and improve safer sexual behaviours is through regular STIs testing/screening. Testing/screening for STIs may increase STIs diagnosis and treatment which may reduce STIs transmission amongst these communities (Adam, de Wit et al. 2014). STI testing availability, affordability, and provision of self-testing or standard testing at STIs clinics are suggested strategies (Witzel, Eshun-Wilson et al. 2020). Mobile testing can complement to fixed STIs clinics to enhance accessibility (Lipsitz, Segura et al. 2014).

Several risk reduction practices used by the MSM and waria communities other than condom use include abstinence, postponing sex, solo sex, mutual masturbation, dry kissing, and choosing manual sex compared to oral or anal sex (Mimiaga, Reisner et al. 2013). Moreover, strategies specific to reducing the risk of HIV transmission are also recommended. Research shows there is a minimum of six types of HIV risk reduction strategies in addition to condom use (Mao, Crawford et al. 2006, Jin, Prestage et al. 2015). The first four are used when the HIV status of partners are known. First, “serosorting” which means engaging in unprotected anal

intercourse with a casual partner or someone who has the same HIV serostatus (Mao, Crawford et al. 2006). Second, "negotiated safely" refers to serosorting when conducting CLAI only with a regular partner, but to use condoms outside that relationship (Kippax, Noble et al. 1997). The third method is "strategic positioning" where the HIV positive partner takes the receptive role, while the insertive role is taken by the HIV negative partner (Van de Ven, Kippax et al. 2002). The other strategy is "ejaculation withdrawal," whereby CLAI is practiced, and the penis is removed from the partner's rectum before ejaculation (Jin, Prestage et al. 2015). The final two modes are related to ART. The first of these is known as viral load sorting which is used once the HIV+ partner has an undetectable viral load, which may also include CLAI.

The second involves pre-exposure prophylaxis (PrEP) whereby a HIV-negative person takes daily oral antiretroviral drugs to reduce the probability of HIV infection when practising CLAI (Grant, Lama et al. 2010). Globally the use of PrEP as a prevention strategy is increasing annually . High income areas like Australia, the US, and Europe have good up-take and initations in some countries in Africa, South America and Asia are increasing, other countries have limited up-take (AVAC. 2023). While Indonesia has limited uptake one planned/ongoing initatation project is currently being implemented (AVAC. 2023). A review of 18 studies found PrEP to be safe and very effective in reducing the risk of HIV infection across different population groups (Fonner et al. 2016). PrEP is considered to have positive outcomes in relation to reducing HIV transmission and cost-effective as a public health intervention amongst MSM (Zhang et al., 2019). While there is some evidence of association between STIs and PrEP this is likely due to high risk behaviours (Traeger, Guy et al. 2022). To further explore trends an Australian study (n = 2404) found while PrEP users reported relatively high STI prevalence, this was stable and did not increase after one year of PrEP use (McManus et al., 2020). The benefits of PrEP use in preventing HIV transmission are realised, especially where PrEP is accessible and affordable.

In addition, the beliefs of some population groups may increase risk. For example, a qualitative study conducted in Vietnam found MSM who engage in commercial sex discussed visual appraisal of prospective partners (excessively 'skinny' or having a 'smelly body') to be a risk reduction strategy (Mimiaga, Reisner et al. 2013)

2.6 Community-engaged research (CEnR)

Community-engaged research (CEnR) has emerged as an approach to reducing health discrepancies, increasing health justice, as well as promoting community and population health. The approach enables a deeper understanding of health-related phenomena and actions that need to be taken (Isler and Corbie-Smith 2012, Barkin, Schlundt et al. 2013, Akintobi, Lockamy et al. 2018, Rhodes, Tanner et al. 2018). CEnR is an approach to research design which involves the community in the research process (Barkin, Schlundt et al. 2013, Rhodes, Tanner et al. 2018). This approach aims to ensure research is culturally appropriate.

The involvement does not necessarily have to be equal to the researcher, but needs to be as significant as possible, since insiders' perspectives will assist the researcher in designing effective recruitment strategies, culturally congruent data collection, and suitable venues and modes for dissemination (Isler and Corbie‐Smith 2012).

Barkin, Schlundt et al. (2013) summarise three levels of community engagement as "minimal, moderate, and maximal." For minimal CEnR, the community is involved only by providing input and assistance during the recruitment of research participants (Barkin, Schlundt et al. 2013). Moderate involvement occurs when the community provides input on the research questions, research design, and contributes actively as part of the research team. Maximal community engagement is similar to community-based participatory research (CBPR); community members work with the research team and adhere to the nine principles of CBPR (Israel, Schulz et al. 1998, Israel 2005, Barkin, Schlundt et al. 2013). The nine guiding principles of CBPR are:

1. Acknowledges community as a unit of identity; a community is characterised by shared similar value or norms, common interests, or friendship network.
2. Develops resources, strengths, and relationship within the community. All resources, and relationship are already existed in the community. This relationship is built by trust and mutual obligation.
3. Enables a partnership in every phase of research collaboratively. Enabling all research partners to participate and share influence in the research equally.
4. Integrates sharing knowledge and action for the beneficial of all partners. This can be direct or indirect, as long as there is a commitment the knowledge and action will benefit all involved partners.
5. Encourages an empowering process and co-learning for all partners. This includes the transfer of knowledge, capacity, capability, and skills.
6. Includes an iteratives and cyclical process. This process includes partnership building and maintenance, assessment in the community, defining the problem(s), development of research methodology, collection, analysis, and interpretation of the data, recommendations and policy implication, and dissemination and taking action when appropriate.

7. Answers health issues from positive and ecological perspectives, emphasising physical, mental and social wellbeing of health issues.
8. Disseminates results and information gained to all partners. Dissemination needs to be in understandable and respectful language for the community.
9. Involves a long-term process and commits to sustainability. Sustainability should address multiple determinants of health (Israel, Schulz et al. 1998, Israel 2005).

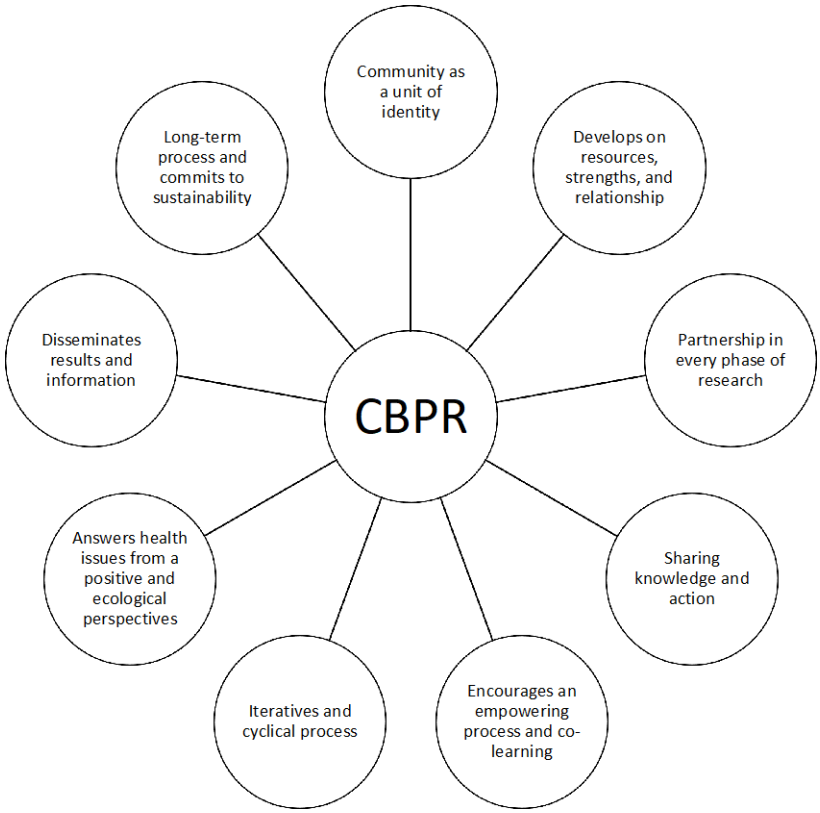

Figure 2.1 The nine key principles of Community-Based Participatory Research (CBPR). Adapted from "Introduction to Methods in Community-Based Participatory Research for Health" (Israel 2005).

In CBPR and other types of action research, the involvement of the community is considered to be equal to the researchers and commences at the start of the research (Wallerstein and Duran 2006). Partnership building with community members and related stakeholders is maintained after the research is completed (Israel, Schulz et al. 1998).

CEnR has been used in public health research to solve complex problems in social and environmental systems involving the interrelationships between families, communities, and

society and helps understand the effects of social determinants including attitudes, beliefs, and behaviours (Barkin, Schlundt et al. 2013). Furthermore, CEnR can help researchers and the community to better understand the complexity of determinants at an individual, group and population level. The CEnR approach enables translation of findings in a “real” context through the involvement of the community (Barkin, Schlundt et al. 2013).

Chapter 3 Methods

3.1 Overview

This chapter details the methods used in this study. The chapter includes:

1. A flowchart describing the project: this figure provides a graphic overview of the five phases of the project including data collection and analysis, and participant groups.

2. A published peer review paper. This protocol paper explains the methods of the five phases of this research in details. It also includes detailed information on activities, involvement of the research partners, study participants, recruitment methods, data collection procedures, and proposed data analysis.

3. Impact of COVID-19. The impact of the COVID-19 pandemic during this research is described in the last section of this chapter.

Figure 3.1 presents the flowchart of this project which comprises five phases. Phase one was building partnership with MSM and waria communities by involving ten members of the communities from NGOs working with MSM and waria in Bali in the project. Phase two was the exploratory phase of the project to understand problems faced by MSM and waria living in Bali by conducting two focus group discussions. FGDs results then were used to develop survey instruments. The final survey instruments were then distributed as an online survey (Phase 3) by research partners to MSM and waria communities living in Bali. Data from the survey were analysed to address the objectives of the project. After the survey, phase four of the project was continued by conducting ten in-depth interviews with ten purposively sampled MSM and waria to obtain a deeper explanation of some survey findings. The last phase was to disseminate the project's findings and recommendations to related stakeholders. Throughout all phases, the research partners were actively engaged and provided feedback to the researchers. A model framework was also developed based on data from the survey.

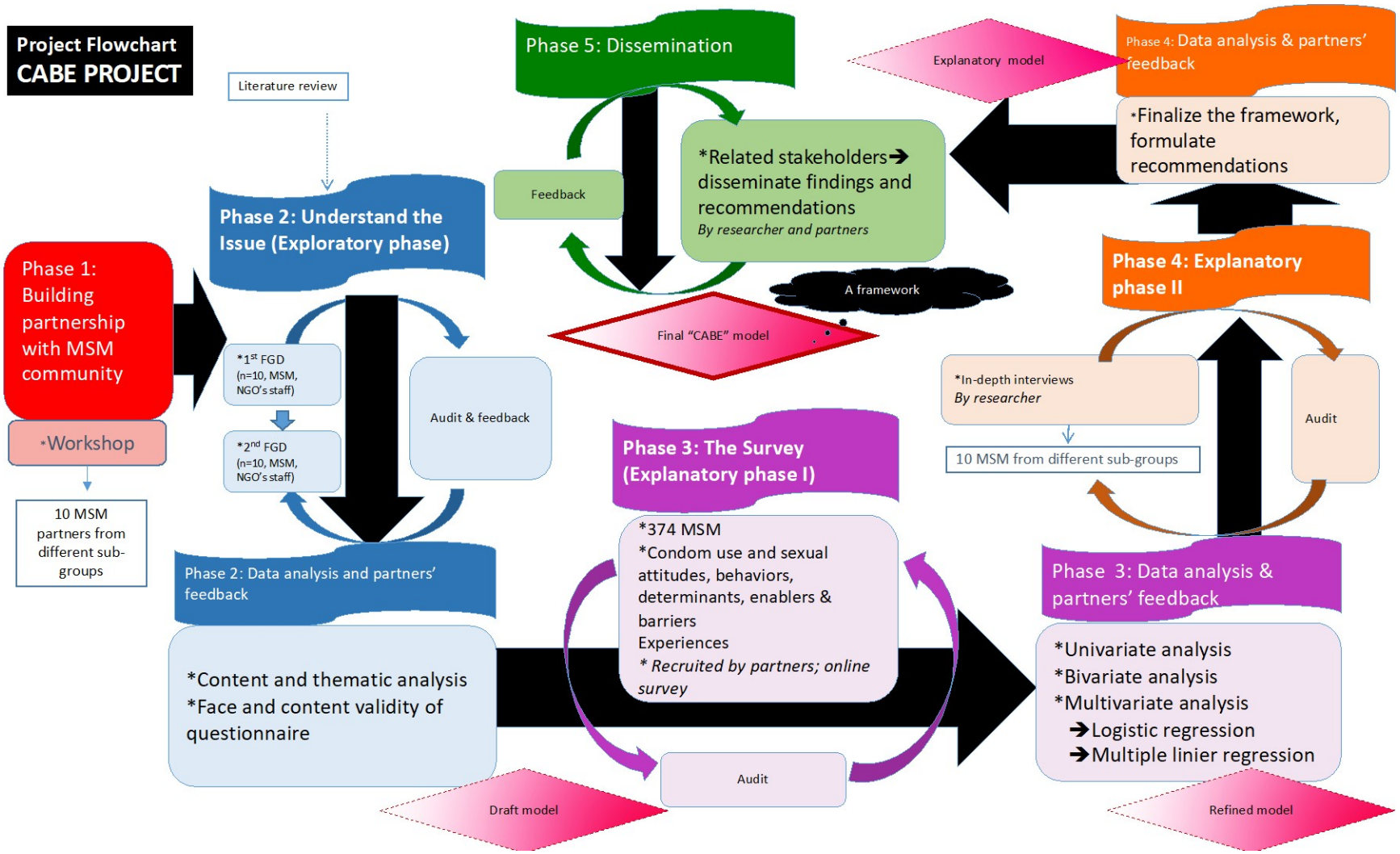

Figure 3.1 The Cabe Project flowchart (Septarini, Burns et al. 2021).

3.2 Published paper: The Cabe project protocol

This section includes a peer-reviewed publication describing the formal protocol of the study. The paper describes the project aim and objectives and methods employed in this study. This paper was published in *Research Methods in Medicine & Health Sciences* in May, 2021. Section 3.3 outlines some slight variations in administration and procedures that occurred as a result of COVID-19 restrictions.

Septarini NW, Burns S, Maycock B. THE CABE PROJECT: Developing a model to conceptualise the sexual attitudes, behaviours, and experiences of men who have sex with men and Waria in Bali, Indonesia: Protocol for a mixed-methods design within a community-engaged research study. Research Methods in Medicine & Health Sciences. (2021):26320843211061294.

Original Research Article

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THE CABE PROJECT: Developing a model to conceptualise the sexual attitudes, behaviours, and experiences of men who have sex with men and Waria in Bali, Indonesia: Protocol for a mixed-methods design within a community-engaged research study

Ni Wayan Septarini[1,2], Sharyn Burns[2], and Bruce Maycock[3]

Abstract

Introduction: The prevalence of sexually transmitted infections (STIs) among MSM (men who have sex with men) and transgender women (waria) in Bali is of significant public health concern. According to the 2015 Integrated Biological and Behavioural Survey (IBBS), HIV prevalence among MSM in Denpasar (the capital city of Bali) was 36% – the highest prevalence in this population reported nationally. In addition, 26% of MSM and 25% of waria in Indonesia were living with HIV in 2015. There is limited research examining the attitudes, behaviours and experiences of MSM in Indonesia, and specifically in Bali. This study will develop a model to help understand the social-cultural context, attitudes, behaviours, and experiences to inform interventions to increase safe sex practices amongst Indonesian MSM and waria who live in Bali.

Methods and analysis: The community-engaged research (CEnR) study, employing a sequential mixed-methods approach, will engage MSM and waria community throughout all five phases. The first two phases will include partnership building and exploratory research (focus group discussions/FGDs). Phase three will include the administration of a survey (n = 374 Indonesian MSM and waria). Phases four and five include explanatory (in-depth interviews) and dissemination phases, respectively. Multivariate analysis will be employed for the quantitative data (the survey) and thematic analysis will be used to analyse the qualitative data (FGDs and in-depth interviews).

Discussion: The findings of this CEnR will inform culturally congruent interventions for organisation working with MSM and transgender to promote safer sexual health practice and improve general well-being of this community.

Keywords

CEnR, MSM, Transgender, Attitudes, Behaviours, Experiences, Mixed-method design

Strengths and limitations of this study

- This CEnR project will be conducted as 'participatory research', presenting substantial challenges including working with a marginalised population, managing bias and retaining confidentiality and anonymity.
- The mixed-methods approach will add to the literature on the use of CEnR in marginalised populations.
- Using exploratory and explanatory phases within CEnR, this study will ensure issues relevant to MSM and waria are explored and rich data are gathered to

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enable a sound understanding of attitudes, behaviours, and experiences of MSM and waria in Bali, Indonesia as well as ensuring the research outcomes are culturally congruent.
- The recruitment of the respondents in phase 3 of this project will include partner-driven and online sampling, which may under-sample isolated MSM and waria and those who do not have access to the Internet.

Introduction

Bali is an island and a province in Indonesia comprising 5780 square kilometres with an estimated population of over 4.2 million people.[1] The island is home to the largest Hindu minority in Indonesia with approximately 83.5% of the population following Balinese Hinduism. Other religions practiced in Bali include, but are not limited to, Islam, Christianity and Buddhism. Traditionally, Balinese Hinduism has recognised homosexuality since ancient times and is celebrated in traditional practices including ceremonies and performances.[2] Bali is a popular tourist destination with attractive beaches as well as highly developed arts and culture.[3] Many expatriates live in Bali with an estimated 30,000 people originating from other Indonesian islands and other countries.[3] The number of MSM in Indonesia as estimated by the Indonesia Ministry of Health[4] is to be around 1.2 million with more than 14,000 living in Bali. The Bali AIDS Commission also estimated there were 650 waria in this province.[5]

MSM include those who identify as gay and also men who engage in sexual activities (e.g. by hand, anal sex and/or oral sex) with men without self-identifying as gay or transgender. This may include male sex workers, bisexual and heterosexually identifying men who have other partners (male and/or female) or a wife.[6] The term waria originally comes from the combination of *wanita* (woman) and *pria* (man) terms which are roughly similar to 'male transvestite'.[7] The term waria is complex and has a range of different interpretations.[7] Waria does not only include 'men who imitate women in their clothing styles or mannerisms while retaining a masculine identity' as stated by Dede Oetomo nearly 20 years ago, but has a broader definition based on Indonesian culture.[8] In some parts of Indonesia, waria belong to the third gender,[8] while in many parts they are assigned as men.[7] Others have defined waria as males who become and dress like females in order to provide financially; and, who tend to work as hairdressers, entertainers and sex workers.[9] The WHO recognises waria as a specific indigenous term in Indonesian culture 'to describe people who form same-sex relationships and those who exhibit non-binary gender identities'.[10]

Since the early 1990s, MSM and waria have been identified as key populations for STIs and HIV surveillance along with people who inject drugs (PWID) and female sex workers (FSWs).[9,11] The Indonesia Health Profile 2016 reported that 26.1% of 41,250 newly infected PLHIV in 2016 were MSM. There was an increase of HIV/AIDS amongst MSM from 2011 to 2016, with this group being the second highest high-risk behaviour group after the heterosexual group. According to the 2018–2019 Indonesian integrated HIV biological behavioural surveillance (IBBS), national HIV prevalence was 17.9% and 11.9%, and 2,1% among men who have sex with men (MSM), and waria respectively.[12] Furthermore, studies have found HIV prevalence amongst MSM in Denpasar to be 36.0%[13] and to be 18.7% amongst gay men and 40.9% among transgender people in Bali.[14] The main transmission risk behaviour of reported HIV cases in Bali from 2011 to 2015 was from homosexual (20%) and heterosexual (76%) intercourse.[11] Until 2019, it was reported that among the HIV new cases, 76.4% were associated with heterosexual and 14.2% with homosexual transmission.[15]

A recent survey conducted in Bali amongst the MSM and waria community (Indonesia Sexual Health Survey (SekSI) study 2018) found 20% of respondents (142/709) reported having had sex with female partners in the last 6 months. Of these, 48.6% had sex without condoms.[16] Further, 15% and 28.1% of respondents had sex with sex workers and sex workers' clients, respectively, in the last 6 months. Of these, 48.1% of those who had sex with sex workers and 42.2% of those who had sex with sex workers clients had condomless anal intercourse (CLAI). Sex work was the main income for 44.6% of waria and 8.3% of MSM.[16] This study highlights the risk of HIV and STI transmission among MSM due to the proportion of participants reporting multiple sex partners and unprotected sexual intercourse. MSM reported having sex with their female partners, casual partners, and sex workers, highlighting the significance of sexual health risks outside the MSM community.

Research conducted in Bali among MSM and waria communities has largely focused on prevalence and sexual behaviour. This includes a prevalence study[5]; the IBBS survey in the capital city of Bali[12]; HIV biomedical and behavioural survey in all districts in Bali[16]; and research on pre-exposure prophylaxis use awareness.[17] To the best of the authors' knowledge, while these studies explored behaviours of MSM, data exploring the attitudes and experiences of MSM living in Bali were not collected.[16] Research is needed to understand the unique MSM and waria population in Bali, especially those who do not openly identify as gay or waria. Moreover, research formally adopting a community-engaged approach among these populations in Bali has never been conducted. While other studies have engaged the community during recruitment,[12,16-18] to our knowledge this is the first study among this target group in Bali that formally engages community members throughout the research.

Before developing health promotion interventions, it is critical to understand the sexual risk behaviours among specific groups and barriers to practising safe sex behaviours.[19-22] The complexity of the issues faced by MSM and waria, along with increasing stigma and discrimination against MSM, waria and HIV positive people, in Indonesia, is significantly slowing the country's response to HIV infection;[23] therefore, it is important to understand the socio-cultural aspects of safe sex practices to inform the development of STIs and HIV behaviour change strategies[20,24,25] and the influence of community/social norms risk reduction on MSM behaviours.[24] Understanding attitudes, behaviours, and experiences of MSM is necessary in order to develop a culturally appropriate prevention program.[24] Engaging MSM in the research will provide a better understanding of the social-cultural perspectives and sexual practices specific to HIV in Bali.[14] Involving MSM and waria as research partners during this study is intended to ease the complexities influenced by culture or geographical locations and issues faced by MSM and waria in Bali.

The findings of this study will inform policy and intervention development including recommendations for the development of specific, culturally appropriate health promotion programs designed with the community to give and place MSM and transgender the proper way to prevent HIV and other STIs infections, which indirectly (if applicable) will also prevent sexual communicable diseases to the broader community with the ultimate aim of slowing the epidemic of STIs and HIVamongst the MSM community in Indonesia.

CEnR has been employed in trials in clinical set- tings,[26] and developing public health initiatives (trans- lational research) however these studies have not used a mixed-method approach.[26] Little has been published related to the used of mixed-methods design within CEnR. Furthermore, including a multi-sectoral partner- ship is also a focus in CEnR.[27] This project will add to the literature regarding the use of sequential exploratory explanatory mixed-methods design within a CEnR project and will provide a grounding for further research and model development in other settings and populations. The social model to be developed as a result of this study will help understand attitudes, behaviours, and experi- ences of MSM and waria in Bali and will inform guidelines, policy and practice for stakeholders and or- ganisations working with MSM and waria to promote safer sexual health.

Aim and objectives

This CEnR aims to explain attitudes, behaviours, and experiences of MSM and waria in Bali to inform sexual health policy and practice for this population group. Specifically, the objectives are to:

1. Explore factors that influence sexual health attitudes and behaviour including the enablers and barriers among MSM and waria in Bali.
2. Develop a model that conceptualises sexual health attitudes, behaviour, and experiences among MSM and waria in Bali in detail.
3. Explore experiences of MSM and waria in Bali including stigma, discrimination, and mental health.
4. Provide recommendations for the development of strategies or interventions to improve safer sex behaviours among MSM and waria in Bali.

Methods and analysis

CEnR enables a deeper understanding of health-related phenomena and actions relevant to specific communities.[26-29] This is achieved through the involvement of the community in the research process ensuring the research is culturally congruent.[26,27] The process of engagement commences at the beginning of the research and the community may be involved in prioritising or defining the community's problem, developing research tools or methods, engaging in data collection, analysis, dissemination and publication of the research findings. While involvement does not necessarily have to be as equal as the researcher, it should be as significant as possible as the insiders' perspective will help the researcher in designing effective recruitment strategies, culturally congruent data collection and suitable venues and modes for dissemination.[27,28]

Public health research aiming to solve complex problems in social and environmental systems involving interrelationships between families, communities and society has previously employed CEnR.[26] The approach allows for the exploration of a range of determinants, recognising the complexity of interactions that impact social, emotional and physical health.[26] This project will employ moderate engagement of the community members whereby community provides input into research questions, research design and contributes actively in the research (see Phase 1). A sequential exploratory–explanatory mixed-method design will be employed. Figure 1 provides an overview of the CABE project phases and methodology.

This mixed methods research will employ multivariate analysis to interpret quantitative results using SPSS.[30] Thematic analysis will be conducted for the qualitative part of this research. NVivo will be used to manage and assist analysis of qualitative data.[31]

Phase 1

Phase one involves the establishment and development of partnerships with non-government organisation (NGO) staff who are also MSM and waria. NGOs throughout Bali that

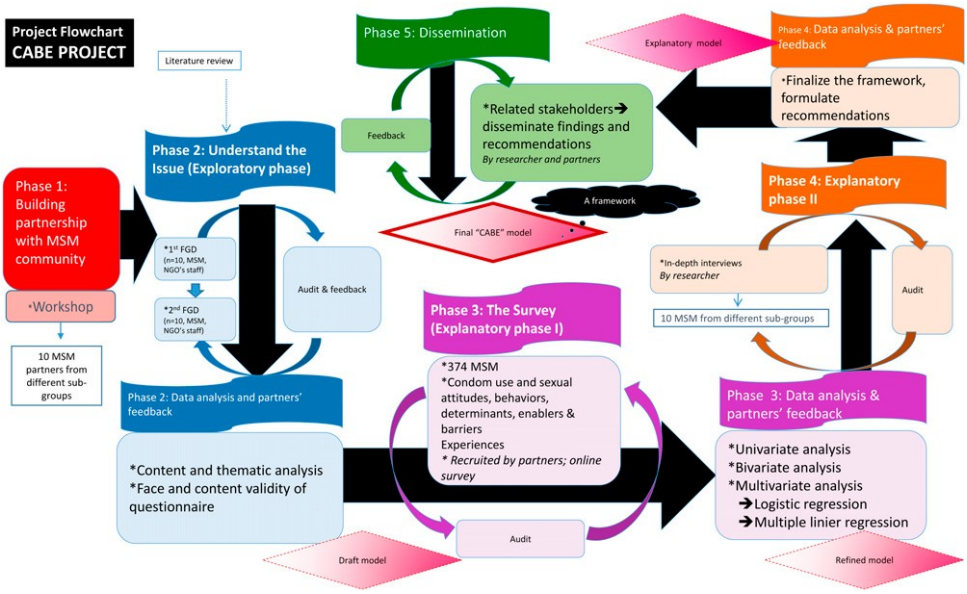

Figure 1. The interrelationship between the five phases of the CABE Project.

focus on sexual health are accessed by MSM and transgender. The organisations have the capacity to reach hard-to-access groups. Therefore, partnership with staff that works with these groups will be established. In Bali, government agencies refer to NGOs for sexual health information. Further, both government and NGOs are in collaboration when delivering health intervention which is most commonly implemented by NGOs. There is a chance recruitment of MSM and transgender people for this research from very remote areas will be difficult; this will be acknowledged as a study limitation. Participating staff will comprise approximately 10 MSM and waria who come from different subgroups. Consideration will be given to recruiting Balinese born as well as Indonesians born outside Bali. This will enable the views of Balinese and non-Balinese Indonesians to be heard. The partners will be invited to a one-day workshop which will include the opportunity to:

1. Develop a good rapport and relationship with partners.
2. Discuss the project, the researcher and the partners' roles.
3. Discuss the recruitment methods for the survey and in-depth interviews.
4. Discuss health issues around MSM and waria's attitudes and behaviours.
5. Partners to contribute to the development of interview guide (for Phase 2) and the questionnaire (for Phase 3).

The one-day workshop (6 hours) will allow for engaged interaction which is necessary community engagement. This will allow the researcher develop a rapport with the partners and for partners to contribute to the program. The length of the workshop will be alleviated by ensuring the workshop activities are flexible and interesting.[32]

Phase 2

Phase two will include two focus group discussions (FGDs) and will involve the development of the data collection tools. Focus groups are useful to explore group or community views and needs.[33] In Bali, MSM and waria commonly work together; therefore, when conducting FGD in the same group, they may encourage new thoughts and enhance depth, nuanced and varied responses.[33] FGD1 will explore attitudes, behaviours and experiences of MSM and waria in Bali. FGD2 will inform the development and face and content validity of the survey. Participants will include approximately 10 MSM and waria (referred by partners), from the MSM community. The same participants will be invited to FGD1 and FGD2. The FGDs will be facilitated by the lead author using a semi-structured interview guide. A trained research assistant will take notes, including making reference to non-verbal communications, and manage the audio recording.[34]

The interview guide for FGD1 will be informed by the literature and will be prepared with research partners during Phase 1. The questions could include current health and social problems faced by MSM and waria in Bali related to sexual attitudes, behaviours, access to health services, mental health issues as well as stigma and discrimination.

Participants of FGD 1 will be invited to participate in a second FGD one month after the first. During the one month

period, it is anticipated participants will have the opportunity to reflect on the first FGD. This time period will also provide researchers and partners adequate time to analyse workshop findings and prepare a revised version of the survey. The purpose of FGD 2 will be to review the survey for face and content validity. In addition, academic and community experts (intervention-based expertise through the Ministry of Health Bali) ($n = 4$) who have been working and conducting research with MSM and waria nationally and internationally will review the survey for content validity.

To ensure a culturally relevant, acceptable and understandable instrument is developed, the TRAPD (Translation, Review, Adjudication, Pretesting and Documentation) team translation approach will be employed.[35] The survey will also be reviewed by partners, academic and community experts for face and content validity assessment. In order to prevent researcher bias, as the researcher team have worked and conducted research with marginalised groups including MSM and transgender people for many years, there will be a bracketing process at the beginning and throughout the study to set aside and document the researcher's preexisting assumptions and beliefs related to the research. A reflexive process will be employed which will enable the researcher to consider these issues.[36] The researchers will constantly identify, discuss and record their assumptions and interests about topics that emerge during the data collection process.[37] This documentation will be used as part of the reflective process, and will be followed by critical reflection after each focus group with other researchers as well as conducting ongoing analysis of data. Reflection will be conducted throughout the study to enhance trustworthiness, permit emergent design and assess for saturation. Comprehensive descriptions of the contextual data and activities of the study; through engagement, reflexive journaling and documentation will also be conducted.[38] Moreover, the researcher will be collecting and coding the data, and a regular discussion with research team will be conducted.[39] Credibility will be enhanced by building a good rapport with the focus group participants and regular member checking of raw data.[40] In addition, as the first author/researcher is also an academic from a national university in Bali and has been involved in collaborative projects with some NGOs, existing networks and knowledge of services and programs will be beneficial throughout the research process. In order to reduce researcher bias, in addition to the bracketing process, member checking with research participants will be conducted to clarify whether the interpretation is representative of their thoughts/beliefs.

Data analysis

The FGDs will be recorded and transcribed verbatim. The transcription will be reviewed for errors. Notes will be made during and at the conclusion of the FGD to describe body language and group dynamics. A thematic analysis of transcripts and notes will be conducted. NVivo software will be used to assist data analysis and to manage the coding. Data analysis will include categorisation/merging codes/nodes and developing themes.[31] Coding is used to make sense and identify or thematic 'tagging' text with nodes/codes which emerge from the data.[31,41] Coding detail approach will be used to cluster nodes/codes together in a 'tree-structured' system in order to obtain connected idea or concept in a set.[31] A codebook will be created as part of the analysis process to keep detailed descriptions about codes/nodes.[31] Themes developed from the findings of FGD1 will inform the survey questions. FGD2 will include specific discussion about the survey to ensure the content, language and format are consistent with the project objectives, are culturally appropriate and are easy to complete. FGDs will be conducted by the lead author who has expertise in qualitative data collection with these population groups and will ensure appropriate procedure for adults discussing sensitive issues.

Phase 3

Ten NGOs staff will be recruited during phase 1 and invited to the one-day workshop. These participants will become the research 'partners'. Using a partner-driven sampling, an online survey (developed during Phase 2) will be administered to a minimum of 374 MSM and waria.[42,43] Partners will identify respondents who are in a similar group as themselves (gay, waria, bisexual, HIV+ MSM and male sex workers/MSW). Partner-driven sampling is employed to ensure diversity of socio-demographic characteristics and geographic area representation.[44] Due to overlapping peer groups, sexual or social networks, partners may recruit the same people[44]; however, partners will ask potential participants if they have previously completed the survey. In addition, place and date of birth and religion will be asked and matched data reviewed to reduce the chance of double responses from the same person. Each partner will be asked to recruit 30–40 respondents during a three-month period. Partners will provide respondents with a link to the survey. The survey will be anonymous, and informed consent will be given before participants start the survey. Partners will provide the link and recruit using different modes such as WhatsApp, email, SMS and gay dating mobile phone applications (gay-apps, such as Grindr, Hornet, Blued and BoyAhoy). If potential participants do not have internet access, they will be able to access an offline app available in a tablet which will be supplied by the partners and used for this project only. The online (and offline) survey will be conducted through Qualtrics^{XM}. To reduce the likelihood of multiple entries to the survey and to ensure respondents only complete the survey once, several screening questions will

be included at the beginning of the survey. All respondents will be given a 30,000 rupiahs (AU$3) internet voucher. Contact details will be separated from the surveys as soon as data is downloaded.

The inclusion criteria are the following:

1. Males who in the last 6 months have ever had sex (by hand, mouth or/and anus) with a man,
2. aged 18 years and over,
3. have lived in Bali for at least 6 months and
4. have Indonesian citizenship.

The exclusion criteria are the following:

1. Those who plan to leave Bali to live in other parts of Indonesia or other countries in the next 6 months.

Sample size determination

Given the estimation of the MSM population in Bali, of around 14,000 adults, to obtain 95% confidence level and 5% precision (margin of error), the required sample for the survey is 374 respondents.[43]

Every effort will be employed to enhance participation including: a well-respected institution managing the study; emphasis on the importance and relevance of the study; providing different completion options (online and offline including phone, tablet and computer formats); treating participants with respect and appreciation; ensuring confidentiality; ensuring the survey is as short as possible; and providing access to telephone and email for questions and comments about the survey.[45]

The final survey will be developed based on consultation with MSM and waria in Phase 1 and with participants of FGDs in Phase 2 of this project. It will include demographic characteristics such as age, religion, place of residence, place of birth, educational level, occupation and marital/relationship status, and it is also anticipated to include the following:

a. STIs risk attitudes and behaviours: type, determinants and enablers.
b. Safe sex attitudes and behaviours: type, determinants, enablers and barriers.[46-48]
c. Strategies to increase safer sex behaviours amongst MSM and waria.
d. Stigma and discrimination experiences.[46]
e. Mental health status (distress and happiness level).

Data analysis

Descriptive statistics will be used to analyse the characteristics of respondents, and Chi-square tests will be employed to determine associations between categorical variables and t-tests for continuous variables (if applicable). Logistic regression and multiple linier regression will be employed to determine the predictors or relationship between socio-demographic and socio-ecological characteristics and stigma and discrimination; distress level and happiness; condom use and sexual attitudes and practices amongst MSM and waria. Specific variables will be informed by Phase 2. All statistical analyses including data entry will be performed in SPSS statistic version 25.[30]

Phase 4

Community members (MSM and waria) will be recruited to participate in a semi-structured interview conducted by the lead author. The interview guide will be informed by the findings of the survey (phase 3). It is anticipated that the interviews may focus on discussion around the social-cultural context in which MSM and waria live in Bali including their experiences around stigma, discrimination and mental health (depression, anxiety and stress). Reasons for higher risk and safer sex behaviours, barriers that hinder safe sex behaviour, social norms around safe sex behaviour and strategies to enhance safe sex behaviours among MSM and waria may also be explored.

Research partners will purposively recruit participants. The inclusion criteria of participants will be informed by the survey (phase 3) findings. For example, if the survey found significantly different results between Balinese and non-Balinese MSM and waria, this fourth phase may be focused on gaining a deeper understanding of these differences and how this may impact interventions.

The researcher is aware that her background and experiences could influence how the data will be collected and analysed. Therefore, to enhance the validity of this data, member checking will be conducted after all the in-depth interviews have been completed, transcribed and interpreted by the researchers. A purposive sub-sample will be invited to clarify the researcher interpretation.[49] Moreover, other strategies will be used in order to maintain the reliability and validity of interviews, including note taking as well as audio-recording, avoiding leading questions and providing respondents an opportunity to clarify points made.[50]

Several procedures will be used to improve the trustworthiness of this study. In order to reduce bias, the researcher will collect and code the data and discuss with the research team regularly.[39] Credibility will be enhanced by building a good rapport with the community.[40] To increase the conformability, several representative quotations from respondents that signify each theme will be included.[38,40] Comprehensive descriptions of the contextual data and activities of the study through engagement, reflexive journaling, documentation and presenting the findings with quotations will provide transferability through allowing others to analyse the situation and research outcomes based on setting and context.[38]

This study will be consistent with qualitative reporting, standard and criteria described in the literature including the COREQ and ENTREQ guidelines.[51-53]

Data analysis

The interviews will be recorded and transcribed verbatim. The transcription will be organised and reviewed for errors. A thematic analysis will be conducted. The NVivo software will also be used to help with coding, developing categories and themes and developing theory of the data (data driven).[31] This software is used to allow a better focus on ways of understanding the meaning of what is gained.[31] At the end of the analysis, themes and theory that have been shaped, in conjunction with the survey (phase 3) results, will inform the development of the explanatory model of this project.

Phase 5

Phase five includes the dissemination of the study findings. The findings will be made available and presented to relevant stakeholders including staff from the Ministry of Health, public health service, related NGOs and relevant professionals (Universities and academics) in a workshop. The workshop will also discuss the recommendations for future actions and strategies in relation to study results. Partners will be involved in facilitating this event. This workshop will introduce the final model and guidelines to inform safer sex among MSM and waria in Bali. This study is a supervised doctoral research project. Moreover, the study result will also be disseminated through conference presentation, peer-review journals and in a PhD thesis.

Discussion

The use of sequential mixed-methods with exploratory and explanatory phases in this CEnR project will facilitate deeper understanding of MSM and waria living in Bali, Indonesia's attitudes, behaviours, and experiences. The mixed-methods approach in this research will add to the literature on the use of CEnR in marginalised populations; enables a deep analysis of the research results; in addition to acknowledging different views, paradigms, explanation and interpretation of phenomena.[54] The CEnR design as 'participatory research and partnership' with partners and community members supports this vulnerable community providing opportunity for input to the research process and implications. This process will enhance amenability of the proposed recommendations around policy and practice.[55] Moreover, this design allows and ensures more culturally congruent findings and guidelines for practice of the research translation.[26,55]

This project will also ensure ethical principles for community-based research are fulfilled.[47] These include trust and transparency between the researchers and research partners; equity, inclusion and balanced power amongst research partners, along with tolerance and conflict management during the project.[56] The sustainability of the partnership will ensure regular communication with research partners related to the project.[56]

While the main strength of this research project is the use of mixed-methods design within CEnR which makes the findings and recommendations more comprehensive and culturally appropriate, the potential limitation may be under-sampling of isolated MSM and waria and those who do not have access to the Internet as the recruitment of the respondents for the third phase of this project will include partner-driven and online sampling.

In conclusion, this project aims to develop a specific model to help understand the attitudes, behaviours, and experiences of MSM and waria in Bali. The research will also inform the development of guidelines to inform policy and practice to enhance the health of MSM and waria in Bali. The use of sequential mixed-methods design within CEnR will inform subsequent research and may be useful in other settings and contexts.

Ethics

The research procedures have been approved by Human Ethics Committees from Curtin University, Western Australia (HRE 2019–0759) and Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia (No: 2521/UN14.2.2.VII.14/LP/2019). The anonymity and confidentiality of study participants are really en- sured in this study.

All respondents will be provided information sheets describing the research and their rights to withdraw at any time, and will provide consent prior to their participation. Participant information and consent forms and instruments (interview guidelines and survey) will be in Indonesian language (Bahasa Indonesia). Data collected will be stored on a secure server accessible to research team members only.

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Author Contributions

This paper is a protocol of a supervised doctoral research project. The findings of this project will be used by NWS to pursue a Doctor of Philosophy of Public Health at Curtin University, Australia. NWS was the one who is responsible for authors' contribution of this work. All authors have delivered significant

contribution on the development and conceptualisation of this paper. NWS was drafting this paper, while BM and SB were responsible in editing and giving guidance for this protocol. Revising the protocol was the responsible of all authors. The final version of this manuscript has approved by all authors.

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3.3 Impact of COVID-19 pandemic

In January 2020, the World Health Organisation began to publicise the outbreak of coronavirus disease (COVID-19) an infectious disease caused by the SARS-CoV-2 virus (Ali, Baloch et al. 2020). This study commenced in 2018, prior to the global COVID-19 pandemic, but most data collection occurred during the pandemic.

The first COVID-19 case in Bali was diagnosed in an international tourist in February 2020, with community transmission increasing from June 2020 onwards (National Task Force for the Acceleration of Handling Covid-19 Bali 2020). Throughout this pandemic, the Government of Indonesia implemented a range of control measures including, stay-at-home orders, physical distancing, wearing face masks, and regular hand washing, in an attempt to reduce transmission (Purnama 2020).

Prior to the onset of the COVID-19 pandemic, the researcher (Ni Wayan Septarini) was able to conduct and finalise phases 1 and 2 of this project, to build partnerships with MSM and waria communities and to better understand the specific issues faced by these groups living in Bali.

The first COVID-19 case in Australia was announced on January 25, 2020 in Melbourne, Victoria (Hunt 2020). The Government of Western Australia declared a state of emergency from 12am, March 16, 2020, due to the global COVID-19 pandemic. This was followed by the announcement of a public health state of emergency effective from 12am , March 27, 2020 (Government of Western Australia 2020). As an outcome of the state of emergency, the Western Australian borders were closed to domestic and international travellers on April 5, 2020. Western Australia remained closed to international travel until March 2022, after being closed for 712 days (Marcus 2022).

Due to travel restrictions precluding international travel from Western Australia, the researcher (Ni Wayan Septarini) was not able to return to Bali for the planned data collection (survey and in-depth interviews). However, the researcher remained in contact with the research partners online via the WhatsApp® group chat. The collaboration between researcher and research partners continued during the pandemic with some slight modifications to the data collection process

Survey data collection proceeded as planned with the ten research partners facilitating data collection from July to September 2020. However, it was intended that Ni Wayan Septarini would travel to Bali to support this process. The research partners were vital to ensuring the success of this phase, especially given lockdown restrictions were also implemented in Bali.

The fourth phase of the study, the qualitative in-depth interviews were also conducted online. It was originally intended these be conducted face-to-face. Research partners recruited one participant each to join private in-depth interviews on March, 2021 with five MSM and five waria living in Bali and Ni Wayan Septarini using WhatsApp® video calls. Respondents were selected purposively based on gender, employment, and marital status to achieve broad explanation on barriers.

The final dissemination phase included distributing research results and recommendations for related stakeholders in Bahasa Indonesia as a summary report attached via WhatsApp message. Once the research returned to Bali, the findings were disseminated via a face-to-face group meeting with the research partners and personal meetings with key stakeholders.

Chapter 4 Building partnerships (Phase 1) and understanding the issues (Phase 2)

Chapter four describes findings from phases 1 and 2 of the research (see: *The Cabe Project Flowchart,* Figure 3.1). The methods for each phase are described in Chapter 3. Phase 1 focused on building partnerships with the MSM and waria communities. Phase 1 included exploratory data collection to understand issues experienced by MSM and waria communities.

4.1 Phase 1 Building partnerships

4.1.1 Workshop with partners

A four-hour workshop with consenting partners was held on the 6th December 2019. Ten Indonesian MSM and waria partners were recruited and consented to participate in the project. Research partner recruitment was based on their interest and their capacity to contribute to this project. Research partners were all employed with relevant non-government organisations (NGOs; n=5) in Bali and had various lived experiences relevant to the research topic (Table 4.1).

Table 4.1 Research partners sub-groups and institutions

Institutions (NGOs)	Subgroups
Gaya Dewata Foundation	Gay
Perwaron Warcan	Waria
Bali Peduli Foundation	Bisexual
Kerti Praja Foundation	HIV + MSM
Gaya Dewata Foundation	Male Sex Workers ("Kucing")

Four of the partners were Balinese, while six were Indonesian but born outside Bali Island. The overarching aim of the workshop was to:

1. build rapport between the lead researcher and research partners;
2. provide a forum for the project and partners' roles to be discussed;
3. discuss recruitment strategies as well as a plan for regular meetings; and,

4. discuss social, cultural and health issues experienced by MSM and waria in Bali to inform the development of the research tools (Septarini, Burns et al. 2022).

4.1.2 Social, cultural and health issues experienced by MSM and waria

A key focus of the workshop was dedicated to brainstorming and discussing social, cultural and health issues experienced by the MSM and waria communities. This discussion helped clarify issues and provided research partners the opportunity to provide suggestions about questions to be included in the survey to be administered in phase three. Table 4.2 provides a summary of the main issues and specific problems recommended by research partners to explore during the survey or in-depth interview.

Table 4.2 Key issues identified by the research partners

Main/general issues	**Specific problems**
Family	Sexual identity status disclosure
	HIV status disclosure
	Relationship
Partners	Number of partner (s)
	Female partner(s)
	Status disclosure (sexual identity & HIV)
	Bisexual relationship
	Marriage
Condom	Use
	Availability
	Prices
STIs/HIV	Experience
	Status (test)
	HIV Status disclosure
Abuse/ violence	Physical
	Social

	Sexual
Stigma and discrimination	Family
	Workplace
	Public/community

The following issues were raised:

1. Waria lack certain skills making it difficult for them to find employment that maintains their safety and fulfils their basic needs. Waria research partners mentioned the need for skills training that can help them to find employment in roles such as hospitality (e.g., chef training), fashion design (alterations training), hairdressing, and beautician work.
2. Waria experience discrimination and inequality around employment opportunities with the government. The research partners discussed that there is no chance for a waria to become a civil servant. The government would not consider employing a waria, and there are currently no laws to address this inequity.
3. MSM and waria experience difficulties as to how to disclose their gender and sexual identities to their family. Waria often need to change (their clothes, hair style, and general appearance) before returning home to hide their gender and sexual identities from family. MSM experience family pressure around getting married like a "normal" man.
4. In Indonesia, national identity cards and national health insurance ownership cards are only provided to a man or woman, not waria. As the government does not approve the third gender, many waria have difficulties with their national identity card. Most indicate 'male' on these identification cards.
5. The research partners discussed how MSM and waria are placing themselves and their partners at risk by not using condoms. The partners suggested including questions about the number of sexual partners and condom use in the survey.
6. Sex with female partner(s) and bisexual activities was also discussed as common, especially for MSM. It was suggested questions related to sexual activity with female partner(s) and bisexual activities were included in the survey.

7. Condom use, availability, and prices were discussed. According to the research partners, even though condoms are widely available in NGOs, questions about condom use, availability, and prices are important to include in the survey, especially as not all community members have regular access to NGOs.
8. The inclusion of questions around STIs experiences and HIV status were also considered important.
9. The survey should not ask about pre-exposure prophylaxis (PrEP) since a lot of community members will not know about it and its side effects. Research partners suggested not including questions around PrEP on the survey as it is not widely available in Indonesia, and that community members would be unaware of PrEP and the benefits.
10. The research partners suggested questions around harassment and bullying amongst waria need to be asked. Harassment is especially common for waria sex workers. Stigma and discrimination experience questions were considered relevant for waria and MSM.

The workshop also provided an opportunity to revise the draft focus group discussion guidelines for phase 2 of this project. In addition, the research partners provided feedback on potential questions to be included in the survey. These questions were included based on the literature and included previously validated questions and scales. The research partners suggested making response options simpler, if possible, including more yes/no responses, and avoiding the use of "too many," "often," "sometimes," "seldom," and "never" as respondents could become bored and tired easily.

4.2 Phase 2 Understanding the issues

Two focus group discussions (FGDs) with MSM and waria community members were conducted in phase 2. All participants for these FGDs were recruited by research partners. The FGDs were facilitated by the researcher. Prior to the FGD participants were provided with information sheets and a consent form.

4.2.1 Focus group discussion-1 (FGD-1)

The aim of the first FGD was to explore attitudes, behaviours, and experiences of MSM and waria in Bali in general. The first part of the FGD-1 included discussion

about attitudes, behaviours, and experiences. These findings informed the draft survey, which was revised during phase 1.

Ten MSM and waria were purposively recruited by the research partners to attend the first FGD. The FGD was facilitated on the 18th December 2019 by Ni Wayan Septarini. Some research partners also attended the FGD and assisted with audio recordings, note taking and reflection. The FGD was held in an NGO's meeting room in Denpasar Regency, a convenient place for MSM and waria to meet.

Participants were aged from 23 to 57 years. Educational qualifications ranged from junior high school to Master's degree qualifications. Five participants were Balinese born, while the remaining five were born in other Indonesian provinces (Celebes, West Java, Jakarta, Surabaya). Three participants self-identified as bisexual, two as homosexual, gay and waria, while the remaining five identified as either homosexual or gay.

The key issues that emerged during the first FGD included:

1. High-risk jobs, gangsters (motorbike gangsters), abuse, bullying, and harassment as key issues faced by waria. Waria, especially those working on the street as sex workers, are often scared by motorbike gangsters at night. These gangsters often threatened waria for money or sex. As sex work is illegal in Bali, waria were unable to report these incidents to police. FGD participants highlighted the importance of asking questions around abuse, bullying, and violence during the survey or in-depth interviews.

   > *Our communities, especially waria, have very risky job which prone to violence since general population still think that our communities are infectious. So abuse and violence remain especially for those who work on the street.* (MSM, Bali).

2. Low capacity, capability, and economic problems were cited as key issues for waira. FGD-1 participants also discussed the limited capacity and skills waria possess to find employment outside of sex work.

   > *Many waria were very difficult to get job as they look like a woman compared to MSM, who are still like a man, is easier to find a job.* (MSM, non-Bali)

3. Cultural obstacles, including Balinese and non-Balinese culture, were identified. Both MSM and waria participants discussed cultural issues in their hometowns. These participants discussed moving to Bali to enable them to express themselves freely as they feel they were "unable to be themselves". Participants discussed the importance of asking questions about culture in the survey and in-depth interviews.

> *Many MSM and waria came to Bali because in Bali people are more respectful; nobody really mind about what you are doing as it not their business. It is your business with your God.* (MSM, non-Bali)

> *Bali is somewhat flexible. If people comes to Bali with good intention it was fine, as long as they respect each others and the traditional customs. But if someone unrespectful as a waria in Kuta last time, she need to meet the police.* (MSM, Bali)

4. Condom use problems (MSM vs waria). Similar to suggestions from the research partners, FGD-1 participants discussed including questions related enablers and barriers to condom use.

> *...usually, we still remember to use condom during sexual intercourse.* (Waria, non-Bali)

> *...many people already aware about the benefit of condom, so they tend to use it. But those who work as sex workers sometimes cannot refuse to have sex without condom especially with gangsters.* (MSM, Bali)

> *Sometime, if they* [MSM] *were under alcohol influenced or illicit drugs, they tend not to use condom.* (MSM, non-Bali)

5. Urban and rural differences were notes. FGD-1 participants discussed the need to recruit MSM and waria from rural and urban areas since they often experience different problems.

> *My niece in the village was married with a man but never touch by him. After we found out that he was a homosexual* [gay], *so they got divorce.… Many MSM go to public bath in the river, so we can see other men* [they are hidden]. (MSM, Bali)

> *MSM from urban and outside Bali usually go to the village where they do not know each other, and their family or neighbour won't know about their sexual identity.* (MSM, non-Bali)

6. Stigma and discrimination (Balinese vs non-Balinese). Participants highlighted the importance of focusing on stigma and discrimination experienced by MSM and waria communities.

> *Stigma for Balinese was big. Some Balinese went to Java and there they be a waria as in Bali they cannot be a waria. Very seldom waria can be real waria in Bali.…* (MSM, Bali)

7. Sexual identity and HIV disclosure, and family reaction (MSM vs waria). Exploring sexual identity and HIV status disclosure, especially to the family, was considered important, especially as most participants discussed their own difficulty disclosing their sexuality and HIV status.

> *Once my father asked me to get married, but I explained to him that I could not. I will make the woman/wife unhappy because I cannot do it* [have sex] *with her.* (Waria, Bali)

> *I have a family, my family* [wife and children] *did not know about my bisexual activities, I will keep it secret for the sake of my family.* (MSM, Bali)

8. Community understanding about HIV. Questions around HIV knowledge remain relevant to include as participants suggested current knowledge among these communities is likely to be low.

> *Information around HIV understands by general population and MSM and waria communities were not up to date. They remains scared to meet people with HIV; do not know where to obtain HIV drugs, etc.* (MSM, Bali)

4.2.2 Focus group discussion-2 (FGD-2)

The second FGD focused on the face and content validity of the survey. The draft survey was developed after a review of the literature, the partners workshop and FGD-1. This FGD was conducted on January 28, 2020. A total of nine participants attended; eight from FGD-1 and a replacement for one of the original participants (who was also a waria). One of the original participants did not attend due to a ceremony-related reason.

Participants were provided a copy of the survey draft. The researcher and participants worked through each question individually and discussed if there was anything to be changed, revised, deleted, or added. This process took around two hours. This was followed by discussion focusing on additional issues or items to be added to the survey. For example, one participant raised the issue of sexual health of MSM and waria, specifically related to anal examination and STIs other than HIV. Some changes were made in relation to the wording of the questions, additional questions, and others were deleted due to duplication. Table 4.3 described key changes to the draft survey FGD-2.

Table 4.3 Draft survey revision after FGD-2

No	Original questions	Decision (reason)	Revised questions
1	None	Accepted	Are you a male / gay, bisexual, or waria / transgender woman?
2	What is your gender?	Accepted and revised	In your opinion, what in your gender?
3	Are you disclosing your status as MSM / waria to your family?	Accepted and revised	What is your family's attitude regarding your status as MSM / waria?

4	Are your living environment influencing your sexual identity?	Accepted and revised	As MSM / waria, is stay in Bali easier or more difficult?
5	None	Accepted	In your opinion, is there a difference in living in the city and in the village for MSM / waria?
6	None	Accepted	In your opinion, MSM / waria are more comfortable to live in Bali?
7	Omit: Did you place of birth influenced your sexual identity?	Accepted	
8	What age did you start to have sex with same sex?	Rejected (not the focus of this study)	
9	When were you last time having sex with your sex partner?	Rejected (not the focus of this study)	
10	None	Accepted	Have you ever had sex with a female sex worker
11	None	Accepted	Have you ever had sex with a woman?
12	None	Accepted	Have you ever had sex with male sex workers
13	None	Accepted	Buying a condom is a shame
14	DASS 21 (too long)	Accepted	Used 9 discrimination questions based on previous research
15	What is your HIV status	Accepted and revised	Are you living with HIV (PLHIV) / HIV positive?

4.2.3 Meetings with experts

Meetings with three Bali-based public health experts in-person and online after the second FGD were conducted to obtain confirmation and gain opinions from Balinese public health experts regarding the information gathered.

The first meeting was held face to face with an academic who was also an active researcher and expert in HIV/STIs issues amongst key populations, as well as an HIV/AIDS activist since the 2000s. The meeting was held on February 11, 2020 in Denpasar, Bali. Prior to the meeting, the latest version of the survey (based on the literature, workshop with partners, and informed by FGDs 1 & 2) was sent to the expert.

The second meeting was held in person on February 14, 2020 with one HIV/AIDS activist since the 1980s, a professor in public health in a university, a founder and director of an NGOs focused on treatment and prevention of STIs and HIV programs, especially for high-risk populations and marginalised communities including female sex workers, PLHIV, PWID, and the LGBT community. The meeting commenced by discussing project implementation and partner involvement. The latest version of the survey was reviewed and discussed.

The third meeting was with a senior staff of communicable disease prevention (including STIs and HIV) in the Ministry of Health, Bali Province. The meeting was conducted online on the February 24, 2020. The survey was reviewed and discussed. Table 4.4 describes experts' suggestions regarding the survey instrument.

Table 4.4 Experts' suggestions and researcher's responses

No	Experts' suggestions	Researcher's responses
1	The reasons why many MSM and waria are moving from other provinces/islands to live in Bali	Added onto the survey instrument
2	Making sure the outcome variable/s (dependent variable/s) that are going to be found from the survey (making it easier to publish in health journals)	Decided the main dependent variables for this research: condom use attitudes, condom use behaviours
3	Social networking of MSM and waria community (not only ask about sexual networking)	Added onto the survey instrument
4	Suggestion on the number of questions, options, and wording of the questions	Conduct a trial and conduct face validity with research partners before the survey is administrated
5	During the survey implementation, do not forget to do daily recapitulation so response rate can be calculated. Cascade of research.	Conducting daily recapitulation for response rate
6	Providing the partners with a sheet/form to fill in daily with the number of MSM and waria offered to join the survey.	Research partners report daily online

7	Decide what kind of analysis is going to be used and what data is required for those analysis (numerical/interval or categorical data), must be in line with the survey questions results (the options).	Decided to obtain numerical/interval data, when possible, which can be categorised if needed
8	For stigma and discrimination scale, suggestion to look at the 12-item HIV scale that include personalised stigma, disclosure concerns, concerns about public attitudes, and negative self-image (Reinius, Wettergren et al. 2017).	Decided to use this scale for stigma and discrimination measurement
9	Find out how many of the respondents have never gone for HIV test.	Added to the survey instrument
10	For online respondents, make sure they get the incentives.	All survey participants were given Rp.30,000 (AUD $3) incentives as appreciation for their time and participation
11	To not only included those who work at NGOs as the respondents of the survey as there are many MSM and waria in the villages as well.	Tried to reach MSM and waria from the villages as well; however, due to COVID-19 pandemic restriction, this was not possible
12	The sampling methods can include snowball technique and ensure that seed-1 is the group that is intended for the survey (MSM/waria HIV+, bisexual, sex workers, Balinese, dancer community, etc.).	Decided to use research partner-driven sampling due to COVID-19 pandemic restrictions
13	Make sure the sample are Balinese or those who live in Bali (not only temporary for working) so in the future the result can be used to conduct a specific program in Bali.	The inclusion criteria for the survey participants were MSM or waria who at least already stay in Bali for a minimum 6 months and have a plan to stay in Bali for at least the next 6 months
14	For MSM and waria who are HIV+, make sure to ask about the reason to start or stop the treatment since the problems amongst them now are around adherence and lost to follow up.	Decided to ask HIV status only as the focus of this study was not around HIV infection and Anti-retroviral therapy

The last version of the survey aimed to accommodate these suggestions. The final version included edits and minor adjustments from the research team and was trialled with ten research partners before finalising (see Appendix C).

4.3 Conclusion

Chapter 4 described phase 1 and phase 2 of the project in detail. Phase 1, building partnerships with ten research partners representing various NGOs, was successfully achieved conducting workshops to build rapport, to explain the project procedures, and to obtain an overall summary of the various problems faced by MSM and waria communities in Bali. The research partners also provided feedback regarding the draft survey instruments (phase 3), and the draft in-depth interview schedule (phase 4). Research partners committed to become involved during the implementation of the project during each phase.

During phase two, research partners recruited ten people from MSM and waria communities in Bali to participate in two FGDs to further explore issues experienced by the MSM and waria, and to further revise the survey. Further review and face validation of the survey was conducted during the second FGD.

Meetings with experts were also conducted after the FGDs. These meetings provided the opportunity to discuss the broader public health implications of the research and to gather important feedback and advice from eminent experts.

Chapter 5 Survey Results (Phase 3)

5.1 Overview

This chapter addresses objectives 1, 3, and 4 of this research to:

1. explore factors that influence sexual health attitude and behaviour among MSM and waria in Bali (objective 1);
2. develop a social model that conceptualises the sexual health attitudes and behaviour among MSM and waria in Bali in details (objective 3); and
3. explore experiences of MSM and waria in Bali including social-cultural aspects, stigma, discrimination, and mental health (psychological distress and happiness) (objective 4).

The survey (phase 3) included the implementation of an online survey from July to September 2020. The ten research partners recruited at least 40 participants each. A total of 416 MSM and waria participated. The survey consists of several groups of questions (see Appendix C).

It was intended the student researcher, Ni Wayan Septarini, monitor the study in Bali and be available for face-to-face support with the research partners. However, COVID-19 restrictions precluded travel from Australia to Bali, so online meetings were held regularly. During the survey, a meeting with all research partners was conducted via WhatsApp® video call. Research partners discussed administrative difficulties during the survey; for example, internet connection issues and how to continue the survey which was interrupted. Partners were in regular contact, so they did not approach the same participants. All obstacles were sorted out with no major issues. Besides this meeting, monitoring and discussion via the WhatsApp® group were conducted daily during the survey to monitor participant recruitment. Each research partner reported a summary at the end of the day.

Potential participants were provided with an information sheet in Bahasa Indonesia. Participants with poor literacy were read the information sheet. Informed consent was given prior to participants completing the survey. The online survey was administered via Qualtrics®, a secure survey collection tool. Participants were provided the survey link via WhatsApp®. More details regarding the survey

administration can be found in the two published papers (Septarini, Hendriks et al. 2021, Septarini, Burns et al. 2022). The participants were given 30,000 rupiahs (AUD$3) as compensation for their time. Data from Qualtrics® was then generated to SPSS version 16 software in readiness to be analysed. Based on collected data, important findings in order to answer objectives for this research were analysed using SPSS version 26 and Stata software version 17. The analysis was conducted to address specific objectives of this research (Septarini, Burns et al. 2022).

The results were presented in four papers that were submitted and published in different reputable peer-reviewed journals. One paper has been published, and the other three are under review.

1. Paper one: Prevalence of stigma and discrimination amongst Men who have Sex with Men (MSM) and Transgender women (waria) in Bali, Indonesia. This paper was submitted to the Journal of Homosexuality on June 16, 2022 and is currently under review. This paper addresses part of objective 4 of the project, *explore the experiences of stigma and discrimination amongst these communities in Bali* (see section 5.2). This paper discusses:
    a. The prevalence of stigma and discrimination amongst MSM and waria living in Bali
    b. Factors influencing stigma and discrimination amongst these communities
2. Paper two: Social-ecological factors on attitudes towards condom use amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia. This paper was submitted in the Journal of Homosexuality on July 19, 2022 and is currently under review. This paper addresses part of objective 1 of this project, *explore factors that influenced attitudes amongst MSM and waria in Bali* (see section 5.3). This paper discusses:
    a. Condom use attitudes score amongst MSM and waria in Bali
    b. Socio-ecological factors that influenced condom use attitudes score amongst this communities
3. Paper three: Model conceptualizing condom use behaviours amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia. This paper was submitted in the Journal of Sex Research on September 28, 2022 and is currently under review. This paper addresses part of objective 1 and objective 3 of this project, *explore factors that influenced behaviours of*

MSM and waria in Bali, and develop a social model that conceptualises the sexual health attitudes and behaviour among MSM and waria in Bali (see section 5.4). This paper discusses:

   a. Condom use behaviours scores and categories amongst MSM and waria in Bali.
   b. Socio-ecological factors that influenced condom use behaviours scores amongst these communities
   c. Relationship between sexual health behaviours and condom use behaviours in categories amongst these communities
   d. Qualitative findings from in-depth interviews (phase 4 of the project) which support survey findings (phase 3 of the project)
   e. Socio-ecological model on condom use attitudes and behaviours amongst MSM and waria in Bali.

4. Paper four: Psychological distress and happiness of Men who have Sex with Men (MSM) and transgender people during the Coronavirus Disease-19 (COVID-19) pandemic: is there a need for public health policy intervention? This paper was published in the Frontiers in Public Health Journal on September 14, 2021. This paper addresses part of objective 4 of this project, *explore experiences of psychological distress and happiness amongst MSM and waria in Bali* (see section 5.5). This paper discusses:

   a. Prevalence of psychological distress and factors influencing psychological distress amongst MSM and waria in Bali (during COVID-19 pandemic)
   b. Happiness level and factors influencing happiness level amongst MSM and waria in Bali (during COVID-19 pandemic)
   c. Recommendations to reduce psychological distress and increase the level of happiness amongst these communities

5.2 Published paper: Prevalence of stigma and discrimination amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia.

This paper was submitted to the *Journal of Homosexuality* on June 16, 2022 and has been published on February 24, 2023. This paper addresses part of objective 4 of this research, *to explore experiences around stigma and discrimination amongst MSM and waria living in Bali*.

Septarini, Ni Wayan, et al. "Prevalence of Stigma and Discrimination Amongst Men Who have Sex with Men (MSM) and Transgender Women (Waria) in Bali, Indonesia." Journal of Homosexuality (2023): 1-23

The manuscript below is the first submission version.

Prevalence of stigma and discrimination amongst Men who have Sex with Men (MSM) and Transgender women (waria) in Bali, Indonesia.

Abstract

Men who have sex with men (MSM) and transgender women (waria), in Indonesia experience stigma and discrimination. Prevalence of stigma and discrimination experienced by 416 MSM and waria living in Bali, Indonesia and associations with socio-demographic characteristics are described.

High levels of stigma were reported by 50.5% of MSM and 62.7% of waria. Discrimination was reported by 35.5% of MSM and 72.4% of waria. Family rejection or no family awareness of MSM status equated to higher levels of stigma compared to those for whom family accepted MSM status. MSM who were not single were twice as likely to experience discrimination compared to single participants. Non-Hindu MSM were nearly three times as likely to experience discrimination compared to Hindu participants. Homosexual and bisexual waria reported lower odds of experiencing stigma compared to heterosexual waria. Waria who were studying were less likely to experience discrimination compared to those who reported regular employment jobs.

Policies and practices to reduce experiences of stigma and/or discrimination specific to MSM and waria are needed.

Keywords: discrimination; MSM; stigma; transgender women; waria; developing country

Introduction

Globally marginalized populations, including Men who have Sex with Men (MSM) and transgender people, continue to experience human rights abuses such as stigma and discrimination (Preston, D'Augelli et al. 2004, Padilla, Castellanos et al. 2008, Thompson, Khan et al. 2013, Stahlman, Bechtold et al. 2015, White Hughto, Reisner et al. 2015, Lyons, Stahlman et al. 2019, Mitchell, Lazuardi et al. 2019). Stigma is associated with negative or unfair beliefs and is a complex concept that refers to prejudice (Preston, D'Augelli et al. 2007), while discrimination refers to an enacted

form of stigma or unfair treatment, or mistreatment of an individual, group or population (Preston, D'Augelli et al. 2007, Centers for Disease Control and Prevention 2016). Challenges faced by MSM and transgender people often differ between and within regions and countries and may include: living in hidden subcultures (Hassan, Swartz et al. 2018); lack of confidentiality; fear of being not accepted by family (Putra, Waluyo et al. 2019, Victoryna, Yona et al. 2019); and difficulty in accessing health services (Kim, Grosso et al. 2018, Mitchell, Lazuardi et al. 2019). Studies exploring stigma and discrimination among marginalized populations have been conducted globally (Oldenburg, Biello et al. 2014, Brown, Low et al. 2016, Diehl, Vieira et al. 2017, Boya, Yang et al. 2019). Low and middle income countries in the Asia and Pacific region have employed different methodologies to reach marginalized populations and address cultural environments (Septarini, Hendriks et al. 2021).

Stigma has been found to be a barrier to the provision of health services, health promotion and treatment for marginalized populations, leading to sub-optimal health-seeking behaviours (Lyons, Stahlman et al. 2019). Stigma and discrimination can negatively impact and act as barriers to MSM and transgender health and wellbeing at structural/societal, interpersonal, and individual levels (White Hughto, Reisner et al. 2015, Centers for Disease Control and Prevention 2016). An Eswatini study reported multiple forms of stigma to be associated with high-risk sexual behaviours. Participants reported increased odds of feeling excluded and gossiped about by family members when these family members were aware of their status of being same sex attracted or gender diverse (Lyons, Stahlman et al. 2019). A national study in Cambodia found nearly 40% of transgender women had experienced sexual abuse and nearly 25% had lost their job due to their gender presentation (Mun, Tuot et al. 2016). Increased stigma was associated with disclosed sexual orientation and forced condom-less sexual intercourse in Vietnam (Oldenburg, Biello et al. 2014).

A 2007 review around gender and sexuality regulation in Indonesia discussed an era of reinforcing stigma by declaring homosexuality to be “deviant, unnatural and foreign” (Blackwood 2007). Studies around stigma and discrimination in Indonesia have mainly focused on Human Immunodeficiency Virus (HIV) positive individuals (Desyani, Waluyo et al. 2019, Mitchell, Lazuardi et al. 2019, Putra, Waluyo et al. 2019, Victoryna, Yona et al. 2019). There is a lack of research focusing on stigma and discrimination experienced by MSM and transgender women (called *waria*, a specific indigenous term in Indonesian culture ‘to describe people who form same-sex

relationships and those who exhibit non-binary gender identities') (World Health Organization 2016) regardless of their HIV status. A study in Jakarta involving 302 MSM and waria found most waria were routinely exposed to stigma, discrimination, and violence (Safika, Johnson et al. 2014).

This paper describes socio-demographic characteristics of two different cohorts: MSM and waria in Bali, Indonesia, and their stigma and discrimination experiences. The associations between socio-demographic characteristics and stigma and discrimination experiences were assessed for each group.

Materials and Methods

Study design, participants, and procedure

The findings described in this paper are drawn from a large community-engaged research study exploring attitudes, behaviours, and experiences of MSM and waria in Bali, Indonesia. A quantitative cross-sectional survey was conducted from July to September 2020 using the Qualtrics online platform. Survey participants were recruited conveniently using a research partner-driven sampling technique (Ten partners from non-government organizations (NGOs) were involved in this research project). Research partners recruited participants via the internet, short message services, social media campaigns and snowballing (Septarini, Burns et al. 2021). The survey link directed participants to the information sheet and consent prior to the survey. Surveys were self-completed by participants, with the exception of those with low literacy levels who were supported by the research partners who read the information sheet, consent and survey aloud. The voluntary and anonymous nature of the survey was highlighted. The methodology is described in detail elsewhere (Septarini, Burns et al. 2021).

Sociodemographic characteristics measurements

The survey was initially written in English and subsequently translated and administered in Bahasa Indonesia. The ten research partners, in addition to four Indonesian public health experts, reviewed the survey for face and content validity (Septarini, Hendriks et al. 2021).

Demographic characteristics, such as age, gender, sexual identity, marital status, education level, employment status, place of birth, religion, current living areas, and HIV+ status, were collected. A detailed description of the characteristics and variables have been described elsewhere (Septarini, Hendriks et al. 2021).

Stigma measurement

The previously validated 12-item short version of the HIV Stigma Scale was used to measure stigma (perceived stigma) (Cronbach α >0.7) (Reinius, Wettergren et al. 2017). This 12-item stigma scale was adapted by replacing "HIV status" with "sexual orientation". This scale includes four sub-domains of perceived stigma: "personalized stigma," "disclosure concerns", "concerns about public attitudes," and "negative self-image" (Reinius, Wettergren et al. 2017). Table 5.2 describes the four sub-domains. Responses included a Likert scale ranging from strongly agree (1) to strongly disagree (4) (score: 12-48). A previous study summarized the total score for each sub-domain, then grouped the scores into 3 categories (scores 3-5: "lower stigma," scores 6-9: "fairly high stigma," and scores 10-12: "higher stigma") (Zeluf-Andersson, Eriksson et al. 2019). However, after analysing the distribution of the data, due to a large number of low expected frequencies across the three levels of stigma across all four sub-domains (Supplementary Tables 1 and 2, see Appendix E), stigma was recoded to "lower stigma" (score ≤ median) and "higher stigma" (score > median). Logistic regression was used to estimate the association between characteristics and stigma.

Discrimination measurement

Experienced discrimination (enacted stigma) was assessed using nine validated questions from a national study conducted in Cambodia (Mun, Tuot et al. 2016). Questions focused on experiences related to participants' sexual identity. The nine questions asked about past experiences related to employment, health services, home and school (see Table 5.3). Responses included "yes," "no," and "do not know." The variable was categorized into "ever experienced discrimination" and "never experienced discrimination." To be categorized as "ever experienced discrimination" a participant needed to respond "yes" to at least one of the nine questions.

Data analysis

Data were analysed using SPSS v.26. Descriptive statistics in the form of mean, standard deviation, and range were calculated for continuous variable (age) or frequency and percentage for categorical socio-demographic variables are reported separately for the MSM and waria cohorts. Frequency and percentage were also reported for each response item of the stigma and discrimination questions, independently for the two cohorts. Stigma was categorized as "lower stigma" and "higher stigma" (Reinius, Wettergren et al. 2017) whilst discrimination was categorized as "ever experienced discrimination" and "never experienced discrimination" (Mun, Tuot et al. 2016). Subsequently, the distributions of socio-demographic characteristics and stigma experience (low/high) as well as discrimination experience (ever/never) of MSM and waria were presented using frequency and percentage. Binary logistic regression models were performed to assess associations between socio-demographic variables with stigma and discrimination experiences whilst adjusting for age, sexual identity, education level, marital status, employment status, place of birth, religion, residential district, and HIV status. Separate logistic regression models were performed for the MSM and waria cohorts. Statistical significance was set at $p < 0.05$.

Ethical approval

Ethical approval was obtained from the Human Ethics Committee, Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia (No: 2521/UN14.2.2.VII.14/LP/2019) and the Curtin University Human Research Ethics Committee, Australia (HRE 2019-0759).

Results

Sociodemographic characteristics of participants

Responses were received from 416 MSM (70.4%) and waria (29.6%) individuals living in Bali, Indonesia. The mean age of MSM participants was 32.0 (SD = 7.5) years. Common characteristics of MSM participants included: identified as homosexual or tend to be homosexual (67.9%); had graduated from senior high school

(58.4%); were single (67.6%); had a regular/full time job (54.6%); were Islamic (54.9%); were from Bali (39.6%); currently resided in an urban area (88.4%); were not HIV positive (68.2%); and almost three quarters of participants reported their family were unaware of their MSM identity (72.9%) (Table 5.1).

Waria participants were mostly aged 26-40 years (69.1%); identified as homosexual or tend to be homosexual (79.7%); had graduated from senior high school (38.2%); were single (75.6%); had a regular/full time job (52.8%); were Islamic (59.3%); were from Java (43.1%); currently resided in an urban area (81.3%); were not HIV positive (57.4%); and over half reported their family accepted their waria identity (57.9%) (Table 5.1).

Table 5.1 Table Characteristics of the study participants

Table 5.1 | Characteristics of the study participants (N = 416)

Characteristics	**MSM** ***n* (%)**	**Transgender** ***n* (%)**
Total participants	293 (70.4)	123 (29.6)
Age (in years)		
Mean (SD)	32.0 (7.5)	34.5 (8.2)
Min-Max	18-59	19-55
Age groups		
18-25	55 (18.8)	14 (11.4)
26-40	201 (68.6)	85 (69.1)
41-60	37 (12.6)	24 (19.5)
Sexual identity		
Heterosexual/tend to be heterosexual	46 (15.7)	21 (17.1)
Homosexual/tend to be homosexual	199 (67.9)	98 (79.7)
Bisexual	48 (16.4)	4 (3.3)
Education level		
No or elementary school	13 (4.4)	34 (27.6)
Junior high school	37 (12.6)	34 (27.6)
Senior high school	171 (58.4)	47 (38.2)
Diploma or higher	72 (34.6)	8 (6.5)
Marital status		
Single (not married, widow)	198 (67.6)	93 (75.6)
Married	30 (10.2)	3 (2.4)
Living with a partner	65 (22.2)	27 (22.0)
Daily activities		
Regular/full time job	160 (54.6)	65 (52.8)
School/college	47 (16.0)	8 (6.5)
No job/no school	48 (16.4)	20 (16.3)
Home duties/others	38 (13.0)	30 (24.4)

Religion			
	Hindu	91 (31.1)	35 (28.5)
	Islam	161 (54.9)	73 (59.3)
	Others	41 (14.0)	15 (12.2)
Place of birth			
	Bali	116 (39.6)	46 (37.4)
	Java	111 (37.9)	53 (43.1)
	Others	66 (22.5)	24 (19.5)
Current living area			
	Urban	259 (88.4)	100 (81.3)
	Rural	34 (11.6)	23 (18.7)
HIV+ status			
	Yes	93 (31.8)	52 (42.6)
	No	190 (65.1)	63 (51.6)
	Do not know/have never tested for HIV	9 (3.1)	7 (5.7)
Family attitudes on sexual identity status			
	All accept	41 (14.1)	70 (57.9)
	Some accept/reject	38 (13.1)	32 (26.4)
	Family does not know	212 (72.9)	19 (15.7)

Stigma experienced by MSM and waria

Table 5.2 presents the frequency of the 12 stigma items by four sub-domains ("personalized stigma," "disclosure concern," "concerns about public attitudes," and "negative self-image") as experienced by the MSM and waria participants, separately.

The majority of participants in the MSM group disagreed or strongly disagreed with the following statements from the "personalized stigma" domain: *people stop caring about/associating with me after knowing my sexual orientation* (77.8%); *I lost friends after I told them about my sexual orientation* (80.8%); *some people avoid touching me if they know my sexual orientation* (83.3%). Similarly, they disagreed or strongly disagreed with the following statements from the "concerns about public attitudes" domain: *most people believe that having a different sexual orientation in society is a dirty thing* (62.3%); *most people are uncomfortable in the environment of someone who is homosexual/bisexual* (61.3%); *someone who has a different sexual orientation is usually treated like an outcast* (69.4%); as well as the "negative self-image" domain: *I feel guilty for having a different sexual orientation* (68.4%); *I feel that I am not as worthy as others because I have a different sexual orientation* (81.4%); and *people/society's attitude towards homosexual/bisexual makes me feel worse about myself* (76.8%). Despite this, in relation to the "disclosure concern" domain, 20% of

MSM participants strongly agreed that they have tried to keep their sexual identity a secret and 18.5% strongly agreed that they were very careful when they spoke with others about their sexual orientation.

When considering waria participants, 67.5% disagreed/strongly disagreed that they have tried to keep their sexual identity a secret. They also disagreed/strongly disagreed that they were very careful about speaking to others about their sexual orientation (54.9%). Moreover, waria participants disagreed/strongly disagreed with the following statements from the "personalized stigma" domain: *people stop caring about/associating with after knowing my sexual orientation* (70.8%); *I lost friends after I told about them my sexual orientation* (77.3%); *some people avoid touching me if they know my sexual orientation* (78.5%); as well as the "concerns about public attitudes" domain: *most people believe that having a different sexual orientation in society is a dirty thing* (66.1%); *most people are uncomfortable in the environment of someone who is homosexual/bisexual* (66.1%); *someone who has a different sexual orientation is usually treated like an outcast* (65.8%); and the "negative self-image" domain: *I feel guilty for having a different sexual orientation* (76.0%); *I feel that I am not as worthy as others because I have a different sexual orientation* (76.0%); and *people/society's attitude towards homosexual/bisexual makes me feel worse about myself* (76.1%).

Table 5.2 Stigma experienced by study participants

Table 5.2	Stigma experienced by study participants (N = 416)		
Stigma checklist, n (%)	**MSM 293 (70.4)**	**Waria 123 (29.6)**	**Total 416 (100)**
Personalised stigma			
People stopped caring about / associating with me after knowing my sexual orientation			
Strongly agree	11 (3.8)	5 (4.1)	16 (3.8)
Agree	54 (18.4)	31 (25.2)	85 (20.4)
Disagree	162 (55.3)	66 (53.7)	228 (54.8)
Strongly disagree	66 (22.5)	21 (17.1)	87 (20.9)
I lost friends after I told them my sexual orientation			
Strongly agree	6 (2.1)	6 (4.9)	12 (2.9)
Agree	50 (17.1)	22 (17.9)	72 (17.3)
Disagree	174 (59.6)	75 (61.0)	249 (59.9)
Strongly disagree	62 (21.2)	20 (16.3)	82 (19.7)

Some people avoid touching me if they know my sexual orientation			
Strongly agree	6 (2.0)	2 (1.7)	8 (1.9)
Agree	43 (14.7)	24 (19.8)	67 (16.1)
Disagree	182 (62.1)	76 (62.8)	258 (62.0)
Strongly disagree	62 (21.2)	19 (15.7)	81 (19.5)
Disclosure concerns			
Telling someone about my sexual orientation is risky			
Strongly agree	31 (10.7)	8 (6.6)	39 (9.4)
Agree	116 (39.9)	33 (27.0)	149 (35.8)
Disagree	116 (39.6)	66 (54.1)	182 (43.8)
Strongly disagree	28 (9.6)	15 (12.3)	43 (10.3)
I tried hard to keep my sexual orientation a secret			
Strongly agree	59 (20.3)	9 (7.5)	68 (16.3)
Agree	127 (43.6)	30 (25.0)	157 (37.7)
Disagree	81 (27.8)	64 (53.3)	145 (34.9)
Strongly disagree	24 (8.2)	17 (14.2)	41 (9.9)
I am very careful when I speak with others about my sexual orientation			
Strongly agree	54 (18.5)	7 (5.7)	61 (14.7)
Agree	163 (55.8)	48 (39.3)	211 (50.7)
Disagree	56 (19.2)	51 (41.8)	107 (25.7)
Strongly disagree	19 (6.5)	16 (13.1)	35 (8.4)
Concerns about public attitudes			
Most people believe that having a different sexual orientation (as homosexual / bisexual) in society is a dirty thing			
Strongly agree	22 (7.5)	6 (5.0)	28 (6.7)
Agree	88 (30.1)	35 (28.9)	123 (29.6)
Disagree	142 (48.6)	57 (47.1)	199 (47.8)
Strongly disagree	40 (13.7)	23 (19.0)	63 (15.1)
Most people (the community) are uncomfortable in the environment of someone who is homosexual / bisexual			
Strongly agree	13 (4.5)	5 (4.1)	18 (4.3)
Agree	100 (34.2)	36 (29.8)	136 (32.7)
Disagree	141 (48.3)	63 (52.1)	204 (49.0)
Strongly disagree	38 (13.0)	17 (14.0)	55 (13.2)
Someone who has a different sexual orientation (as homosexual / bisexual) is usually treated like an outcast			
Strongly agree	19 (6.5)	7 (5.8)	26 (6.3)
Agree	70 (24.1)	34 (28.3)	104 (25.0)
Disagree	156 (53.6)	60 (50.0)	216 (51.9)
Strongly disagree	46 (15.8)	19 (15.8)	65 (15.6)
Negative self-image			
I feel guilty for having a different sexual orientation (as homosexual / bisexual)			
Strongly agree	18 (6.2)	5 (4.1)	23 (5.5)
Agree	74 (25.4)	24 (19.8)	98 (23.6)

Disagree	149 (51.2)	65 (53.7)	214 (51.4)
Strongly disagree	50 (17.2)	27 (22.3)	77 (18.5)
I feel that I am not as worthy as others because I have a different sexual orientation (as homosexual / bisexual)			
Strongly agree	11 (3.8)	6 (5.0)	17 (4.1)
Agree	43 (14.8)	23 (19.0)	66 (15.9)
Disagree	173 (59.7)	68 (56.2)	241 (57.9)
Strongly disagree	63 (21.7)	24 (19.8)	87 (20.9)
People / society's attitude towards homosexual / bisexual makes me feel worse about myself			
Strongly agree	9 (3.1)	4 (3.5)	13 (3.1)
Agree	58 (20.1)	23 (20.4)	81 (19.5)
Disagree	170 (58.8)	65 (57.5)	235 (56.5)
Strongly disagree	52 (18.0)	21 (18.6)	73 (17.5)

Discrimination amongst MSM and waria

Table 5.3 presents the response of MSM and waria participants towards each of the nine discrimination items. Over their lifetime, 13% of MSM participants had experienced problems when applying for a job and 19% had lost their job due to their gender and sexual identities.

Over 40% of waria participants had experienced problems when applying for a job and nearly 40% of them had lost their job due to their sexual identity/gender presentation. Waria participants also reported *being ignored/expelled from home* (18.9%); *a problem using health services* (20.5%); *being physically abused* (46.7%); *being sexually abused* (41.0%); *being expelled from school/left school* (15.1%); *and dropping out of school or changing schools* (25.7%).

Table 5.3 Discrimination experienced by study participants because of their sexual identity/gender presentation

Table 5.3 Discrimination experienced by study participants because of their sexual identity/gender presentation (N = 416)

Discrimination checklist, *n* (%)	**MSM**	**Waria**	**Total**
	293 (70.4)	**123 (29.6)**	**416 (100)**
Have you ever experienced problems when applying for a job?			
Yes	39 (13.3)	54 (44.3)	93 (22.4)
No	240 (81.9)	61 (50.0)	301 (72.5)

Do not know	14 (4.8)	7 (5.7)	21 (5.1)
Have you ever lost your job?			
Yes	55 (18.8)	49 (39.8)	104 (25)
No	225 (76.8)	71 (57.7)	296 (71.2)
Do not know	13 (4.4)	3 (2.4)	16 (3.8)
Have you ever been ignored/expelled from home?			
Yes	16 (5.5)	23 (18.9)	39 (9.4)
No	265 (90.4)	92 (75.4)	357 (86.0)
Do not know	12 (4.1)	7 (5.7)	19 (4.6)
Have you ever had a problem using health services?			
Yes	10 (3.4)	25 (20.5)	35 (8.5)
No	276 (94.5)	90 (73.8)	366 (88.4)
Do not know	6 (2.1)	7 (5.7)	13 (3.1)
Have you ever been physically abused (for example beaten)?			
Yes	37 (12.7)	57 (46.7)	84 (22.7)
No	252 (86.3)	56 (45.9)	308 (74.4)
Do not know	3 (1.0)	9 (7.4)	12 (2.9)
Have you ever been sexually abused?			
Yes	34 (11.6)	50 (41.0)	84 (20.3)
No	252 (86.3)	62 (50.8)	314 (75.8)
Do not know	6 (2.1)	10 (8.2)	16 (3.9)
Have you ever been detained by security?			
Yes	11 (3.8)	25 (20.5)	36 (8.7)
No	274 (93.8)	96 (78.7)	370 (89.4)
Do not know	7 (2.4)	1 (0.8)	8 (1.9)
Have you ever been expelled from / left school?			
Yes	9 (3.1)	18 (15.1)	27 (6.6)
No	276 (95.2)	97 (81.5)	373 (91.2)
Do not know	5 (1.7)	4 (3.4)	9 (2.2)
Have you ever dropped out or change schools?			
Yes	20 (6.9)	29 (25.7)	49 (12.2)
No	268 (92.4)	81 (71.7)	349 (86.6)
Do not know	2 (0.7)	3 (2.7)	5 (1.2)

Associations between characteristics and stigma and discrimination experienced by MSM and waria

Table 5.4 presents the prevalence of stigma and discrimination experienced by MSM and waria participants. When considered collectively, around half of all participants reported lower levels of stigma (53.9%) and had never experienced discrimination (53.6%). Separate analyses for each group indicated that for MSM participants, 50.5% reported lower levels of stigma and 64.5% reported no previous experience of discrimination. For waria participants, 62.7% reported lower levels of stigma and 27.6% had never experienced discrimination.

Table 5.4 Prevalence of stigma and discrimination amongst the study participants

Table 5.4 | Prevalence of stigma and discrimination amongst the study participants

Characteristics, *n* (%)	**MSM**	**Waria**	**Total**
	293 (70.4)	**123 (29.6)**	**416 (100)**
Stigma			
Lower stigma	143 (50.5)	69 (62.7)	212 (53.9)
Higher stigma	140 (49.5)	41 (37.3)	181 (46.1)
Discrimination			
Never experienced	189 (64.5)	34 (27.6)	223 (53.6)
Ever experienced	104 (35.5)	89 (72.4)	193 (46.4)

Table 5.5 presents the association between various characteristics of MSM participants and their experiences of stigma and discrimination. Among MSM participants, the odds of experiencing high levels of stigma were lower amongst non-Hindu MSM (aOR = 0.53, 95%CI = [-0.31, 0.91]). MSM for whom some of their family reject their MSM status were four times more likely to experience high levels of stigma (aOR = 4.13, 95%CI = [1.49, 11.42]), and MSM whose family members did not know their MSM status were also almost five times more likely to feel high levels of stigma (aOR = 4.94, 95%CI = [2.16, 11.33]) compared to those for whom family members accept their MSM status. Age groups, sexual identity, educational level, marital status, employment status, place of birth, current living area, and HIV status were not significantly associated with stigma amongst the MSM cohort.

However, experience of discrimination amongst MSM was significantly associated with marital status and religion. MSM who were married or living with a partner were twice as likely to experience discrimination compared to single participants (aOR = 2.04, 95%CI = [1.21, 3.45]). MSM participants with a religion

other than Hindu were nearly three times as likely as Hindu MSM participants to experience discrimination (aOR = 2.82, 95%CI = [1.56, 5.09]). After adjustment for the same covariates, age groups, sexual identity, place of birth, educational level, employment status, current living areas, and HIV status were not statistically associated with discrimination.

Table 5.6 presents the association between various characteristics and experiences of stigma and discrimination amongst waria participants. Compared to participants identifying as heterosexual/tend to be heterosexual, waria participants who self-identified as homosexual/tend to be homosexual had lower odds of experiencing high levels of stigma (aOR= 0.19, 95%CI = [0.06, 0.58]). No other variables were found to be significantly associated with stigma experienced by waria.

In relation to discrimination, there were statistically significant associations for sexual identity and daily activities/employment status. Bisexual waria participants, compared to heterosexual waria participants, had slightly lower odds of experiencing discrimination (aOR = 0.02, 95%CI = [0.00, 0.80]). Waria participants who were students/went to school/college were less likely to experience discrimination compared to those who had regular or full-time jobs (aOR = 0.13, 95%CI = [0.02, 0.89]). Other variables including age group, marital status, place of birth, current living area, and HIV status were not significantly associated with discrimination amongst waria participants.

Table 5.1 Associations between characteristics and stigma and discrimination experienced by MSM

Table 5.5 Associations between characteristics and stigma and discrimination experienced by MSM, presented with adjusted* odds ratio (aOR) and 95% confidence interval (95% CI) of aOR

Characteristics		Stigma				Discrimination			
		Lower stigma (score ≤ median)	Higher stigma (score > median)	Stigma (aOR, 95% CI)	*p-value*	Never experienced discrimination	Ever experienced discrimination	Discrimination (aOR, 95% CI)	*p-value*
Age groups									
	18-25	20 (14.0)	34 (24.3)	1		36 (19.0)	19 (18.3)	1	
	26-40	107 (74.8)	87 (62.1)	0.55 (0.29, 1.04)	0.064	126 (66.7)	75 (71.1)	1.16 (0.58, 2.32)	0.68
	41-60	16 (11.2)	19 (13.6)	0.85 (0.34, 2.14)	0.725	27 (14.3)	10 (9.6)	0.79 (0.28, 2.25)	0.665
Sexual identity									
	Heterosexual/tend to be heterosexual	24 (16.8)	20 (14.3)	1		32 (16.9)	14 (13.5)	1	
	Homosexual/tend to be homosexual	101 (70.6)	90 (64.3)	1.40 (0.68, 2.92)	0.362	122 (64.6)	77 (74.0)	1.59 (0.77, 3.29)	0.214
	Bisexual	18 (12.6)	30 (21.4)	1.56 (0.65, 3.74)	0.321	35 (18.5)	13 (12.5)	0.99 (0.39, 2.52)	0.979
Education level									
	No or elementary school	8 (5.6)	5 (3.6)	1		7 (3.7)	6 (5.8)	1	
	Junior high school	15 (10.5)	21 (15.0)	1.40 (0.35, 5.61)	0.637	19 (10.1)	18 (17.3)	1.65 (0.42, 6.53)	0.476
	Senior high school	81 (56.6)	86 (61.4)	0.92 (0.26, 3.22)	0.893	108 (57.1)	63 (60.6)	1.12 (0.32, 3.91)	0.854
	Diploma or higher	39 (27.3)	28 (20.0)	0.60 (0.16, 2.28)	0.454	55 (29.1)	17 (16.3)	0.64 (0.17, 2.46)	0.518
Marital status									
	Single (not married, widow)	93 (65.0)	97 (69.3)	1		138 (73.0)	60 (57.7)	1	
	Married/ living with a partner	50 (35.0)	43 (30.7)	0.98 (0.55, 1.74)	0.953	51 (27.0)	44 (42.3)	2.04 (1.21, 3.45)	**0.008**

Daily activities / Employment status								
Regular/full time job	77 (53.8)	75 (53.6)	1		108 (57.1)	52 (50.0)	1	
School/college	21 (14.7)	25 (17.9)	0.95 (0.45, 2.04)	0.905	30 (15.9)	17 (16.3)	1.41 (0.66, 3.00)	0.369
No job/ no school/home duties	45 (31.5)	40 (28.6)	0.92 (0.51, 1.66)	0.795	51 (27.0)	35 (33.7)	1.46 (0.81, 2.66)	0.209
Place of birth								
Bali	49 (34.3)	65 (46.4)	1		86 (45.5)	30 (28.8)	1	
Java	61 (42.7)	42 (30.0)	0.86 (0.35, 2.10)	0.746	66 (34.9)	45 (43.3)	0.79 (0.31, 1.99)	0.612
Others	33 (23.1)	33 (23.6)	1.18 (0.47, 2.96)	0.718	37 (19.6)	29 (27.9)	0.89 (0.34, 2.33)	0.821
Religion								
Hinduism	35 (24.5)	54 (38.6)	1		72 (38.1)	19 (18.3)	1	
Others	108 (75.5)	86 (61.4)	0.53 (0.31, 0.91)	**0.020**	117 (61.9)	85 (81.7)	2.82 (1.56, 5.09)	**0.001**
Current living area								
Urban	128 (89.5)	122 (87.1)	1		161 (85.2)	98 (94.2)	1	
Rural	15 (10.5)	18 (12.9)	0.79 (0.34, 1.81)	0.578	28 (14.8)	6 (5.8)	0.53 (0.20, 1.39)	0.199
HIV+ status								
Yes	52 (36.6)	39 (27.9)	1		61 (32.3)	32 (31.1)	1	
No /Do not know	90 (63.4)	101 (72.1)	1.30 (0.76, 2.24)	0.343	128 (67.7)	71 (68.9)	1.44 (0.82, 2.56)	0.207
Family attitudes on sexual identity status								
All accept	32 (22.5)	8 (5.8)	1		24 (12.8)	17 (16.5)	1	
Some accept/reject	18 (12.7)	19 (13.7)	4.13 (1.49, 11.42)	**0.006**	20 (10.6)	18 (17.5)	1.49 (0.57, 3.92)	0.415
Family does not know	92 (64.8)	112 (80.6)	4.94 (2.16, 11.33)	**<0.001**	144 (76.6)	68 (66.0)	0.84 (0.39, 1.80)	0.395

1. *adjusted for age, sexual identity, education level, marital status, employment status, place of birth, religion, current living area, and HIV+ status.

Table 5.1 Associations between characteristics and stigma and discrimination experienced by waria

Table 5.6 Associations between characteristics and stigma and discrimination experienced by transgender, presented with adjusted* odds ratio (aOR) and 95% confidence interval (95% CI) of aOR

Characteristics	Stigma				Discrimination			
	Lower stigma (score ≤ median)	Higher stigma (score > median)	Stigma (aOR, 95% CI)	p-value	Never experienced discrimination	Ever experienced discrimination	Discrimination (aOR, 95% CI)	p-value
Age groups								
18-25	7 (10.1)	6 (14.6)	1		4 (11.8)	10 (11.2)	1	
26-40	44 (63.8)	31 (75.6)	0.62 (0.18, 2.14)	0.454	19 (55.9)	66 (74.2)	0.79 (0.14, 4.41)	0.784
41-60	18 (26.1)	4 (9.8)	0.31 (0.06, 1.48)	0.142	11 (32.4)	13 (14.6)	0.56 (0.08, 4.19)	0.574
Sexual identity								
Heterosexual/tend to be heterosexual	5 (7.2)	12 (29.3)	1		4 (11.8)	17 (19.1)	1	
Homosexual/tend to be homosexual	61 (88.4)	28 (68.3)	0.19 (0.06, 0.59)	**0.004**	27 (79.4)	71 (79.8)	0.75 (0.15, 3.74)	0.723
Bisexual	3 (4.3)	1 (2.4)	0.14 (0.01, 1,68)	0.121	3 (8.8)	1 (1.1)	0.02 (0.00, 0.80)	**0.038**
Education level								
No or elementary school	16 (23.2)	11 (26.8)	1		9 (26.5)	25 (28.1)	1	
Junior high school	17 (24.6)	14 (34.1)	1.42 (0.41, 4.89)	0.578	10 (29.4)	24 (27.0)	0.93 (0.25, 3.49)	0.911
Senior high school	31 (44.9)	13 (31.7)	0.72 (0.20, 2.57)	0.616	14 (41.2)	33 (37.1)	1.42 (0.39, 5.16)	0.593
Diploma or higher	5 (7.2)	3 (7.3)	1.10 (0.15, 7.82)	0.926	1 (2.9)	7 (7.9)	28.60 (1.24, 657.43)#	0.036
Marital status								
Single (not married, widow)	53 (76.8)	28 (68.3)	1		25 (73.5)	68 (76.4)	1	
Married/living with a partner	1 (23.2)	1 (31.7)	0.98 (0.34, 2.75)	0.961	9 (26.5)	21 (23.6)	0.70 (0.21, 2.40)	0.575
Employment status								
Regular/full time job	35 (50.7)	26 (63.4)	1		15 (44.1)	50 (56.2)	1	

School/college	4 (5.8)	3 (7.3)	0.60 (0.10, 3.51)	0.563	4 (11.8)	4 (4.5)	0.13 (0.02, 0.89)	**0.038**
No job/ no school/home duties	30 (43.5)	12 (29.3)	0.48 (0.17, 1.32)	0.155	15 (44.1)	35 (39.3)	0.39 (0.13, 1.15)	0.089
Place of birth								
Bali	25 (36.2)	19 (46.3)	1		21 (61.8)	25 (28.1)	1	
Java	31 (44.9)	14 (34.1)	0.40 (0.14, 1.12)	0.081	12 (35.3)	41 (46.1)	0.27 (0.02, 4.24)	0.35
Others	8 (18.8)	13 (19.5)	0.44 (0.13, 1.53)	0.194	1 (2.9)	23 (25.8)	1.85 (0.06, 52.33)	0.718
Religion								
Hinduism	21 (30.4)	12 (29.3)	1		19 (55.9)	16 (18.0)	1	
Others	48 (69.6)	29 (70.7)	2.70 (0.51, 14.26)	0.244	15 (44.1)	73 (82.0)	21.77 (1.34, 353.81)#	0.030
Current living area								
Urban	55 (79.7)	33 (80.5)	1		23 (67.6)	77 (86.5)	1	
Rural	14 (20.3)	8 (19.5)	0.99 (0.24, 4.00)	0.986	11 (32.4)	12 (13.5)	0.48 (0.10, 2.29)	0.357
HIV+ status								
Yes	28 (40.6)	18 (45.0)	1		13 (38.2)	39 (44.3)	1	
No/ Do not know	41 (59.4)	22 (55.0)	0.65 (0.27, 1.57)	0.34	21 (61.8)	49 (55.7)	0.88 (0.28, 2.72)	0.819
Family attitudes on sexual identity status								
All accept	44 (64.7)	19 (46.3)	1		22 (66.7)	48 (54.5)	1	
Some accept/reject	14 (20.6)	15 (36.6)	1.95 (0.70, 5.48)	0.204	3 (9.1)	29 (33.0)	4.48 (0.87, 23.00)	0.073
Family does not know	10 (14.7)	7 (17.1)	1.79 (0.49, 6.53)	0.375	8 (24.2)	11 (12.5)	0.603 (0.15, 2.42)	0.476

1. *adjusted for age, sexual identity, education level, marital status, employment status, place of birth, religion, current living area, and HIV+ status
2. #prediction was too imprecise to illustrate the relationships

Discussion

In Indonesia, for over a decade, groups supporting gender and sexual diversity have advocated against stigma and discrimination (Ridwan and Wu 2018). In Indonesia same sex relations are not criminalized (except in the Aceh Province which has adopted Sharia law), hence providing opportunity for popular gay and waria entertainers to perform on television. The same sex attracted and gender diverse community is largely accepted, especially in urban areas. However, some movements (specific religion activists and some politicians) reject the existence of gender and sexual diverse people stating, "LGBT is a disease, not a human right" (Mollman 2016).

Several studies conducted throughout Indonesia demonstrate a high prevalence of stigma around sexual identity and HIV (Desyani, Waluyo et al. 2019, Victoryna, Yona et al. 2019, Waluyo, Mansyur et al. 2021), especially among female sex workers and MSM (Wirawan 2019). Experience of stigma varied between sub-domains for MSM participants in this study. MSM participants reported high levels of stigma related to disclosure with 63.9% of MSM participants reporting they kept their sexual orientation a secret and 74.3% indicating they were careful when speaking to others about their sexual orientation. Studies in Myanmar and China suggest hidden MSM often do not disclose their same-sex behaviour but engage in identity practice negotiation by never admitting that they are MSM as a strategy to avoid stigma and discrimination from their families and communities (Steward, Miège et al. 2013, Veronese, Clouse et al. 2019). The need to hide their identity may exacerbate barriers for MSM around their sexual health seeking behaviours (Veronese, Clouse et al. 2019). However, concealment of sexual orientation amongst sexual minority communities in 28 highly stigmatized countries has been found to partially protect individuals against discrimination and victimization, even though this concealment may compromise their life satisfaction (Pachankis and Bränström 2018).

As most MSM participants in this study did not disclose their MSM status to their family (72.9%), it may be that, as a hidden population, their sexual identity was not recognized publicly, hence these participants may have been less likely to experience discrimination. An Indonesian study conducted in Bandung found of the 13% of young MSM who disclosed their MSM status to their families, one-third experienced stigma and discrimination (Johnston, Soe et al. 2021). Others have found adolescent MSM were pressured to hide their sexual identity to avoid rejection and

hostility (Harrison 2003). A qualitative study conducted in China found MSM to fear stigma; however, as most had not disclosed their status, they had not personally experienced discrimination. Participants also reported cultural pressures associated with the expectations that sons will marry (Steward, Miège et al. 2013). Almost three quarters (72.4%) of waria participants, who are less able to hide their identity than MSM participants, reported to have experienced at least one type of discrimination. Islamic beliefs in Indonesia suggest being transgender or waria is considered to be a deviation from human nature (Afif 2019). Others have reported similar findings (Lombardi, Wilchins et al. 2002, Altman, Aggleton et al. 2012, Ojanen, Burford et al. 2019). Altman, Aggleton et al. (2012) reported the prejudice and discrimination experienced by waria is undoubtedly far greater than that encountered by other MSM in many societies. Moreover, transgender women participants in Thailand reported experiences of employment discrimination and faced difficulties when applying for a job (Ojanen, Burford et al. 2019). Another study revealed the more people are aware of an individual's status as transgender women, the greater probability of violence and discrimination (Lombardi, Wilchins et al. 2002). Currently there are no published studies focusing on waria acceptance in Balinese society.

This study found factors significantly associated with overall stigma amongst MSM participants included religion and family disclosure and acceptance. Non-Hindu MSM were significantly more likely to report lower levels of stigma compared to Hindu participants. This may be because these participants were more likely to be born outside Bali, whereas Hindu participants who are native to Bali may feel more stigma since they live in their own community. This is consistent with the concept that stigma is universal, but experiences are local (Murthy 2002). Local people may experience perceived stigma, be more concerned about disclosing their sexual identity, more concerned about local people's attitude towards them, and therefore have more negative self-image compared to those who have not grown up in the community. Rural gay men in Pennsylvania, US, found exposure to stigma was predominant in the areas in which these gay men lived (Preston, D'augelli et al. 2007).

Family attitudes towards MSM status of participants were strongly associated with stigma for MSM. MSM who reported some family members accepted while others rejected their status reported higher levels of stigma compared to those for whom all family members accepted their MSM status. Elsewhere, same sex and gender diverse participants were more likely to feel excluded and gossiped about by family

members, when family were aware of their sexual attraction or gender identity. It was not reported in this Eswatini study if family accepted participants' sexuality or gender status (Lyons, Stahlman et al. 2019). These findings confer with those of this study suggesting MSM may hide their identity from family to avoid discrimination.

Participants who were married and/or living with a partner were more likely to experience discrimination compared to those MSM who were single, not married or widowed. In Indonesia, it is perceived that a man should get married to a woman and be a responsible and dutiful husband (Boellstorff 2005). Being married is one way to hide sexual orientation from family and communities, to preserve family and keep the family free from ridicule. Due to the cross-sectional nature of this study, and the focus on lifetime experience of discrimination, it was not known if discrimination or marriage occurred first. Similarly, in China marriage is considered part of fulfilling the social and family expectation and is used as a strategy of MSM to avoid discrimination from the society (Steward, Miège et al. 2013). In India MSM were likely to marry females in order to follow societal norms and to have children (Solomon, Mehta et al. 2010). Moreover, in Asian countries, religion and traditional beliefs highlight that lack of a female relationship mirrors some sort of "problem" with the person, either physical or psychological, suggesting some type of "abnormality" associated with being single/unmarried (Liu and Choi 2006), therefore, marriage is a strategy to overcome the "problem".

MSM participants who follow religions other than Hinduism were more likely to experience discrimination compared to Hindu participants. Intersectionality theory suggests an individual's identity is heterologous, meaning multiple variables are likely to influence identity (Atewologun 2018). This theory offers theoretical explanations of the ways in which heterogeneous members of specific groups (such as MSM) might experience discrimination differently, not only depending on one social variable but multiple social variables such as their religion, ethnicity, and other social factors (Atewologun 2018). For example, a Hindu, Balinese born MSM teenager may experience discrimination differently compared to a Muslim, non-Balinese born MSM adult due to a range of ecological factors.

Factors that significantly influenced stigma and discrimination amongst waria participants included sexual identity and employment status, education level, and religion. However, education level and religion were too imprecise to illustrate the relationship with discrimination due to wide 95% confidence intervals. Waria

participants who identified as bisexual were significantly less likely to experience discrimination compared to those who identified as heterosexual. In contrast, a qualitative study conducted in Timor Leste found *mane-forte* (heterosexual identifying men) discussed hiding their sexual relationships with MSM and waria; sustaining their masculine identity with women; and having more evident relationships with women to prevent discrimination (Niven, Jose et al. 2018).

Conclusion

Despite varying levels of stigma and discrimination experienced by MSM in Bali, higher levels of stigma were influenced by religion and familial support. Discrimination was significantly influenced by marital status and religion. Amongst waria, sexual identity influenced stigma, while sexual identity and employment status were significant factors for discrimination. Harm reduction strategies to address stigma and discrimination may improve the health and wellbeing of MSM and waria. The community-engaged research focus of this project provides opportunity for the development of relevant strategies with the non-government organizations involved with this project. Advocacy for government led policy and practice should also occur. The findings highlight the need for specific strategies to engage families as familial support found as a significant factor in reducing stigma amongst MSM. Advocacy for legislation to reduce workplace discrimination is important as currently there is no anti-discrimination in workplace law specific to LGBT people in Indonesia (Equaldex 2022).

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Declaration of interest statement

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Data availability statement

Derived supporting data of this study are available on request from the corresponding author. Access data set requests should be directed to Ni Wayan Septarini, septarini@unud.ac.id.

5.3 Submitted paper: Social-ecological factors on attitudes towards condom use amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia

The following paper was submitted to the *Journal of Homosexuality* on July 19, 2022. This paper focuses on part of objective 1, *to explore factors that influence sexual health attitudes and behaviour among MSM and waria in Bali*.

Social-ecological factors on attitudes towards condom use amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia

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Abstract

Limited research reporting the relationship between socio-ecological factors and condom attitudes of MSM and transgender people exists. Employing a cross-sectional study design, socio-ecological factors associated with condom attitudes amongst 416 ethnically diverse Indonesian MSM and waria living in Bali, Indonesia were explored.

Amongst MSM, non-Hindu MSM reported a less supportive condom use attitudes score [adjusted β = -1.414; 95% CIs (-2.558, -.270); p = .016] whilst a higher condom use knowledge score was associated with more positive condom attitudes [adjusted β = .486; 95% CIs (.194, .778); p = .001]. A higher stigma score was associated with less positive condom attitudes [adjusted β = -.298; 95% CIs (-.493, -.104); p = .007] and those who were "unsure" if it was safe to live in Bali reported more positive condom use attitudes [adjusted β: 2.793; 95% CIs (.786, 4.800); p = .007]. Amongst waria participants, a higher number of commercial sex partners was associated with less positive condom attitudes [adjusted β =-.414; 95% CIs (-.782, -.045); p = .029].

Since different socio-ecological factors were found to be associated with condom attitudes amongst MSM and waria, future research may consider focusing on different individual, interpersonal and societal factors when designing interventions to address attitudes.

Keywords: Attitudes, Condom use, Community-engaged research, MSM, Transgender women

Introduction

Negative attitude toward condoms have been found to be highly associated with risky sexual behaviours (Klein and Kaplan 2012); however, little has been reported about condom use attitudes and associated determinants specifically amongst men who have sex with men (MSM) and transgender communities. Studies have been conducted around condom use attitudes as one determinant of condom use behaviours; for example, condom use attitudes have been found to be related closely to involvement in sexual risk practices among males (Klein and Kaplan 2012). Others have found a positive association with positive condom use attitudes, and protected sex amongst MSM (Klein and Kaplan 2012, Bavinton, Mahendra et al. 2021). Wang, Jia et al.

(2019) suggested increases in consistent condom use amongst Chinese MSM may be achieved by improving MSM's attitudes toward condom. Understanding condom use attitudes is an important factor to improve sexual health by preventing HIV infection amongst the MSM community (Klein and Kaplan 2012).

Attitudes toward condom use (referred to in this paper as condom attitudes) can predict the use of condoms (Wang, Jia et al. 2019). However, intention to use condoms is complex and is often influenced by a range of socio-ecological factors. One study identified seven factors which significantly contributed to condom use attitudes amongst MSM in the US. The study found significantly higher positive condom use attitudes amongst participants with higher self-esteem and amongst African American men compared to other racial groups (Klein and Kaplan 2012). More negative attitudes towards condom use were found among participants with higher education, who did not care about the HIV zero-status of potential partners, who wanted their sex to be "wild," with a greater number of drug-related problems, and those who believed in the accuracy of what their sex partners told them about their HIV sero-status (Klein and Kaplan 2012). Helweg-Larsen and Collins (1994) identified five dimensions of condom use attitudes including "reliability and effectiveness; embarrassment about purchase; embarrassment about negotiation; stigma; and pleasure." No similar study appears to have been undertaken with transgender women. Research from other countries, especially high-income countries, may not be applicable to Indonesia, where unique cultural and policy differences exist. To the best of the authors' knowledge, no research in Asia has reported the predictors/factors that influenced condom use attitudes specifically amongst MSM and transgender communities. This paper presents condom use attitudes of MSM and waria (a specific indigenous term in Indonesian culture "to describe people who form same- sex relationships and those who exhibit non-binary gender identities" in Bali, Indonesia, including analyses of predictors of the condom use attitudes from socio- ecological factors at an (i) individual-level, (ii) interpersonal-level, and (iii) community-level. The socio-ecological attitudes framework (Figure 5.1) was modified from a study of socio-ecological factors that shape gender attitudes (Kågesten, Gibbs et al. (2016).

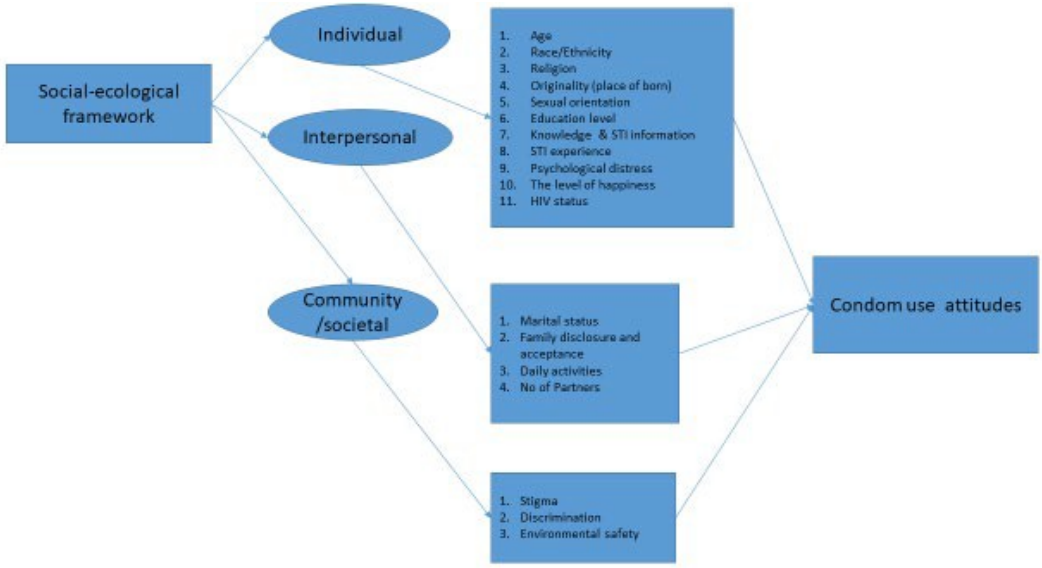

Figure 5.1 Socio-ecological factors investigated.

Methods

Study design and recruitment

An online cross-sectional survey was conducted during the coronavirus (COVID-19) pandemic from July to September 2020 using the Qualtrics platform. Ten Balinese-based research partners who were involved in the project recruited participants using the snowball technique. Inclusion criteria included: 18 years or older, Indonesian citizens who had lived in Bali for a minimum of six months and intended to remain in Bali for at least the next six months, identify as transgender (waria) or male, and in the previous six months had been engaged in sexual activity with a man or transgender person (Septarini, Burns et al. 2021). Interested individuals provided informed consent and were free to withdraw from the survey at any time prior to submission. Further details regarding the study protocol have been published elsewhere (Septarini, Burns et al. 2021).

Data collection

The online survey was administered in Bahasa Indonesia and included validated measures and questions adapted from previous relevant studies (Lim, Bazazi et al. 2013, García, Duong et al. 2014, Mun, Chhim et al. 2016, Reinius, Wettergren et al. 2017, Septarini, Burns et al. 2021). Four Indonesian public health experts and the ten research partners reviewed the survey for face and content validity (Septarini, Burns et al. 2021).

Social-ecological characteristics included this study are: (i) individual-level, (ii) interpersonal-level, and (iii) community-level factors (Figure 5.1). Individual-level factors included: age; sexual identity; place of birth; religion; education level; condom use/STIs knowledge; received sexually transmitted infection (STI) information; have had an STI in the past six months; psychological stress level; happiness level; and Human Immunodeficiency Virus (HIV) infection status. Interpersonal-level factors included: marital status; family disclosure and acceptance of sexual identity; daily activities; and number of partners. Community-level factors included: stigma (using the 12-item short version of the HIV stigma scale) (Reinius, Wettergren et al. 2017); discrimination (based on previously validated measures) (Mun, Tuot et al. 2016); and environmental safety. This paper is focused on condom use attitudes and determinants; condom use behaviours and determinants will be described separately.

Condom use attitudes

Condom use attitudes were assessed with a 5-item scale adapted from previous studies (Cronbach's a=0.75) (Thomas, Lansky et al. 1999, Widman, Golin et al. 2013). This scale included questions about perception of comfort of use; if condom use takes the fun out of sex; embarrassment when buying condoms; accessibility; and affordability of condoms (4-point scale ranging from 1 to 4 for strongly agree to strongly disagree). Higher scores indicate a more positive attitude towards condom use.

Data analysis

Data were analysed using SPSS V.26. Mean, standard deviation, and range of continuous socio-ecological measures as well as frequency and percentage of

categorical measures were reported. Separate analysis was conducted for MSM and waria participants. Frequencies for each response category of condom use attitudes variables were also reported. Multiple linear regression (MLR) models were performed to assess associations between socio-ecological factors and condom use attitude total score for MSM and transgender participants, separately. Statistical significance was set at $p < 0.05$. The associations were adjusted for age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, STI information received, STI experience, psychological distress, level of happiness, HIV infection status, marital status, family disclosure and acceptance about the sexual identity, employment status, number of partners, stigma, discrimination, and environmental safety. The adjusted beta coefficient (β) and 95% confidence intervals (95% CIs) of adjusted β were reported.

Results

Participants' characteristics

Of the 416 Indonesian MSM and waria living in Bali who participated in this study, over 70% (*n* = 293) were MSM. Table 5.7 describes individual, interpersonal and community level characteristics.

Individual-level factors

The mean age of MSM was 31.9 years. Ages ranged from 18 to 59 years. Most MSM self-identified as homosexual or tend to be homosexual (*n* = 199; 67.9%), were born in Bali (*n* = 116; 39.6%), reported a moderate to very high level of psychological distress (*n* = 200; 68.3%), and viewed themselves as less happy than the average person (*n* = 256; 87.4%). One third of MSM participants were HIV positive (*n* = 93; 31.8%).

The mean age of waria participants was 34.5 years old. Most waria participants self-identified as homosexual or tend to be homosexual (*n* = 98; 79.7%), were born in Java (*n* = 53; 43.1%), reported a moderate to very high level of psychological distress (*n* = 96; 78%), and viewed themselves as less happy than the average person (*n* = 105; 85.4%). Half of all waria participants were HIV positive (*n* = 63; 51.6%).

Interpersonal-level factors

Most MSM participants were single (*n* = 198; 67.6%), and their family did not know about their sexual identity (*n* = 212; 72.9%). More than half had a regular/full time job (*n* = 160; 54.6%). The majority of MSM participants had one regular partner (*n* = 154; 52.6%), 2-4 casual partners (*n* = 87; 29.8%), and no commercial sex partner (*n* = 193, 66.1%).

Most waria participants were single (*n* = 93; 75.6%). Waria participants whose family that knew about their sexual identity felt most (*n* = 70; 57.9%) or some (*n* = 27; 22.3%) family members accepted their sexual identity. More than half of waria had a regular/full time job (*n* = 65; 52.8%). Nearly half of waria participants had one regular partner (*n* = 59; 48.0%), one third had more than 10 casual partners (*n* = 37; 30.1%), and more than half had more than 10 commercial partners (*n* = 66; 53.7%).

Community-level factors

Most MSM participants reported lower stigma (*n* = 198; 67.6%), a previous experience of discrimination (*n* = 160; 54.6%), and felt that Bali is a very safe environment to live as a MSM (*n* = 149; 53.4%).

More than two thirds of waria participants reported lower levels of stigma (*n* = 93; 75.6%). More than half had "ever experienced" one sort of discrimination (*n* = 65; 52.8%) and most felt that Bali is a very safe environment to live as waria (*n* = 72; 63.7%).

Table 5.7 Socio-ecological characteristics of the study participants

Table 5.7 | Socio-ecological characteristics of the study participants

Characteristics	**MSM** ***n* = 293 (70.4%)**	**Transgender** ***n* = 123 (29.6%)**
Individual-level factors		
Age (in years)		
Mean (SD)	32.0 (7.5)	34.5 (8.2)
Min-Max	18-59	19-55
Sexual identity, n(%)		
Heterosexual/tend to be heterosexual	46 (15.7)	21 (17.1)
Homosexual/tend to be homosexual	199 (67.9)	98 (79.7)
Bisexual	48 (16.4)	4 (3.3)
Place of birth, n (%)		
Bali	116 (39.6)	46 (37.4)
Java	111 (37.9)	53 (43.1)

Others	66 (22.5)	24 (19.5)
Religion, n(%)		
Hindu	91 (31.1)	35 (28.5)
Muslim	161 (54.9)	73 (59.3)
Others	41 (14.0)	15 (12.2)
Education level, n(%)		
No or elementary school	13 (4.4)	34 (27.6)
Junior high school	37 (12.6)	34 (27.6)
Senior high school	171 (58.4)	47 (38.2)
Diploma or higher	72 (34.6)	8 (6.5)
Condom use/STIs knowledge (total score)		
Median (IQR)	9.0 (1.0)	9.0 (1.0)
Min-max	5-10	5-10
Received STI information, n(%)		
Yes	281 (95.9)	117 (95.1)
No	12 (4.1)	6 (4.9)
Have had an STI in the past 6 months, n(%)		
Yes	115 (39.2)	39 (31.7)
No	176 (60.1)	73 (59.3)
Do not know	2 (0.7)	11 (8.9)
Psychological distress, n(%)		
Low	93 (31.7)	27 (22.0)
Moderate to very high	200 (68.3)	96 (78.0)
Level of happiness, n(%)		
Less happy than average person	256 (87.4)	105 (85.4)
Happier than average person	37 (12.6)	18 (14.6)
HIV status, n(%)		
HIV positive	93 (31.8)	52 (42.6)
HIV negative	190 (65.1)	63 (51.6)
Do not know/ have never tested for HIV	9 (3.1)	7 (5.7)
Interpersonal-level factors		
Marital status, n(%)		
Single	198 (67.6)	93 (75.6)
Married	30 (10.2)	3 (2.4)
Widowed/separated	10 (3.4)	0
Living with a partner	55 (18.8)	27 (22.0)
Family disclosure & acceptance on sexual identity, n (%)		
All accept	41 (14.1)	70 (57.9)
Some accept, some reject	29 (10.0)	27 (22.3)
Family do not know about the sexual identity	212 (72.9)	19 (15.7)
Employment status, n(%)		
Regular/full time job	160 (54.6)	65 (52.8)
School/college	47 (16.0)	8 (6.5)
No school/ no job/home duties	86 (29.4)	50 (40.7)
No of partners, n(%)		
Regular partner (s), n(%)		
Do not have a regular partner	69 (23.5)	39 (31.7)
1	154 (52.6)	59 (48.0)
2-4	52 (17.7)	9 (7.3)
5-10	13 (4.4)	5 (4.1)
More than 10	5 (1.7)	11 (8.9)

Casual partner (s), n (%)		
Do not have a casual partner	86 (29.5)	15 (12.2)
1	66 (22.6)	21 (17.1)
2-4	87 (29.8)	32 (26.0)
5-10	28 (9.6)	18 (14.6)
More than 10	25 (8.6)	37 (30.1)
Commercial partner (s), n (%)		
Do not have a commercial partner	193 (66.1)	27 (22.0)
1	45 (15.4)	9 (7.3)
2-4	32 (11.0)	11 (8.9)
5-10	10 (3.4)	10 (8.1)
More than 10	12 (4.1)	66 (53.7)
Community-level factors		
Stigma, n(%)		
Lower stigma (score ≤ median)	198 (67.6)	93 (75.6)
Higher stigma (score > median)	30 (10.2)	3 (2.4)
Discrimination, n(%)		
Have ever experienced discrimination	160 (54.6)	65 (52.8)
Never experienced discrimination	47 (16.0)	8 (6.5)
Environmental safety ("safer to live in Bali"), n(%)		
Yes, very safe	149 (53.4)	72 (63.7)
Yes, mostly safe	119 (42.7)	40 (35.4)
No, it is not safe	6 (2.2)	0
Unsure	5 (1.8)	1 (0.9)

Condom use attitudes amongst MSM and waria in Bali

Table 5.8 describes condom use attitudes amongst MSM and waria participants, for each construct. Amongst MSM participants, the majority *disagreed/strongly disagreed* that using a condom makes them feel uncomfortable (*n* = 227; 78%). However, most *strongly agreed/agreed* that using a condom eliminates/reduces sexual pleasure (*n* = 155; 53.8%). Most MSM participants *disagreed/strongly disagreed* that buying condom was embarrassing (*n* = 205; 70.7%); that it was difficult to find condoms in Bali (*n* = 274; 94.4.0%); and that the price of condoms is expensive (*n* = 214; 74%).

Waria participants were comfortable using condoms, with the majority disagreeing/strongly disagreeing with the statement “using a condom makes you feel uncomfortable” (*n* = 113; 91.9%). However, waria *strongly agreed/agreed* that using condom reduces sexual pleasure (*n* = 68; 55.8%). Most waria participants *disagreed/strongly disagreed* that buying a condom was embarrassing (*n* = 82; 67.3%);

that it was difficult to get condoms in Bali (*n* = 108; 88.6%); and that the price of condoms was not affordable (*n* = 64; 54.7%).

Table 5.8 Condom use attitudes of study participants

Table 5.8	Condom use attitude of study participants (*N* = 416), *n* (%)		
Condom use attitudes, *n* (%)	**MSM 293 (70.4%)**	**Transgender 123 (29.6%)**	**Total 416 (100%)**
Using a condom makes you feel uncomfortable			
Strongly agree	11 (3.8)	0 (0.0)	19 (4.6)
Agree	45 (15.5)	10 (8.1)	55 (13.3)
Disagree	142 (48.8)	59 (48.0)	201 (48.6)
Strongly disagree	85 (29.2)	54 (43.9)	139 (33.6)
Using condoms eliminates / reduces sexual pleasure			
Strongly agree	37 (12.8)	13 (10.7)	50 (12.2)
Agree	118 (41.0)	55 (45.1)	173 (42.2)
Disagree	117 (40.6)	43 (35.2)	160 (39.0)
Strongly disagree	16 (5.5)	11 (9.0)	27 (6.6)
Buying a condom is embarrassing			
Strongly agree	18 (6.2)	14 (11.5)	32 (7.8)
Agree	67 (23.1)	26 (21.3)	93 (22.6)
Disagree	171 (59.0)	64 (52.5)	235 (57.0)
Strongly disagree	34 (11.7)	18 (14.8)	52 (12.6)
It is difficult to get condoms in Bali			
Strongly agree	0 (0.0)	5 (4.1)	5 (1.2)
Agree	16 (5.5)	9 (7.4)	25 (6.1)
Disagree	177 (61.0)	64 (52.5)	241 (58.5)
Strongly disagree	97 (33.4)	44 (36.1)	141 (34.2)
The price of condoms is expensive / not affordable			
Strongly agree	7 (2.4)	15 (12.8)	22 (5.4)
Agree	68 (23.5)	38 (32.5)	106 (26.1)
Disagree	176 (60.9)	49 (41.9)	225 (54.1)
Strongly disagree	38 (13.1)	15 (12.8)	53 (13.1)

Association between socio-ecological factors and condom use attitudes score amongst MSM

Two of the individual-level factors were significantly associated with condom attitude score after adjusting for covariates among MSM participants (Table 5.9). A higher total condom use knowledge score was found to be significantly associated with more positive condom use attitude [adjusted β = .4986; 95% CIs (.194, 0.778); p = .001]. While condom attitudes scores were similar between the Hindu and Muslim MSM cohorts, non-Hindu MSM reported a lower condom use attitude score [adjusted β = -1.414; 95% CIs (-2.558, -.270); p = .016], indicating they had less positive condom use attitude compared to Hindu MSM.

Whilst none of the interpersonal-level factors were associated with the total condom use attitude score, two of the community-level factors were associated with condom attitude score amongst MSM participants after adjusting for covariates. A higher stigma score was found to be associated with less positive condom use attitude [adjusted β = -.298; 95% CIs (-.493, -.104); p = .007]. In contrast, MSM participants who were "unsure" if it was safe to live in Bali reported a more positive condom use attitude [adjusted β = 2.793; 95% CIs (.786, .800); p = .007] than MSM who commented it was "very safe" to live in Bali (Table 5.9).

Table 5.9 Multiple linear regression of total condom use attitude score with socio-ecological characteristics amongst MSM participants.

Table 5.9 Multiple linear regression of total condom use attitude score with socio-ecological characteristics amongst MSM participants, presented with adjusted* coefficient (β) and 95% confidence interval (95% CI) of β

Characteristics	Total condom use attitude score[#]		
	β	**95% CIs**	***p-value***
Individual-level factors			
Age	-.002	-.044 , .040	.926
Sexual identity			
Heterosexual/tend to be heterosexual		Ref	
Homosexual/tend to be homosexual	-.317	-1.291 , .657	.522
Bisexual	-.245	-1.350 , .859	.665
Place of birth			
Bali		Ref	
Java	.725	-.227 , 1.677	.135
Others	.183	-.480 , -1.449	.323
Religion			
Hindu		Ref	
Muslim	-.835	-1.843 , .173	.104

Others	-1.414	-2.558 , (-0.270)	**.016**
Education level			
No or elementary school		Ref	
Junior high school	-.186	-1.722 , 1.349	.811
Senior high school	.281	-1.079 , 1.641	.684
Diploma or higher	-.022	-1.476 , 1.431	.976
Condom use/STIs knowledge (total score)	.486	.194 , .778	**.001**
Received STI information			
Yes		Ref	
No	-1.385	-3.113 , .342	.115
STI experience			
Yes		Ref	
No	.262	-.357 , .880	.405
Do not know	-.790	-5.366 , 3.807	.738
Psychological distress			
Low		Ref	
Moderate to very high	.601	-.011 , 1.212	.054
Level of happiness			
Less happy than average person		Ref	
Happier than average person	-.007	-.881 , .868	.988
HIV status			
HIV positive		Ref	
HIV negative	.620	-.075 , 1.315	.080
Do not know/ have never tested for HIV	.160	-1.627 , 1.947	.860
Interpersonal-level factors			
Marital status			
Single		Ref	
Married	-.353	-1.353 , .647	.487
Widowed/separated	.723	-.899 , 2.346	.381
Living with a partner	-.359	-1.190 , .472	.395
Family disclosure & acceptance on sexual identity			
All accept		Ref	
Some accept, some reject	.276	-.778 , 1.330	.606
Family do not know about the sexual identity	.457	-.364 , 1.278	.274
Daily activities / Employment status			
Regular/full time job		Ref	
School/college	.251	-.646 , 1.149	.582
No job/ no school/home duties	.148	-.534 , .829	.669
Number of partners (on each type of partner)			
Regular partner (s)	-.093	-.432 , .247	.591
Casual partner (s)	-.074	-.325 , .176	.560
Commercial partner (s)	.135	-.151 , .420	.353
Community-level factors			
Stigma (score)	-.298	-.493 , (-.104)	**.003**

Discrimination			
Have ever experienced discrimination		Ref	
Never experienced discrimination	-.041	-.654 , .571	.894
Environmental safety ("safer to live in Bali")			
Yes, very safe		Ref	
Yes, mostly safe	.177	-.416 , .770	.556
No, it is not safe	-.749	-2.563 , -1.066	.417
Unsure	2.793	.786 , 4.800	**.007**

1. *adjusted for age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, STI information received, STI experience, psychological distress, level of happiness, HIV infection status, marital status, family disclosure and acceptance about the sexual identity, employment status, number of partners, stigma, discrimination, and environmental safety; adjusted R-squared value = 0.1080.
2. # positive β indicates more positive condom use attitude; negative β indicates less positive condom use attitude

Association between socio-ecological factors and condom use attitudes score amongst waria participants

Table 5.10 describes the association between condom use attitudes and socio-ecological characteristics after adjusting for covariates amongst waria participants. None of the individual or community-level factors were associated with the total condom use attitude score. A higher number of commercial partners was found to be associated with less positive condom use attitude [adjusted β = -.414; 95% CIs (-.782, -.045); p = .029]. This factor was the only interpersonal level factor found to be associated with condom use attitude amongst waria.

Table 5.10 Multiple linear regression of total condom use attitude score with socio-ecological characteristics amongst waria participants

Table 5.10 Multiple linear regression of total condom use attitude score with socio-ecological characteristics amongst transgender participants, presented with adjusted* coefficient (β) and 95% confidence interval (95% CI) of β

Characteristics	Total condom use attitude score#		
	β	**95% CIs**	***p-value***
Individual-level factors			
Age	.053	-.014 , .12	.118
Sexual identity			
Heterosexual/tend to be heterosexual		Ref	
Homosexual/tend to be homosexual	.857	-.420 , 2.134	.185
Bisexual	1.723	-3.145 , 6.601	.481

Place of birth				
	Bali		Ref	
	Java	.326	-1.810 , 2.461	.762
	Others	.183	-1.999 , 2.266	.867
Religion				
	Hindu		Ref	
	Muslim	.673	-1.393 , 2.739	.518
	Others	.645	-2.215 , 3.505	.654
Education level				
	No or elementary school		Ref	
	Junior high school	.438	-.856 , 1.733	.501
	Senior high school	.915	-.371 , 2.201	.160
	Diploma or higher	.068	-2.115 , 2.251	.951
Condom use/STIs knowledge (total score)		.396	-.112 , .905	.124
Received STI information				
	Yes		Ref	
	No	.415	-1.837 , 2.667	.714
STI experience				
	Yes		Ref	
	No	-.151	-1.447 , 1.144	.816
	Do not know	-.699	-2.601 , 1.205	.466
Psychological distress				
	Low		Ref	
	Moderate to very high	.72	-.654 , 2.093	.299
Level of happiness				
	Less happy than average person		Ref	
	Happier than average person	.805	-.688 , 2.298	.285
HIV status				
	HIV positive		Ref	
	HIV negative	.344	-.816 , 1.505	.555
	Do not know/ have never tested for HIV	-1.178	-3.551 , 1.195	.325
	Interpersonal-level factors			
Marital status				
	Single		Ref	
	Married	-3.556	-9.461 , 2.349	.233
	Widowed/separated		N/A	
	Living with a partner	-.239	-1.390 , .912	.679
Family disclosure & acceptance on sexual identity				
	All accept		Ref	
	Some accept, some reject	-.220	-1.387 , .957	.710
	Family do not know about the sexual identity	1.133	-.421 , 2.686	.150
Daily activities / Employment status				
	Regular/full time job		Ref	
	School/college	-.307	-2.830 , 2.216	.809
	No job/ no school/home duties	.292	-.837 , 1.421	.607

Number of partners (for each type of partner)			
Regular partner (s)	.166	-.265 , .596	.445
Casual partner (s)	.472	-.008 , .952	.054
Commercial partner (s)	-.414	-.782 , (-0.045)	**.029**
Community-level factors			
Stigma (score)	-.025	-.376 , .327	.889
Discrimination			
Have ever experienced discrimination		Ref	
Never experienced discrimination	-.091	-1.365 , 1.184	.888
Environmental safety ("safer to live in Bali")			
Yes, very safe		Ref	
Yes, mostly safe	-.733	-1.805 , .337	.176
No, it is not safe		N/A	
Unsure	-.559	-5.259 , 4.141	.813

1. *adjusted for age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, STI information received, STI experience, psychological distress, level of happiness, HIV infection status, marital status, family disclosure and acceptance about the sexual identity, employment status, number of partners, stigma, discrimination, and environmental safety; adjusted R-squared value = 0.3085.
2. # positive β indicates more positive condom use attitude; negative β indicates less positive condom use attitude

Discussion

Condom use attitudes are complex and cannot be measured adequately with a single, global attitude question. This study employed three of the five dimensions of condom use attitudes used by Helweg-Larsen and Collins (1994), including reliability and effectiveness, embarrassment about purchase, and pleasure. The majority of participants (MSM and waria) disagreed that condoms made them feel uncomfortable; purchasing condoms was embarrassing; it was difficult to get condoms; and the price of condoms was expensive. However, just over half of participants felt that condoms reduced sexual pleasure.

The notion of condoms and reduced sexual pleasure is not new. A US study found condom users and non-users were distinguished by the attitude that condom use would interfere with sexual pleasure (Conley and Collins 2005). Incarcerated MSM and transgender people in Los Angeles viewed condoms as reducing either the pleasure or excitement of sex during receptive anal intercourse (Harawa, Sweat et al. 2010, Pines, Gorbach et al. 2016). Waria partners in Semarang City, Indonesia, reported

condoms reduced sexual pleasure and sensation and this was associated with not using condoms (Azinar and Mahardining 2016). US adolescent gay and bisexual males reported condoms decrease pleasure, were awkward to use and hence reduced the intimacy of sex, and made sex seem like a business exchange (Mustanski, DuBois et al. 2014).

Some socio-ecological factors were found to significantly influence condom use attitudes amongst MSM and waria participants in this study. Individual-level factors influencing condom use attitudes among MSM included religion and condom use/STIs knowledge. In contrast to the findings of other research (Chakrapani, Boyce et al. 2013), this study found participants identifying as Hindu or Muslim to report more positive condom use attitudes than participants following other religions. An Indian study found having a "clean partner" (circumcised) reduced the likelihood of condom use among Muslim MSM ("panthis") (Chakrapani, Boyce et al. 2013). It is thought the removal of penile foreskin keeps the organ clean without any deposits such as smegma, and is therefore less likely to have any STIs and hence participants perceived it was safe to have sex without a condom (Chakrapani, Boyce et al. 2013). Although the findings of this study cannot determine why Hindu or Muslim participants reported more positive attitudes, some insights may be implicated. Hindu or Muslim participants who were born in Bali; or have lived in Bali for long periods of time, may be aware of where to access free condoms (accessible and affordable). Moreover, since they were familiar with the environment, if they need to buy condoms, they might find places to purchase them without embarrassment. However, future research to confirm these insights is needed.

A higher STIs knowledge score was significantly associated with more positive condom use attitude amongst MSM in this study. HIV transmission pathway knowledge significantly increased the likelihood of condom use amongst MSM and waria in Jakarta, Indonesia (Safika, Johnson et al. 2014). However, an Indian study did not find any significant association between STIs knowledge and consistent condom use amongst MSM (Ramanathan, Chakrapani et al. 2013).

Two community-level factors were also found to be significantly related to condom use attitudes scores among MSM in this study. A higher stigma score was associated with less positive condom use attitudes. Stigma-related research has been conducted in many sexual health contexts including around condom use (Septarini, Hendriks et al. 2021). A study amongst Chinese MSM found condom use to be

associated with higher condom social norms and positive attitudes towards safer sex (Hu, Lu et al. 2013). People living with HIV (PLHIV) in South Africa reported more negative condom use attitudes to be a meditator of the relationship between HIV self-stigma and unprotected sex with HIV-positive partners (Earnshaw, Smith et al. 2014). Similarly, MSM in New York, US, who reported high levels of gay-related stigma were more likely to report unprotected sex and negative condom use attitudes (the belief that condoms reduce pleasure) (Starks, Payton et al. 2014). At the community level, environmental safety also significantly influenced condom use attitudes. MSM who felt Bali was a very safe to live as MSM were more likely to have more negative condom use attitudes. The factors influencing this finding are unclear, but the ongoing public campaign around the discrimination and criminalization of sex workers and MSM in Indonesia (Wirawan 2019) may have some impact. However, future research is needed to assess this premise. In contrast, MSM in the Philippines were shamed and interrogated by sellers, which impacted MSM from purchasing condom (one construct of condom use attitudes), highlighting that a non-supportive ("unsafe") environment leads to more negative condom use attitude (Restar, Adia et al. 2020).

Amongst waria participants, no individual or community-level factors were significantly associated with the total condom use attitude score. However, at the interpersonal-level, a higher number of commercial partners was found to be significantly associated with less positive condom use attitudes. A study conducted in Laos among "kathoy" (male to female transgender person) found positive condom use attitudes to be associated with improved condom use behaviour with regular partners (Longfield, Panyanouvong et al. 2011). In contrast, a recent review of 15 studies amongst MSM and transgender women in the Southeast Asia Region found condom use behaviour (which was affected by condom use attitudes) with commercial partners remained higher compared to regular partners (Khumaidi and Sri 2018). This study also was inconsistent with the condom use finding from a study amongst MSM (including waria) in Bali that found consistent condom use was relatively high when participants had a high number of concurrent partners (Karang, Wirawan et al. 2017).

The study has several strengths. These findings contribute to the existing literature on factors associated with condom use attitudes among MSM and waria in a popular tourism setting. Understanding the interrelationships between socio-ecological factors can inform the development of relevant interventions focusing on condom use attitude and behaviours for MSM and waria in Bali. The utilization of

community engaged research has yielded more robust findings regarding predictors of condom use attitudes of MSM and waria.

This study was also successful in reaching a substantial sample despite the coronavirus (COVID-19) pandemic. However, sampling bias may have occurred because of using non-random sampling. Snowball sampling by research partners was employed as MSM and transgender communities in Bali are considered to be "hidden populations." The final sample may not be representative of MSM and waria population that live in Bali beyond those who frequent the specific venue types where the research partners' field work was conducted. Although this study has identified some associations, the directionality of causal effect relationship due to the cross-sectional research design is limited.

Recommendations and future research

Religion, STIs knowledge, stigma, and environmental safety were factors that significantly related to condom use attitudes amongst the MSM community in this study. Improving STIs knowledge by actively promoting STIs prevention and treatment may increase the positive attitudes on condom use. Promotion could occur during pre- and post-HIV/STIs testing and via ongoing networking and outreach by partners and other relevant organizations. Reducing stigma may also improve condom use attitudes amongst MSM. Similar to stigma and discrimination associated with HIV/AIDS, stigma around sexual identities may be reduced through intervention (Grossman and Stangl 2013). Learnings can be gleaned from interventions implemented elsewhere. For example, in Swaziland, government-led interventions focusing on safe access to healthcare settings and disclosure of MSM to healthcare providers reduced stigma and enhanced access by MSM (Risher, Adams et al. 2013). A greater number of commercial partners was associated with less positive condom use attitudes in this study. As in many settings, in Bali STIs/HIV risk reduction has mainly focused on condom use programs; however this has not included "non-condom-based" risk reduction strategies and has not emphasized differences between sexual activity with regular, casual, and/or commercial partners (Bavinton, Mahendra et al. 2021). Risk reduction strategies could be implemented via health promotion programs in clinical settings by health care workers or in the field by outreach workers.

The associations with condom attitudes and religion were different to findings of other studies. It is not clear why religions other than Hindu or Muslim reported lower condom attitude scores. This phenomenon is worthy of further investigation.

Author contributions All authors contributed to the study conception and design. Data collection and analysis were performed by NWS and HJC. The first draft of the manuscript was written by NWS and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript

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Data availability Derived supporting data of this study are available on request from the corresponding author. Access data set requests should be directed to Ni Wayan Septarini, septarini@unud.ac.id.

Code availability Statistical analysis were conducted in *Stata Software,* version 17

Declaration

Disclosure statement The author(s) declared no potential conflict of interests with respect to the research, authorship, publication, relevant financial or non-financial to report of this article.

Ethical approval The research protocol was approved by the Human Ethics Committee, Faculty of Medicine, Udayana University/ Sanglah Hospital, Bali, Indonesia (No: 2521/UN14.2.2.VII.14/LP/2019) and the Curtin University Human Research Ethics Committee, Australia (HRE 2019-0759) (Septarini, Burns et al. 2021).

Consent to participate Not applicable

Consent for publication Not applicable

5.4 Submitted paper: Model conceptualizing condom use behaviours amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia

The following paper was submitted to the *Journal of Sex Research* on September 28, 2022. This paper focuses on part of objective one, *to explore factors that influence sexual health attitudes and behaviour among MSM and waria in Bali* and objective three, *to develop a social model that conceptualises the sexual health attitudes and behaviour among MSM and waria in Bali in detail.*

Model conceptualizing condom use behaviours amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia

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Model conceptualizing condom use behaviours amongst men who have sex with men (MSM) and transgender women (waria) in Bali, Indonesia

Men who have sex with men (MSM) and transgender women (locally known as waria) are at higher risk of sexually transmitted infections (STIs) in Indonesia. Promoting consistent condom use is a strategy widely employed for preventing the spread of STIs. This paper explores condom use behaviours amongst Indonesian MSM and waria who live in Bali, as part of a broader community-engaged mixed-methods study. Data were collected via online surveys (n = 416) and in-depth interviews (n = 10).

Amongst MSM, condom use behaviour scores were associated with: condom use attitudes; previous STIs experience; marital status; employment status; number of regular, casual, and commercial sex partners; and discrimination experiences. Amongst waria, condom use behaviour scores were associated with: HIV (Human Immunodeficiency Virus) status; marital status; and number of regular, casual, and commercial sex partners. Qualitative findings supported the online survey results.

Health promotion and policy interventions, in relation to the variables mentioned above, are needed to reduce high-risk condom use behaviours amongst MSM and waria populations. Such interventions may include online/mobile education campaigns during crisis or pandemic situations, workplace programs to reduce discrimination, and safer sex strategies that account for different sexual contexts (regular, casual or commercial partners).

Keywords: behaviours, condom use, community-engaged research, mixed-methods, model, MSM (Men who have sex with men), transgender women, waria

Introduction

Human immunodeficiency virus (HIV) infections have declined over the past decade in Asia-Pacific countries; however, transmission amongst key populations remain a significant concern. Key populations (e.g., sex workers, gay men and other men who have sex with men [MSM], people who inject drugs [PWID], transgender people [waria], prisoners and their partners) were estimated to contribute to 98% of new HIV infections in this region in 2019 (UNAIDS 2020). Increased numbers of new infections amongst gay men and other MSM accounted for 44% of new infections in Asia and Pacific countries in 2020 (UNAIDS 2020). It is suggested the risk of acquiring HIV worldwide is 25 times higher for gay men and other MSM than heterosexual men, and

34 times higher amongst transgender women than other adults (UNAIDS 2021, UNAIDS 2021).

The 2016 Indonesia Health Profile reported that 26.1% of 41,250 newly infected HIV were MSM (Indonesia Ministry of Health 2017). In 2019, Indonesia reported more than 50,000 new HIV cases, with the national AIDS case rate being 38.93 per 100,000 (Ministry of Health Indonesia 2020). However, within the Bali Province, the AIDS case rate of 177.65 per 100,000 makes it the second highest of the 34 provinces after Papua Province (Ministry of Health Indonesia 2020).

Reducing case rates and new HIV infections requires effective targeted strategies to mitigate social and behavioural risk factors. The AIDS risk reduction model (ARRM) is a three-stage model focusing on social and psychological factors to help understand HIV risk behaviours (Catania, Kegeles et al. 1990). The ARRM can be used to seek and implement strategies to reduce high risk sexual activities and/or maintain low-risk behaviours in relation to HIV transmission (Catania, Kegeles et al. 1990). Application of the model highlights the use of condoms during sexual activity as a key prevention strategy (Catania, Kegeles et al. 1990). The use of condoms as a prevention strategy to reduce transmission of sexually transmitted infections (STIs), including HIV infection, is widely advocated (Harawa, Sweat et al. 2010, Chakrapani, Boyce et al. 2013, Earnshaw, Smith et al. 2014, Khumaidi and Sri 2018).

Studies focusing on condom use practices amongst MSM and waria communities in Indonesia have found condom use to vary from around 35-84%. For example, a study in Java (N=748) found 35.9% of waria reported consistent condom use with clients (Prabawanti, Bollen et al. 2011). A recent study conducted in Bali (N=709) found 35.5% of gay men and other MSM reported any condomless anal intercourse (CLAI) with any type of male or waria partners (Bavinton, Mahendra et al. 2019). In comparison, a study in Jakarta (N=302) reported condom use was high (66%-84%) amongst MSM and waria. For this study, participants were recruited from entertainment and massage venues, or were transgender women who sought sexual partners on streets/parks (Safika, Johnson et al. 2014). Despite some studies exploring condom use, limited research has been conducted to understand factors that influence unsafe sexual practices, such as CLAI among MSM and waria in Indonesia.

Globally, several studies have explored factors associated with condom use amongst similar populations. Qualitative research in India (N=205) identified a mix of individual, interpersonal and structural contexts associated with unprotected sex

(Chakrapani, Boyce et al. 2013). A review of Southeast Asian studies amongst MSM and transgender women reported that individual factors such as condom use attitudes, HIV knowledge, a reduction in sexual sensation, the use of illicit drugs or alcohol, and assuming a receptive role in anal intercourse were each associated with inconsistent condom use (Khumaidi and Sri 2018).

Within Bali specifically, several studies exploring condom use behaviours have been conducted. These include studies focusing on the sexual behaviours and sexual networks of MSM (N=130) (Karang, Wirawan et al. 2017), sero-survey data on HIV infection amongst MSM and transgender women (waria) (Januraga, Wulandari et al. 2013), and the sexual roles and history of STIs amongst MSM (N=258) (Diwyami, Sawitri et al. 2016). Current strategies include generic messages regarding condom use for MSM and waria (Bavinton, Mahendra et al. 2019). Targeted messaging tailored for different types of sexual interactions is not common. This is problematic, as condom use behaviour may vary depending on whether partners are regular, casual or commercial (Rocha, Kerr et al. 2018). A deeper understanding of condom use behaviour amongst these specific, high-risk population groups will inform the development of tailored health promotion programs.

Whilst current literature typically highlights prevalence and determinants of consistent condom use, there is limited data regarding condom use practices amongst MSM and transgender women based on types of partners and number of partners. Furthermore, to the best of authors' knowledge, there is no published research specifically focusing on condom use behaviours among MSM and waria and condom use with regular, casual, and commercial partners in Bali. This paper describes condom use behaviours among MSM and waria in Bali, and further explores the associations between condom use behaviour and type of sexual partner.

Materials and methods

Study design, participants, and procedure

This paper focused on findings related to condom use behaviour. The research is part of a broader mixed methods, community-engaged research project exploring sexual attitudes, behaviours and experiences of MSM and waria in Bali, Indonesia (Septarini, Burns et al. 2021).

Socio-ecological model

A conceptual model, based on The Socio-ecological Model, was used to inform the study. Based on the work of Bronfenbrenner (1979), The Socio-ecological Model helps explain the complex interaction between various individual, interpersonal, community and societal factors (Bronfenbrenner 1979, McLeroy, Bibeau et al. 1988). The socio-ecological factors explored in this study were modified from research focusing on socio-ecological factors that shape gender attitudes (Kågesten, Gibbs et al. (2016). A model conceptualizing condom use behaviours amongst MSM and waria living in Bali, Indonesia, is provided in Figure 5.2.

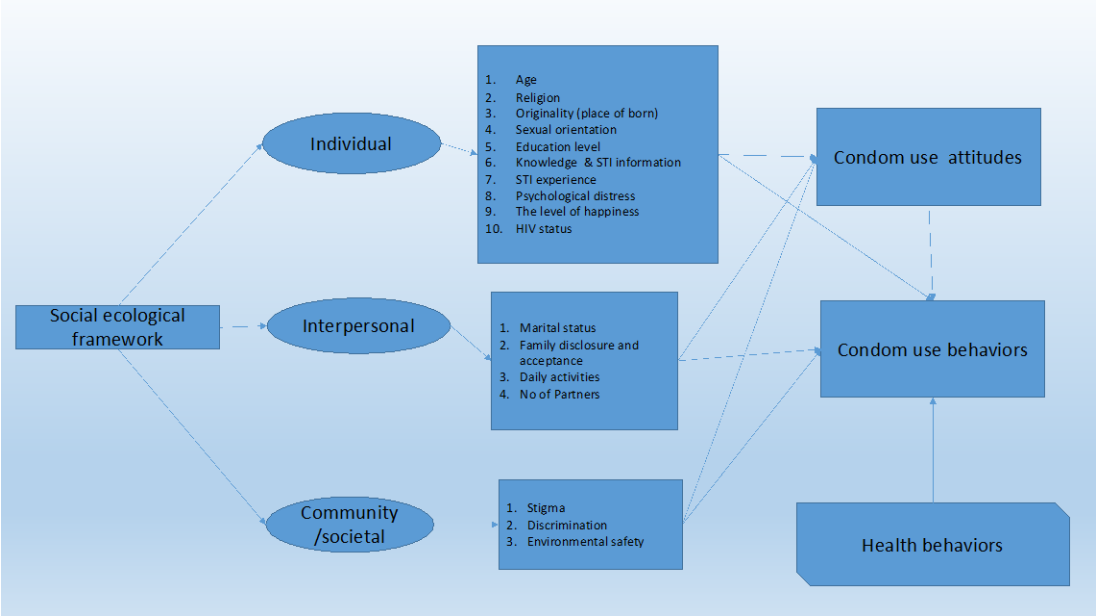

Figure 5.2 Model conceptualizing condom use behaviours amongst MSM and waria living in Bali, Indonesia.

Quantitative data collected via survey

Demographic and social-ecological characteristic measures

Ten Balinese-based research partners recruited survey participants using snowballing and partner-driven sampling. Indonesian MSM and waria who lived in Bali for at least 6 months were eligible to participate. Comprehensive details of the study design and recruitment method can be found elsewhere (Septarini, Burns et al. 2021). Survey questions were based on validated questions and measures from previous relevant studies (Lim, Bazazi et al. 2013, García, Duong et al. 2014, Mun, Chhim et al. 2016, Reinius, Wettergren et al. 2017). Face and content validity were undertaken by four

Indonesian public health experts and ten research partners from Balinese non-government organizations working with the population groups. The survey was self-completed online through Qualtrics (Septarini, Burns et al. 2021).

Social-ecological characteristics comprised individual-level, interpersonal-level, and community/societal-level factors. Individual-level factors included age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, receiving STI information or not, STI experience in the past six months, psychological distress level, happiness level, and HIV infection status. Interpersonal-level factors included marital status, family disclosure and acceptance on sexual identity, daily activities, and number of partners. The community/societal-level factors included stigma (using the 12-item short version of the HIV stigma scale) (Reinius, Wettergren et al. 2017), discrimination (based on previously validated measures) (Mun, Tuot et al. 2016), and environmental safety (Egan, Frye et al. 2011).

Condom use attitude

Condom use attitudes were measured with 5-item scale modified from previous studies conducted in the United States (Cronbach's a=0.75) (Thomas, Lansky et al. 1999, Widman, Golin et al. 2013). This scale included questions about perception of comfort using a condom, if condom use takes the fun out of sex, embarrassment when buying condoms, accessibility, and affordability of condoms. Participants indicated their agreement on a 4-point Likert scale (ranging from 1 to 4 for strongly agree to strongly disagree). Higher scores indicated more positive condom attitudes.

Condom use behaviours

Condom use behaviour questions were based on validated questions from previous research conducted in Brazil (Rocha, Kerr et al. 2018). A composite score comprising several variables was used to define condom use behaviour. This included: (a) the type of sexual relationship, i.e., regular, casual, or commercial; (b) number of male sexual partners for each type of partner in the last 12 months; and (c) condom use during anal intercourse with each type of partner in the past 12 months (Rocha, Kerr et al. 2018). A regular partner was defined as a "boyfriend, wife/husband, someone with whom the individual lived and there was no exchange of money for sex." A casual partner was defined as "someone with whom the individual had sex one or more times without any regularity and there was no exchange of money for sex." A commercial partner was defined as "someone with whom the individual had paid or received money for sex" (Rocha, Kerr et al. 2018). The following formula was employed:

Total condom use behaviour score = (Condom Use score * number of regular partners) + (Condom Use score * number of casual partners) + (Condom Use score * number of commercial partners)

The scores of condom use were based on the use of condoms with each type of partner during anal intercourse for the last 12 months: 0 = did not have anal intercourse, 1 = always used condoms, 2 = used condoms more than half of the time, 3 = used condoms less than half of the time, and 4 = never used condoms during anal intercourse. The number of partners was coded as 0 = none (no partner), 1= one partner, 2 = two to four partners, 3 = five to ten partners, and 4 = and more than ten partners. (Rocha, Kerr et al. 2018). After the total score was calculated, the score was categorized into 3 categories: low-risk (score 0-2), medium-risk (score 3-8), and high-risk (score $\geq$ 9) (Rocha, Kerr et al. 2018).

Health behaviours

Fourteen questions asked about health behaviours during a range of scenarios. These questions were based on the safe sex behaviours questionnaire (SSBQ) which assessed safe sex behaviours in adolescent and young adults (DiIorio, Parsons et al. 1992). The use of alcohol and/or other drugs before or during sexual activity, condom use during sexual activity, and safe sex checked before sexual intercourse were included (score 1-4; response options: always (1), often (2), sometimes (3), and never (4)). Three questions asked about the use of alcohol and other drugs. Four questions related to condom use and seven questions related to safer sex practices.

Quantitative data collected via survey

Qualitative data in relation to condom use behaviours

Semi-structured in-depth interviews were conducted during March 2021 amongst MSM and waria, providing participants the opportunity to provide rich data related to key quantitative findings. Participants were purposively selected by research partners to enable a mix of MSM/waria, employment and marital status. Interviews were conducted online by the lead author via WhatsApp video call as COVID pandemic restriction made in-person interviews impractical. A semi-structured interview schedule was developed based on key findings of the survey.

Data analysis

Quantitative data were analyzed using Stata version 17 and SPSS Statistics V 26. Multiple linear regression models were performed to assess associations between socio-ecological factors and condom use behaviours total score for MSM and transgender participants, separately. Statistical significance was set at $p < 0.05$. Chi-Square test was used to assess the association between three categories of condom use behaviours (low, medium, and high risk) and sexual health activities.

Thematic analysis of in-depth interview transcripts was conducted, with N-Vivo version 12 used to manage and support the data analysis. A deductive coding process was used, Fereday and Muir-Cochrane (2006), guided by key findings from the survey related to condom use behaviours and the socioecological model. Braun and Clarke (2006) guidelines for thematic analysis were employed. The lead researcher

initially familiarized themselves with the dataset. Themes, categories and codes were initially derived. A codebook comprising labels, definitions, and illustrative quotes from the data was developed (Silverman 2000). Themes, codes and categories were confirmed by two researchers to maintain confirmability and enhance dependability. To reduce bias and enhance confirmability, the research team discussed the coding and reached a consensus to refine, define and name the final themes (Bryman 2004) .

Results

Indonesian MSM and waria living in Bali participated in the online survey (n = 416) and interviews (n = 10). For the survey, on average, MSM were aged 32 (±8) years; most had completed senior high school, tertiary education (93%); were single (68%); and were HIV negative (65%). Waria were, on average, aged 35 (±8) years; around half completed junior high school (55%); approximately three quarters were single (76%); and around half were HIV negative (52%). A detailed discussion of the socio-demographic characteristics of survey participants is presented elsewhere (Septarini, Hendriks et al. 2021).

Table 5.11 presents socio-demographic characteristics of the ten in-depth interview participants. Most participants self-identified as homosexual (70%); had graduated from high school (70%); were single (80%); were working (70%); were not born in Bali (60%); and were Islamic (70%).

Table 5.11 Characteristics of the in-depth interview participants (n=10)

Socio-demographic characteristics	
Age (years old), mean ± SD	31.70 ± 8.85
Age (years old), min-max	19-43
Gender, n (%)	
- Male (MSM)	5 (50)
- Waria	5 (50)
Sexual identity, n (%)	
- Bisexual	3 (30)
- Homosexual	7 (70)
Education level, n (%)	
- Elementary school	1 (10)
- High school	7 (70)

- Diploma/University	2 (20)
Marital status, n (%)	
- Single	8 (80)
- Married	2 (20)
Employment status, n (%)	
- Studying	3 (30)
- Working	7 (70)
*Sex workers	4(40)
*Others	3(30)
Place of birth, n (%)	
- Bali	4 (40)
- Outside Bali	6 (60)
Religion, n (%)	
- Christianity	2 (20)
- Hinduism	2 (20)
- Islam	6 (60)

Condom use behaviours amongst MSM and waria in Bali

Less than half of MSM participants did not have any regular (24.2%) or any casual partners (32.5%), and well over half did not have any commercial partners (65.5%). The majority of MSM who reported either regular, casual, or commercial sexual partner(s) *always* used condoms during sexual activity (56.8%, 70.1%, 71.3% respectively). Most MSM (84%) were categorized in the low/medium risk sexual category (Table 5.12).

Some waria participants did not have any regular (32.5%), casual (12.2%), or commercial partners (22.0%). Again, most MSM reporting either regular, casual, or commercial sexual partner(s) *always* used condoms during sexual activity (54.2%, 72.2%, 86.5% respectively). Most waria (91%) were categorized in the medium/high risk sexual behaviour category (Table 5.12).

Interview participants, especially those who had commercial sex partners, suggested they were most likely to use condoms in all sexual encounters to protect their health and prevent the transmission of STIs including HIV. However, one waria participant noted that, whilst they personally recognized the importance of using condoms with their regular partners, not all their friends used condoms. Difficulty obtaining condoms was cited as a reason for non-use.

Oh, if we go for an intercourse, yes, always using condom. With my regular partner also always using condom. I always use protection. But maybe some friends who feel that because of their regular partners so they do not use condom. But maybe some also thinking need to use condom at all time because of knowing the danger of HIV, so need to consider our own health. So, to be safe always use protection, stay safe lah. (Waria, single, non-Bali)

Because we're selling ourselves. Our minds prioritize health the most. Meaning whatever the penis size, whatever handsome the man, if I do not use condoms you, even you pay a lot, I will not want so. Since thought we did not have sex with 1 or 2 people a night though. If we are sick, automatically, we cannot work, cannot think in the future. (Waria, single, non-Bali)

Sometimes, there's no condom anyway … so, just do it. (MSM, single, non-Bali)

Table 5.12 Condom use behaviours with different sex partners amongst MSM and waria

Table 5.12 Condom use behaviours with regular, casual, and commercial sex partner(s) amongst MSM and waria (n = 416)

Condom use behaviours	MSM (n=293)	Waria (n=123)
Regular sex partner(s)		
Do not have any regular partner	71 (24.2)	40 (32.5)
Use of condom	n=222	n=83
- Always	126 (56.8)	45 (54.2)
- Frequently (50% or more of time)	27 (12.2)	13 (15.7)
- Rarely (less than 50% of time)	27 (12.2)	6 (7.2)
- Never	42 (18.9)	19 (22.9)
Casual sex partner(s)		
Do not have any casual partner	89 (30.4)	15 (12.2)
Use of condom	n=204	n=108
- Always	143 (70.1)	78 (72.2)

- Frequently (50% or more of time)	27 (13.2)	20 (18.5)
- Rarely (less than 50% of time)	25 (12.3)	5 (4.6)
- Never	9 (4.4)	5 (4.6)
Commercial sex partner(s)		
Do not have any commercial partner	192 (65.5)	27 (22.0)
Use of condom	n=101	n=96
- Always	72 (71.3)	83 (86.5)
- Frequently (50% or more of time)	11 (10.9)	10 (10.4)
- Rarely (less than 50% of time)	11 (10.9)	3 (3.1)
- Never	7 (6.9)	0 (0.0)
Condom use behaviours (categories)		
- Low risk (0-2 points)	89 (30.4)	11 (8.9)
- Medium risk (3-8 points)	158 (53.9)	61 (49.6)
- High risk (>=9 points)	46 (15.7)	51 (41.5)

Association between socio-ecological factors, condom use attitudes, and condom use behaviours score amongst MSM

Amongst MSM, associations between socio-ecological factors, attitudes to condom use, and condom use behaviours are described in Table 5.13. A *higher* condom use attitude score was associated with a *lower risk* condom use behaviours score (adjusted β: -0.5; 95% CI: -0.7, -0.3). STI experience was the only individual-level factor associated with condom behaviours. Compared to MSM who have ever experienced STIs, those who never experienced STIs had a *lower risk* condom use behaviour score (adjusted β: -1.1; 95% CI: -2.1, -0.2) indicating lower risk of condom use behaviours.

Three interpersonal-level factors were associated with total condom use behaviours score: (i) MSM who were living with a partner were more likely to have

lower risk condom use behaviour scores compared to MSM who were single (adjusted β: -1.5; 95% CI: -2.8, -0.2;); (ii) MSM who stayed at home (no job/no study) were more likely to have *lower risk* scores compared to those who had regular job (adjusted β: -1.2; 95% CI: -2.3, -0.1); and (iii) a greater number of sexual partners (regardless of regular, casual, or commercial sex partners) were all associated with a *higher risk* condom use behaviour score ($p<0.001$).

Discrimination was the only community-level factor found to be associated with condom behaviours score. MSM who had ever experienced discrimination were more likely to report a *higher risk* condom use behaviours score (adjusted β: 1.0; 95% CI: 0.0, 1.9) compared to MSM who had never experienced discrimination.

Table 5.13 Multiple linier regression of condom use behaviours score with condom use attitude and socio-ecological characteristics amongst MSM participants

Table 5.13 Multiple linier regression of condom use behaviours score with condom use attitude and socio-ecological characteristics amongst MSM participants presented with adjusted* coefficient (β) and 95% confidence interval (95% CI) of β

Characteristics	Condom use behaviours score			
	β-Coef.	**95% CI**		**p-value**
Condom use attitudes	-0.499	-0.708	-0.289	**<0.001**
Individual level				
Age	0.022	-0.044	0.087	0.515
Sexual identity				
Heterosexual/tend to be heterosexual	Ref			
Homosexual/tend to be homosexual	-0.122	-1.602	1.358	0.871
Bisexual	0.598	-1.102	2.298	0.489
Place of birth				
Bali	Ref			
Java	-0.762	-2.252	0.728	0.314
Others	-0.278	-1.785	1.229	0.716
Religion				
Hindu	Ref			
Muslim	1.334	-0.243	2.910	0.097
Others	0.349	-1.460	2.157	0.704
Education level				
No or elementary school	Ref			
Junior high school	-1.049	-3.441	1.343	0.388

Senior high school	0.091	-2.030	2.212	0.933
Diploma or higher	0.251	-2.014	2.516	0.827
Condom use knowledge (total score)	-0.434	-0.899	0.032	0.068
Received STI information				
Yes	Ref			
No	-0.444	-3.147	2.260	0.747
STI experience				
Yes	Ref			
No	-1.135	-2.100	-0.169	**0.022**
Do not know	-1.836	-8.971	5.298	0.612
Psychological distress				
Low	Ref			
Moderate to very high	0.698	-0.261	1.658	0.153
Level of happiness				
Less happy than average person	Ref			
Happier than average person	-1.167	-2.528	0.193	0.092
HIV status				
HIV positive	Ref			
HIV negative	-0.755	-1.845	0.335	0.174
Do not know/ have never tested for HIV	-1.146	-3.933	1.642	0.419
Interpersonal level				
Marital status				
Single	Ref			
Married	-0.769	-2.323	0.786	0.331
Widowed/separated	-0.145	-2.677	2.387	0.910
Living with a partner	-1.539	-2.832	-0.246	**0.020**
Family disclosure & acceptance on sexual identity				
All accept	Ref			
Some accept, some reject	0.648	-0.997	2.293	0.438
Family do not know about the sexual identity	0.020	-1.259	1.299	0.975
Daily activities / Employment status				
Regular/full time job	Ref			
School/college	-0.855	-2.234	0.523	0.223
No job/ no school/home duties	-1.235	-2.297	-0.172	**0.023**
Number of Regular partner (s)	2.219	1.574	2.865	**<0.001**
Number of Casual partner (s)	1.744	1.353	2.135	**<0.001**
Number of Commercial partner (s)	1.239	0.795	1.683	**<0.001**

Community/societal level				
Stigma (score)	0.086	-0.222	0.394	0.583
Discrimination				
Never experienced discrimination	Ref			
Have ever experienced discrimination	0.988	0.035	1.941	**0.042**
Environmental safety ("safer to live in Bali")				
Yes, very safe	Ref			
Yes, mostly safe	-0.840	-1.763	0.083	0.074
No, it is not safe	-1.005	-3.831	1.822	0.484
Unsure	-0.147	-3.329	3.036	0.928

*adjusted for condom use attitudes, age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, STI information received, STI experience, psychological distress, level of happiness, HIV infection status, marital status, family disclosure and acceptance about the sexual identity, employment status, number of partners, stigma, discrimination, and environmental safety; adjusted R-squared value = 0.5819.
positive β indicates higher condom use behaviours score (higher risk); negative β indicates lower condom use behaviours score (lower risk).

Association between socio-ecological factors, condom use attitudes, and condom use behaviours score amongst waria

Amongst waria, associations between socio-ecological factors, attitudes to condom use and condom use behaviour scores are described in Table 5.14. HIV status was the only individual-level factor associated with condom use behaviours score. Waria who did not know their HIV status or had never tested for HIV were more likely to have *higher risk* scores of condom use behaviours compared to HIV positive waria participants (adjusted β: 4.2; 95% CI: 0.7, 7.8).

Two interpersonal-level factors, marital status and number of partners were associated with condom use behaviours. Waria who were living with a partner were more likely to have a *lower risk* condom use behaviour score compared to those who were single (adjusted β: -1.6; 95% CI: -2.8, -0.3). A higher number of regular (adjusted β: 1.7; 95% CI: 0.7, 2.7), casual (adjusted β: 1.6; 95% CI: 0.9, 2.3), and commercial sex partners (adjusted β: 1.2; 95% CI: 0.7, 1.8; p<0.001) were associated with *higher risk* condom use behaviours scores. None of the community-level factors were

significantly associated with condom use behaviours.

Table 5.14 Multiple linier regression of condom use behaviours score with condom use attitude and socio-ecological characteristics amongst waria participants

Table 5.14	Multiple linier regression of condom use behaviours score with attitude and socio-ecological characteristics amongst waria participants presented with adjusted* coefficient (β) and 95% confidence interval (95% CI) of β

Characteristics		Condom use behaviours score			
		β-Coef.	**95% CI**		**p-value**
Condom use attitudes		-0.282	-0.650	0.087	0.131
Individual level					
Age		-0.026	-0.125	0.074	0.610
Sexual identity					
	Heterosexual/tend to be heterosexual	Ref			
	Homosexual/tend to be homosexual	1.635	-0.275	3.545	0.092
	Bisexual	-0.865	-8.069	6.338	0.811
Place of birth					
	Bali	Ref			
	Java	0.347	-2.812	3.506	0.827
	Others	1.969	-1.254	5.192	0.227
Religion					
	Hindu	Ref			
	Muslim	-1.002	-4.066	2.062	0.516
	Others	0.201	-4.033	4.435	0.925
Education level					
	No or elementary school	Ref			
	Junior high school	-0.842	-2.752	1.067	0.381
	Senior high school	-0.271	-2.190	1.648	0.778
	Diploma or higher	0.110	-3.103	3.324	0.945
Condom use knowledge (total score)		0.043	-0.730	0.816	0.912
Received STI information					
	Yes	Ref			
	No	-1.784	-5.115	1.546	0.288
STI experience					
	Yes	Ref			
	No	0.261	-1.637	2.159	0.784
	Do not know	-0.554	-3.376	2.267	0.696
Psychological distress					

	Low	Ref			
	Moderate to very high	0.420	-1.629	2.469	0.683
Level of happiness					
	Less happy than average person	Ref			
	Happier than average person	-1.204	-2.569	0.162	0.084
HIV status					
	HIV positive	Ref			
	HIV negative	0.680	-1.040	2.400	0.432
	Do not know/ have never tested for HIV	4.222	0.686	7.757	**0.020**
Interpersonal level					
Marital status					
	Single	Ref			
	Married	5.225	-3.582	14.032	0.240
	Widowed/separated	-0.028	-1.746	1.690	0.974
	Living with a partner	-1.552	-2.847	-0.258	**0.019**
Family disclosure & acceptance on sexual identity					
	All accept	Ref			
	Some accept, some reject	1.535	-0.207	3.277	0.083
	Family do not know about the sexual identity	0.667	-1.663	2.998	0.569
Daily activities / Employment status					
	Regular/full time job	Ref			
	School/college	-0.591	-4.254	3.073	0.748
	No job/ no school/home duties	-1.416	-3.088	0.255	0.095
Number of Regular partner (s)		1.692	0.678	2.706	**0.001**
Number of Casual partner (s)		1.617	0.893	2.341	**<0.001**
Number of Commercial partner (s)		1.226	0.663	1.789	**<0.001**
Community/societal level					
Stigma (score)		0.270	-0.250	0.790	0.303
Discrimination					
	Have ever experienced discrimination	Ref			
	Never experienced discrimination	-0.631	-2.513	1.251	0.505
Environmental safety ("safer to live in Bali")					
	Yes, very safe	Ref			
	Yes, mostly safe	-0.400	-1.980	1.180	0.615
	No, it is not safe				
	Unsure	2.320	-4.631	9.271	0.507

*adjusted for condom use attitudes, age, sexual identity, place of birth, religion, education level, condom use/STIs knowledge, STI information received, STI experience, psychological distress, level of happiness, HIV infection status, marital status, family disclosure and acceptance about the sexual identity, employment status, number of partners, stigma, discrimination, and environmental safety; adjusted R-squared value = 0.5980

[#]positive β indicates higher condom use behaviours score (higher risk); negative β indicates lower condom use behaviours score (lower risk).

Association between health behaviours and condom use behaviour categories amongst MSM and waria

Table 5.15 presents the association between condom use behaviour categories (low, medium and high risks) and various health behaviours. Amongst MSM participants, drug use was associated with risky condom use behaviours. For MSM who were in a high-risk category, almost 61% (n=28) had *ever* drank alcohol before/during sex intercourse. In contrast, amongst those who were in a low-risk category, 73% (n= 65) had *never* drunk alcohol before/during sex intercourse (p=0.001). Amongst participants in the low-risk group, 11% (n= 10) reported to have *ever* used narcotics or any illicit drugs before having sex compared to 26% (n = 12) high risk group (p=0.039). Of MSM reporting low-risk condom use behaviours, 75% (n= 67) had *ever* asked their prospective sexual partners about their use of injecting narcotics drugs, compared to 46% (n= 21) of participants from the high-risk group (p=0.002). One interview participant reinforced the finding that condoms were less likely to be used when intoxicated:

> *Ee, yes, sometimes I got drunk with friends, 2-4 friends around twice a months. But if I was not aware so did not use any (condom), hehe. If in a state of drunk, we did not used any.* (MSM, married, non-Bali)

Unprotected sex was also associated with high-risk condom use behaviours. Of MSM reporting high-risk condom use behaviours, 82% (n = 37) reported condomless sex when "lost in passion," compared to 54% (n= 84) and 31% (n= 27) of the medium and low-risk groups, respectively (p<0.001). Fourteen percent of MSM (n= 12) from the low-risk category had *never* refused to have sex with a sexual partner if the partner insisted on having unprotected sex; this was almost double (27%) among MSM from

the high-risk group (p=0.019). Interview participants provided a range of perspectives with partners who were concerned about their health being likely to request condom use.

> *There are many who refuse but we have forced them, and they want (to use it) now, hehe. These days customers more cares about his health, usually they asked to use condoms.* (Waria, single, Bali) (had commercial partners)

> *For me, I do not differentiate between my commercial and regular partners. I always use protection. But maybe some friends who feel that because of their regular partners so they do not use condom. But maybe some also thinking need to always use condom because of knowing the danger of HIV, so need to consider our own health. So, to be safe, always use protection, stay safe right?* (Waria, single, Non-Bali) (had regular and commercial partners)

> *Yes, I always reject if the guy do not want to use condoms No need to use condoms, eh because both equally healthy right. It's not that good. I said, how do you know that I am healthy, try to stigmatise myself. If in case I'm not healthy later I can transmit the disease to you, oh yes then usually he want to use condom after I told him that.* (Waria, single, Non-Bali) (had commercial partners)

> *But it depends, because some people do not want to use condoms. Because it's different if you're using it or not. They say it feels better if not use condom.* (MSM, single, non-Bali) (had casual partners)

> *Just wanted to remain safe (use condom) is also because now also already know like I've HIV also, so not willing to spread the virus to others too, spread what I had experienced to others.* (MSM, single, Non-Bali) (had regular and casual partners)

Nearly all MSM in the high-risk category (96%; n= 43) have *ever* had sexual intercourse during their first meeting with a new person compared to 55% and 65% from the low and medium-risk groups, respectively (p<0.001). Two-thirds (75%) of low-risk participants had *ever* asked prospective sex partners about the STI/HIV status of their partner, whilst 54% of those from the high-risk group had never done so (p=0.002).

Access to condoms was identified as an enabling factor or a barrier to use. For example:

> Yes *sometimes, yes sometimes not How ya, sometimes we do not bring it suddenly meet people and he asked so right, no condom. I have an app*

like that to meet guys. In Java, we need to go to a mini market to get a condom. No traditional market sell it. So, if it is far, then not using any condom. (MSM, single, non-Bali)

Sometimes there's no condom anyway… Just do it. (MSM, single, Non-Bali)

(Condoms) are quite expensive, hehe, because our income is reduced [during Covid]. (MSM, married, Non-Bali)

Table 5.15 Health behaviours and condom use behaviours and amongst MSM participants

Table 5.15 Health behaviours and condom use behaviours and amongst MSM participants

Health behaviours	**Condom use behaviours**			**p-value**
	low risk	**medium risk**	**high risk**	
Alcohol/narcotics/illicit drugs				
I drink alcoholic drinks before or during intercourse				
Ever	24 (27.0)	69 (43.7)	28 (60.9)	**0.001**
Never	65 (73.0)	89 (51.7)	18 (39.1)	
I use narcotics or ellicit drugs (such as ecstasy, ice, poppers, etc.) before having sex,				
Ever	10 (11.4)	29 (18.6)	12 (26.1)	**0.039**
Never	78 (88.6)	127 (81.4)	34 (73.9)	
I asked my prospective sexual partner about his experience using injecting narcotics drugs				
Ever	67 (75.3)	106 (67.1)	21 (45.7)	**0.002**
Never	22 (24.7)	52 (32.9)	25 (54.3)	
Condom use				
If I think I will have sex with someone, I will bring a condom				
Ever	78 (88.6)	131 (82.9)	35 (77.8)	0.245
Never	10 (11.4)	27 (17.1)	10 (22.2)	
I have oral sex using a condom				
Ever	35 (39.8)	68 (43.6)	17 (37.8)	0.724
Never	53 (60.2)	88 (56.4)	28 (62.2)	

If I am lost in passion, I have sex without using a condom				
Ever	27 (30.7)	84 (54.2)	37 (82.2)	**<0.001**
Never	61 (69.3)	71 (45.8)	8 (17.8)	
If a sexual partner insists on having unprotected sex, I refuse to have sex with them.				
Ever	76 (86.4)	110 (70.5)	33 (73.3)	**0.019**
Never	12 (13.6)	46 (29.5)	12 (26.7)	
Self-safety sex checked				
I avoid direct contact with sperm / vaginal fluid from my partner				
Ever	73 (83.0)	114 (74.0)	33 (73.3)	0.244
Never	15 (17.0)	40 (26.0)	12 (26.7)	
I immediately had sexual intercourse during the first meeting with a new person				
Ever	48 (54.5)	101 (64.7)	43 (95.6)	**<0.001**
Never	40 (45.5)	55 (35.3)	2 (4.4)	
I do not have sexual relations if I feel pain in my genitals				
Ever	47 (53.4)	100 (64.5)	31 (68.9)	0.131
Never	41 (37.3)	55 (35.5)	14 (31.1)	
I insist on checking my sexual partner to see if my partner has genital sores / infection				
Ever	72 (82.8)	111 (70.7)	31 (68.9)	0.083
Never	15 (17.2)	46 (29.3)	14 (31.1)	
I avoid direct contact with my sexual partner in the event of injury (presence of blood)				
Ever	73 (83.0)	114 (74.0)	33 (73.3)	0.244
Never	15 (17.0)	40 (26.0)	12 (26.7)	
I asked prospective sexual partners about the experience of taking an STI or HIV test				
Ever	67 (75.3)	106 (67.1)	21 (45.7)	**0.002**
Never	22 (24.7)	52 (32.9)	25 (54.3)	

I have sexual relations with someone who I know is bisexual or homosexual / gay				
Ever	76 (88.4)	143 (92.3)	44 (100)	0.063
Never	10 (11.6)	12 (7.7)	0 (0.0)	

Table 5.16 presents the association between condom use behaviour categories (low, medium and high risks) and various health behaviours amongst waria. No waria from the low-risk category reported the use of narcotics or illicit drugs before sex; while 66% (n= 40) and 53% (n=23) of those from the medium and high-risk groups had *never* used these drugs before sex, respectively (p=0.012). The majority of waria in the low-risk category (91%; n = 10) reported to have *never* had sex without a condom if lost in passion, compared to 73% (n= 37) from the high-risk group (p=<0.001). Most waria in the high-risk group (94%; n= 47) *ever* had sexual intercourse immediately during the first meeting with a new person compared to 70% (n= 7) and 78% (n= 47) of those in the low and medium-risk groups, respectively (p=0.036).

Waria sex workers tended to ask their clients to use condoms and chose to cancel the transaction when clients refused to use condoms. Although many refused to use condoms, awareness of the importance of condoms to protect their health is increasing among clients, as described by a Bali-born waria below.

> *I was working on the street to get clients non-stop every night. I was very busy before COVID; sometimes a night can be 15 clients, but back again to the line of fortune each person. Sometimes 1 customer use 2 condoms, but sometimes no clients as well.* (Waria, single, non-Bali)

> *Yes, for example if there are guests who do not want to use condoms, I directly refuse to have sex.* (Waria, single, non-Bali)

> *Ee, if they refuse to use condom, I do not want to have sex.*(Waria, single, Bali)

> *There were many who refuse, but we had forced them to use it. Most of these days the customer cares with their health, precisely they asked to use condoms.* (Waria, single, Bali)

Table 5.16 Health behaviours and condom use behaviours and amongst waria participants

Table 5.16	Health behaviours and condom use behaviours amongst Waria participants			
Health behaviours	**Condom use behaviours**			**p-value**
	low risk	**medium risk**	**high risk**	
Alcohol/narcotics/illicit drugs				
I drink alcoholic drinks before or during intercourse				
Ever	5 (45.5)	33 (55.0)	32 (62.7)	0.502
Never	6 (54.5)	27 (45.0)	19 (37.3)	
I use narcotics or illicit drugs (such as ecstasy, ice, poppers, etc.) before having sex,				
Ever	0 (0.0)	21 (34.4)	24 (47.1)	**0.012**
Never	11 (100.0)	40 (65.6)	27 (52.9)	
I asked my prospective sexual partner about his experience using injecting narcotics drugs				
Ever	7 (70.0)	42 (71.2)	28 (54.9)	0.190
Never	3 (30.0)	17 (28.8)	23 (45.1)	
Condom use				
If I think I will have sex with someone, I will bring a condom				
Ever	11 (100.0)	49 (84.5)	48 (94.1)	0.126
Never	0 (0.0)	9 (15.5)	3 (5.9)	
I have oral sex using a condom				
Ever	9 (81.8)	49 (83.1)	49 (96.1)	0.080
Never	2 (18.2)	10 (16.9)	2 (3.9)	
If I am lost in passion, I have sex without using a condom				
Ever	1 (9.1)	34 (57.6)	37 (72.5)	**<0.001**
Never	10 (90.9)	25 (42.4)	14 (27.5)	
If a sexual partner insists on having unprotected sex, I refuse to have sex with them.				
Ever	10 (90.9)	52 (88.1)	48 (94.1)	0.553

Never	1 (9.1)	7 (11.9)	3 (5.9)	
Self-safety sex checked				
I avoid direct contact with sperm / vaginal fluid from my partner				
Ever	7 (70.0)	40 (67.8)	34 (68.0)	0.990
Never	3 (30.0)	19 (32.2)	16 (32.0)	
I immediately had sexual intercourse during the first meeting with a new person				
Ever	7 (70.0)	47 (78.3)	47 (94.0)	**0.036**
Never	3 (30.0)	13 (21.7)	3 (6.0)	
I do not have sexual relations if I feel pain in my genitals				
Ever	5 (50.0)	39 (66.1)	35 (70.0)	0.473
Never	5 (50.0)	20 (33.9)	15 (30.0)	
I insist on checking my sexual partner to see if my partner has genital sores / infection				
Ever	9 (100.0)	49 (83.1)	43 (84.3)	0.413
Never	0 (0.0)	10 (16.9)	8 (15.7)	
I avoid direct contact with my sexual partner in the event of injury (presence of blood)				
Ever	8 (80.0)	48 (81.4)	37 (72.5)	0.534
Never	2 (20.0)	11 (18.6)	14 (27.5)	
I asked prospective sexual partners about the experience of taking an STI or HIV test				
Ever	8 (80.0)	54 (90.0)	37 (72.5)	0.059
Never	2 (20.0)	6 (10.0)	14 (27.5)	
I have sexual relations with someone who I know is bisexual or homosexual / gay				
Ever	10 (100.0)	49 (92.5)	43 (86.0)	0.301
Never	0 (0.0)	4 (7.5)	7 (14.0)	

Discussion

The majority of MSM and waria reported consistent use of condoms regardless of the type of sexual encounter (regular, casual, and commercial). This result was similar to a study conducted in Jakarta, Indonesia, which reported consistent condom use amongst MSM and transgender women (Safika, Johnson et al. 2014). Whilst reporting use of condoms may be associated with social desirability bias (Grimm 2010), the use of an online survey was implemented to mitigate this. The study in Jakarta found MSM commonly used condoms when engaging with casual partners and commercial sex partners, but not when they engaged with their regular partner (Safika, Johnson et al. 2014).

This study found a negative relationship between condom use attitudes and condom use behaviours scores. Positive condom use attitudes related to *lower risk* condom use behaviour score. The Theory of Planned Behaviours postulates that intention to perform a behaviour can be predicted from attitudes toward the behaviours, subjective norms and perceived behavioural control with high accuracy (Ajzen 1991). Similarly, a review conducted by Andrew, Mullan et al. (2016), found Theory of Planned Behaviours to be useful to explain condom use among MSM, especially around attitude, their subjective norms (perceived support from others), and perceived behaviour control (ease of performing the behaviour). A study of young MSM in the US exploring the impact of attitudes found negative attitudes towards condoms can dismiss the intimacy of sex and make it seem like a business exchange, resulting in young MSM being more likely to have condomless anal intercourse (Mustanski, DuBois et al. 2014). The current study also found *higher risk* condom use behaviours scores were significantly related to a history of STIs. This aligns with many other studies that found condomless sexual intercourse increases the risk of contracted STIs including HIV amongst MSM (Baral, Kizub et al. 2010, Holt, Bernard et al. 2010, Mayer, Gangakhedkar et al. 2015, MacCarthy, Poteat et al. 2017, Indrawati, Demartoto et al. 2018, Saw, Yasuoko et al. 2018).

Living with a partner was significantly associated with *lower risk* condom use behaviour score in this study. This may be because cohabitation with a partner reduces the likelihood of casual and/or commercial partners. Living together may represent an important symbol of serious commitment and permanence in a relationship (Haas and Whitton 2015). It is also proposed that living together may enhance emotional support

and allows for increased intimacy. Cohabitation may also indicate that one aims to be in the relationship for the long-term, particularly for MSM who live in a place where same-sex marriage is not available and not an option (Haas and Whitton 2015). Findings from this study also suggest MSM participants mostly "always" used condoms, even with their regular sex partner, which therefore lower the risk of STIs/HIV.

This study found MSM who stayed at home had *lower risk* condom use behaviour score compared to those who had a fulltime job. It is unclear why this relationship exists, and it warrants further research. Other studies have reported contrasting results. One study conducted in India found no significant difference between condom use with regular, casual, and paid male sex partners, and participant occupation (Ramanathan, Chakrapani et al. 2013). Another study in Myanmar found MSM with a regular job were less likely to have concurrent sex partners (Saw, Yasuoko et al. 2018), and a study conducted in China found unemployed participants were more likely to engage in unprotected anal intercourse with male casual sex partners (Xu, Zheng et al. 2016).

Waria participants who had never had a HIV test or did not know their HIV status were more likely to report *higher risk* condoms use behaviour scores compared to those who knew their status. Waria who never test for HIV might never visit STIs clinics and may not receive benefits from clinical care, including information around condom use and STIs. However, this statement warrants further exploration as this study did not capture participants who had ever/never visited STIs clinics.

MSM and waria who were living with a partner were more likely to have a *lower risk* condom use behaviour score compared to those who were single. This may be because living with a partner allows for increased intimacy reducing the desire for more sexual partners (casual or commercial) (Haas and Whitton 2015).

Risk behaviours often correlated with other sexual related health related activities. This study found use of alcohol (MSM) and other drugs (MSM and waria) was associated with *higher risk* sex behaviours. Furthermore, knowledge of a partners' history of injecting drug use was related to lower risk sex behaviours. Many studies have found similar patterns (Lim, Guadamuz et al. 2012, Tang, Huan et al. 2013, Nguyen, Khuu et al. 2016, Young, Nianogo et al. 2016, Chakrapani, Lakshmi et al. 2019) . Amongst Peruvian MSM, consuming more than five alcoholic drinks in the past three months increased the odds of having unprotected sex (Young, Nianogo et

al. 2016). For Chinese MSM, consumption of alcohol before sex was positively associated with unprotected anal intercourse (Tang, Huan et al. 2013), and in a study with Indian MSM and transgender women, alcohol use substantially increased HIV transmission risk behaviour (Chakrapani, Lakshmi et al. 2019). Lim, Guadamuz et al. (2012) found unprotected anal sexual intercourse was significantly related to recreational drug use before sex amongst MSM in Asia countries. With regards to asking prospective partners about injecting drug use histories, this has been shown to reduce the likelihood of Hepatitis C and HIV infection risks (Nguyen, Khuu et al. 2016).

Around three-quarters of MSM and waria in this study reported that they have ever had sex without condom when they were "lost in passion." This finding was similar to a study in Vietnam, which mentioned MSM seeking higher sexual sensation were more likely to report condomless anal intercourse than lower sexual sensation seeking MSM (Berg 2008, Vu, Thu et al. 2017). This study also found MSM who have ever refused condomless sex intercourse were significantly more likely to fall into the *low-risk* sex behaviour category. Refusing sex without a condom is a common risk reduction strategy to prevent STI/HIV infection (Kalichman, Kalichman et al. 2016, Braham, Skakoon-Sparling et al. 2019, Shrader, Peters Jefferson et al. 2021).

Having sex immediately with a new person was also common for MSM and waria categorized in the *high-risk* behaviour category. Similar to this finding, early initiation of anal intercourse amongst MSM in Switzerland was associated with risk taking sexual behaviour that may facilitate HIV transmission (Balthasar, Jeannin et al. 2009). However, asking a prospective sex partner about their STI/HIV testing history was prominent amongst MSM in the low-risk category of this study. Asking a potential partner about their testing history is also an important STI/HIV risk reduction strategy (Kalichman, Kalichman et al. 2016, Braham, Skakoon-Sparling et al. 2019, Shrader, Peters Jefferson et al. 2021).

Recommendations

Understanding determinants of condom use behaviours amongst MSM and waria communities informs individual, interpersonal, and community factors, which are critical for designing tailored interventions to create enabling environments for specific target populations. Some examples are presented below.

Individual-level-factors

Tailored health promotion that highlights safer sexual practices for different sexual contexts (regular, casual, commercial partners) may influence positive condom use attitudes of MSM and waria (Wang, Tucker et al. 2018). Enhancing existing strategies, including supporting condoms in safe spaces, ensuring access to better condoms and condom-compatible lubricants, and teaching condom negotiation skills, may support increased consistent condom use amongst MSM and waria (Olawore, Crowell et al. 2021).

Increased condom use may decrease the prevalence of STIs (Ramanathan, Deshpande et al. 2014). Education and counselling around the importance of condom use for MSM and waria who visit STI clinics, during pre and post HIV test counselling, and peer-led outreach work may encourage condom use (Bentley, Spratt et al. 1998, Meursing and Sibindi 2000, Rosenberg, Pettifor et al. 2013, Ramanathan, Deshpande et al. 2014). Peer-led outreach and STI/HIV clinics can educate people around risks associated with multiple sexual partners (Ramanathan, Deshpande et al. 2014). One study in Bali found a lack of awareness of pre-exposure prophylaxis (PreP) among MSM and waria (Cempaka, Wardhani et al. 2020). However, although PreP has been found to have positive results in relation to reducing HIV transmission, increased reliance on PreP in has been found to be associated with an increase in STIs, likely to be due to complacency (Traeger, Guy et al. 2022). Therefore, positive attitudes toward condom use and STIs screening need to be ensured and maintained when the PreP program is widely available to use in Bali or Indonesia.

Similar to many other countries, currently in Bali, STI/HIV risk reduction strategies continue to focus on improving rates of condom use. A recent study focusing on potential HIV transmission risk amongst MSM and transgender in Bali found that, besides condom use, some participants also used some risk reductions strategies that also minimized the transmission of STIs/HIV, such as strategic positioning, serosorting, or withdrawal before ejaculation (Parsons, Schrimshaw et al. 2005,

Bavinton, Mahendra et al. 2021). However, they failed to consider other "non-condom-based" risk reduction strategies, such as education about different safer sex practices for different sexual contexts (e.g. regular, casual, and commercial partners) (Bavinton, Mahendra et al. 2021) and enhancing awareness about all STIs (not merely HIV).

Interpersonal-level factors

The number of regular, casual and commercial sex partners was significantly associated with high-risk condom behaviours amongst both MSM and waria. During the COVID-19 pandemic, the internet has become the most common way to meet and communicate with new partners (via online dating applications) (Eleuteri and Terzitta 2021); therefore, STIs prevention strategies through social media, mobile telephone application, and hookup sites may be options to effectively engage MSM and waria (Center for Disease Control and Prevention 2021).

Community-level factors

Online and mobile modalities, can support health promotion strategies to enhance safe sexual practices in addition to providing health advice, referral, and increase the availability of STIs testing sites (Giano, Kavanaugh et al. 2020). Use of online modalities may also reduce stigma and barriers that some clients experience when interacting face-to-face (Center for Disease Control and Prevention 2021). Condom distribution programs are another strategy that have been found to increase condom use, prevent STIs/HIV, and save money. These programs increase availability, accessibility, and acceptability of condom use (Centers for Disease Control and Prevention 2019).

Discrimination significantly influenced condom use behaviour scores in this study. Reducing discrimination requires sustained and multifaceted approaches. Workplaces and schools can implement relevant policy; however, this should also be supported by sustained education with opportunity for values clarification (Kumashiro 2003, Bauermeister, Meanley et al. 2013). Similarly, families and the broader community are also likely to benefit from tailored education and larger scale awareness programs (Khumaidi and Sri 2018).

Study strengths, limitations, and future research opportunities

The survey findings were exposed to several types of bias, including recall and social desirability. In order to minimize recall bias, time-frame questions were time-anchored to the previous 6 months. All interviewers were highly trained research partners who fostered a non-judgmental environment, so social desirability bias was a minor concern.

Due to the COVID-19 pandemic restriction, the survey was delivered online and mostly self-administered by participants. This required them to have access to the internet and to be reached by the research partners. Those without internet access and who could not be reached by research partners (i.e., rural areas) were unable to take part, potentially limiting the representativeness of the MSM and waria in Bali, Indonesia.

The qualitative findings were intended to support the survey results. Although only ten participants were involved, the in-depth interviews involved a diverse range of MSM and waria participants, and this phase helped to elaborate on some of the key survey findings.

Future research may need to explore the reason why MSM who stayed at home had a lower risk condom use behaviours score compared to those who had fulltime job, and why waria who never had a HIV test, or did not know their HIV status, had a higher risk condom use behaviour score. Moreover, findings from this study provide essential information to inform future policy tailored intervention and evaluations, as well as an opportunity to conduct research to assess and evaluate effectiveness of tailored intervention(s) chosen.

Conclusion

Existing strategies should ensure they increase positive condom use attitudes to further promote consistent condom use amongst MSM and waria. Expanding the face-to-face education campaigns to online and mobile modalities may enhance condom use knowledge, especially for harder to reach individuals and groups. As discrimination has been associated with higher risk sexual behaviours for MSM or waria, key stakeholders and government agencies should seek to promote equality within a range of settings.

Safer sex strategies that account for different sexual contexts (regular, casual or commercial partners) are also necessary. Other harm/risk reductions strategies, such as PreP, serosorting, strategic positioning, or withdrawal before ejaculation, can be introduced for those who choose not to use condoms. Applying lessons learned from other countries in relation to PreP implementation programs needs to consider an increased awareness about other STIs, and the availability of appropriate STIs screening/testing.

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Declaration of interest statement

The author(s) declared no potential conflict of interests with respect to the research, authorship, publication, relevant financial or non-financial to report of this article.

5.5 Published paper: Psychological distress and happiness of men who have sex with men (MSM) and transgender people during the Coronavirus Disease-19 (COVID-19) pandemic

The following publication was published in *Frontiers in Public Health* on September 14, 2021.

Septarini, N. W., Hendriks, J., Maycock, B., & Burns, S. (2021). Psychological Distress and Happiness of Men Who Have Sex with Men and Transgender People During the Coronavirus Disease-19 Pandemic: Is There a Need for Public Health Policy Intervention? Frontiers in Public Health, 1350

This paper addresses a component of objective four to explore experiences of MSM and waria in Bali including social-cultural aspects, stigma, discrimination, and mental health (psychological distress and happiness). At the time of data collection, the global COVID-19 pandemic was impacting individuals, groups and populations globally. (Ali, Baloch et al. 2020). The analysis of mental health (psychological distress and happiness) of the participants during this time helped better understand the issues faced by MSM and waria during and prior to the pandemic.

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ORIGINAL RESEARCH
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Psychological Distress and Happiness of Men Who Have Sex With Men and Transgender People During the Coronavirus Disease-19 Pandemic: Is There a Need for Public Health Policy Intervention?

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Since the global onset of COVID-19 in early 2020, the disease has significantly impacted mental health. This impact is likely to be further exacerbated for groups who were already marginalized. This paper shares results from a broader study of men who have sex with men (MSM) and transgender people in Bali, Indonesia and includes a focus on psychological distress and happiness during the COVID-19 pandemic; applying sociodemographic and epidemiological characteristics as potential mediators. Psychological distress and the level of happiness were measured by The Kessler Psychological Distress (K10) and the Subjective Happiness Scale (SHS). A cross-sectional survey was conducted from July to September 2020. Of the 416 participants, complete data were available for 363 participants. The majority of participants were aged 26–40 years, currently single, were born outside Bali, were currently living in an urban area, and over one-third were living with HIV. While all were MSM, the majority identified as homosexual/tend to be homosexual (71.3%), however 54 (14.9%) identified themselves as heterosexual. The majority (251, 69.1%) reported moderate to very high psychological distress during the COVID-19 pandemic. The binary logistic regression analysis identified five factors to be significantly associated with higher psychological distress: being a student, reporting higher levels of stigma, had ever experienced discrimination, felt better prior to the COVID-19 pandemic, and less happy than the average person. When homosexual were compared with heterosexual participants, those who identified themselves as being homosexual reported significantly lower psychological distress compared to those identified themselves as heterosexual, which may be associated with these participants not disclosing their status as MSM and the stigma around MSM. Those who considered themselves to be less happy than the average person

(316, 87.1%) were more likely to live with a partner and to report moderate to very high psychological distress. Based on the findings, interventions should focus on strategies to reduce stigma, provide non-discriminatory services, and improve access to essential health services.

Keywords: mental health, happiness, COVID-19, MSM, transgender, intervention, psychological distress

INTRODUCTION

The first COVID-19 case in Bali was identified amongst an international tourist in February 2020, with community transmission increasing from June 2020 onwards (1). In December 2020, the cumulative cases were at 16,947 with a case fatality rate of 2.95% (around 500 deaths) (2). As per 15th of August 2021, the cumulative cases were 96,027 of which 85.28% (81,892) are recovered and 2,709 (2.82%) deaths (3). Throughout this pandemic, the government; related stakeholders, individuals organizations, and businesses throughout Indonesia have implemented control measures to reduce transmission of COVID-19. The control measures include stay-at-home orders, physical distancing, wearing face masks, and regular hand washing (4). In July 2020, the Bali Government announced a plan to resume all activities in the island *via* a "New Era of Life Order Protocol" that involved a strategy of reopening across three stages (1). However, due to the increase number of COVID-19 cases since July 2021, the Government of Indonesia has introduced level 4 of COVID-19 restriction known as emergency PPKM (Pemberlakuan Pembatasan Kegiatan Masyarakat) in order to restrict public activities and to reduce the COVID-19 transmission (5). The COVID-19 pandemic has affected mental well-being worldwide, even though individual mechanisms for coping may differ. Researchers have investigated transmission pathways for COVID-19, treatment options, impacts upon physical, and mental health amongst the general population, patient groups, and health providers (6). Evidence regarding the effects of the pandemic on mental health of marginalized groups remains limited, especially for MSM and transgender, who exist as hidden communities in many societies. In Indonesia, MSM and transgender women (known in Bali as "waria") report difficulties associated with social stigma, violence, persecution, and other legal challenges which restrict the development of inclusive public policy (7) that leads them to become 'hidden populations' who are difficult to reach (8). Although MSM and waria are "accepted" in some parts of Indonesia, they continue to experience rejection due to family, cultural, and religious reasons in many regions of the country.

Several studies have been conducted to explore the well- being of MSM and transgender people globally during the COVID-19 pandemic. A study conducted in Brazil in 2020 found that 7.9% of MSM and transgender participants to report low psychological well-being (9), whereas research conducted in Mexico suggested high levels of depression among MSM and transgender women during the COVID-19 pandemic when compared to before the pandemic (10). A systematic review from available evidence revealed that overall MSM and transgender individuals suffered from disproportionate negative influence of stressors linked to the pandemic due to pre- existing vulnerabilities (11). The findings also suggested MSM and transgender peoples vulnerability were increased by mental health, economic deficit, and physical vulnerability during the pandemic (11). To the best of our knowledge, there was no literature available specifically focusing on happiness amongst MSM and transgender people during the COVID-19 pandemic. To date there have been a few published studies exploring the effect of COVID-19 on mental health in Indonesia, however these focus on the general population. A study of Indonesian adults (n = 8,000+) found levels of anxiety were highest among younger people and females. A study of healthcare workers (n = 227) found more than one third of respondents reported high levels of anxiety which was attributed to lower resilience. During non-pandemic times, MSM and transgender individuals in Indonesia have been found to be more likely to experience mental health issues compared to the general population (12). For example, a study in Bali in 2015 reported a high level of social anxiety and depression amongst MSM (13). To the best of our knowledge there have been no published studies focusing on psychological distress and happiness conducted among these communities in Bali during the current pandemic.

This paper examines the psychological distress and happiness of MSM and transgender people in Bali during the COVID-19 pandemic. Factors related to psychological distress and happiness amongst MSM and transgender people in Bali during the COVID-19 pandemic were measured, and comparisons made to participants' self-perception of these measures prior to the pandemic.

METHODOLOGY

Study Design, Participants, and Procedure

Data presented in this paper is part of a broader community-engaged research study exploring attitudes, behaviors and experiences of the MSM and transgender communities in Bali, Indonesia (14). In the third phase of this study, a cross-sectional survey was hosted on the Qualtrics platform from 6th of July to 28th of September 2020. Most participants completed the online survey independently; however research partners read the survey aloud for those with low literacy levels. Given the estimation of the MSM population in Bali, of around 14,000 adults, to obtain 95% confidence level and 5% precision (margin of error), the required sample for the survey was calculated to be 374 respondents (15). The detail of survey methodology can be found in the protocol paper of the project (14).

A convenience sample of participants were recruited, assisted by 10 Balinese-based research partners who were staff of

various non-government organizations (NGOs) focusing on the health of marginalized communities including MSM and transgender people. Partner-driven sampling technique was used to recruit participants. As part of this community-engaged research the research partners have been involved in each stage of the research. These partners recruited participants purposively and *via* snowballing technique. Social media was also used to recruit participants. Each research partner recruited at least 40 participants within four rounds of data collection. Interested participants were provided the survey link *via* email or WhatsApp. Eligible participants were aged 18 years or older, Indonesian citizens who had lived in Bali for at least 6 months and intended to remain there for at least the next 6 months, identified as male or transgender (waria), and had engaged in sexual activity with a man or transgender person in the last 6 months.

All survey responses were anonymous and data stored on a secure University network. Broadly, the survey captured various attitudes, behaviors, and experiences of MSM and transgender, however this paper focuses on data relating to: sociodemographic characteristics, the Kessler Psychological Distress (K-10) scale (16), and the Subjective Happiness Scale (SHS) (17). The full survey is available on request to the corresponding author.

Measures

The structured online survey included previously validated questions and scales (14, 18–21). It was originally written in English and then translated into Bahasa Indonesia. Face and content validity testing was conducted with the research partners and Indonesian public health experts.

Demographic characteristics including age, gender, sexual identity, marital status, education level, daily activities, place of birth, and residential district were collected. Other items included family attitude toward MSM/transgender status, social networking before and during the COVID-19 pandemic, number of regular partner(s), stigma [using the 12-item short version of the HIV stigma scale (21)], discrimination [based on previously validated measures (22)], and HIV status.

Psychological Distress Assessment

The K10 scale was used to measure psychological distress (16). The ten-item scale is used widely for epidemiological and clinical purposes as a simple self-report tool to identify persons who require further assessment for depression and anxiety (16). Scores range from 1 to 50 and were collapsed into four categories: low (10–15); moderate (16–21); high (22–29); and very high (30–50).

As this survey was administered during the COVID-19 pandemic, participants were also asked to reflect how they were feeling, in terms of psychological distress, prior to the pandemic (1 year ago). Three responses were provided: (1) the same; (2) previously my feeling/condition was better compared to now; and (3) previously my feeling/condition was worse compared to now.

Happiness Assessment

The Subjective Happiness Scale (SHS), is a four-item self-report scale used to assess a person's overall happiness (7-point Likert scale) (17). The first two items ask participants to categorize themselves using an absolute rating as being a happy person and a happiness rating relative to their peers. The two last items present short phrases describing happy or unhappy people and ask respondents to identify the degree to which these scenarios best describe them (17). An overall score is calculated by averaging the answers. Scores range from 1 to 7, with higher scores reflecting greatest happiness (17). This scale has been used and validated in 14 different studies with over 2,700 participants (17).

Data Analysis

Data were analyzed using SPSS v.26. Descriptive analyses were used to describe the research variables. Mean, standard deviation, and range were calculated for continuous variables (age) and for each scale (K10 and SHS). For inferential analyses, K10 was categorized as low psychological distress (score 10–15) and moderate to very high (score 16–50) (23). SHS was categorized as less happy than average person (score <5.6) and happier than average person (score ≥ 5.6) (17). Initially, variables associated with psychological distress were identified by comparing the two categories on the K10 scale and the two categories on the SHS scale using a chi-square test. Statistical significance was set at $p < 0.05$. Subsequently, binary logistic regression reported the strength of association, which generated odds ratio (OR) and 95% confident interval (CI). Multivariate analyses provided adjusted OR (AOR), with 95% CI, by adjusting for demographics (gender, age, sexual identity, education level, daily activity, place of birth, and residential district) and epidemiological characteristics (family attitude toward MSM/transgender status, social networking before and after COVID-19 pandemic, number of regular partners, stigma, discrimination, and overall feeling/condition before COVID-19 pandemic).

Ethical Approval

The study was approved by the Human Ethics Committee, Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia (No: 2521/UN14.2.2.VII.14/LP/2019) and the Curtin University Human Research Ethics Committee, Australia (HRE 2019-0759). This research was carried out in accordance with the Declaration of Helsinki with written informed consent obtained from all participants.

RESULTS

Responses were received from 416 MSM and transgender individuals living in Bali, Indonesia and complete data were available for 363 participants. The mean age (SD) of participants was 32.46 (7.83) years and 68.3% were aged 26–40 years. The majority identified as male (72.5%) and indicated their sexual identity to be homosexual/tend to be homosexual (71.4%). More than half of the participants had completed senior high school (52.3%) and over half were working full time (55.6%). Most participants were born outside Bali Province (58.9%) and lived

in urban areas (85.7%). Nearly 30% of participants reported they were either married or living with a partner. Just over a half of participants (56.5%) had not disclosed their identity as either MSM or transgender to their family members. Around 35% were living with HIV (**Table 1**). Individual items for psychological distress and happiness are described in **Tables 2**, **4**.

Psychological Distress

The mean (SD) K10 score was 18.72 (5.7); with scores ranging from 10 to 40. Based on the four categories of psychological distress, participants were most likely to report moderate psychological distress (156, 43.0%). Only 3.9% (n = 14) participants reported very high psychological distress while 30.9% (n = 112) reported low levels of psychological distress (**Table 2**). After collapsing psychological distress into two categories, 69.1% (n = 251) of participants reported moderate to very high psychological distress.

Univariate analyses revealed eight variables (sexual identity, primary daily activity, family attitude about the sexual identity, number of regular partner, experience of stigma, experience of discrimination, overall feeling before the COVID-19 pandemic, and level of happiness) to be significantly associated with psychological distress (**Table 3**).

Multivariate analyses found students (as the primary daily activity) were four times (AOR = 4.009, 95% CI: 1.530–10.503, and p = 0.005) more likely to report moderate to very high psychological distress compared to participants working full-time. Reporting higher (AOR = 1.901, 95% CI: 1.140–3.170, and p = 0.014) compared to lower stigma; ever having experienced discrimination (AOR = 2.464, 95% CI: 1.464–4.147, and p = 0.001) compared to never; feeling better before COVID- 19 pandemic (AOR = 2.404, 95% CI: 1.388–4.161, and p = 0.002) compared to feeling the same; and self-identifying as less happy than the average person (AOR = 3.962, 95% CI: 1.980–7.927, and p = 0.000) were all significantly associated with higher psychological distress. Conversely, identifying as homosexual (AOR = 0.409, 95% CI: 0.170–0.984, and p = 0.046) was significantly associated with lower psychological distress compared to participants who identified themselves as heterosexual/tend to be heterosexual (**Table 3**).

Level of Happiness

The mean (SD) SHS score was 4.74 (0.88), with score range 4.5 (**Table 4**). Based on two categories, most participants (316, 87.1%) self-reported to be less happy than the average person with, only 12.9% (n = 47) of participants considering themselves to be happier than the average person. None of the participants who identified themselves as heterosexual felt they were happier than the average person.

Univariate analyses found being a student, living with a partner, having more than one regular partner, and having moderate to very high psychological distress were significantly more likely to be associated with reporting to be less happy than the average person (**Table 5**). Multivariate analyses found only two associations to remain significant. Those living with a partner (AOR = 15.610, 95% CI: 2.074–117.471, and p = 0.008) and participants with moderate to high levels of psychological distress (AOR = 4.155, 95% CI: 2.150–8.032, and p = 0.000) were more likely to rate themselves as less happy than the average person (**Table 5**). Interestingly, in the multivariate analysis, a significant association was also found between happiness and those who felt better before the COVID-19 pandemic (AOR =

TABLE 1 | Characteristics of the study participants.

Characteristics	Total, n (%)
Total participants	363
Age (in years)	
Mean (±SD)	32.46 (7.83)
Range	41
Age groups	
18–25	63 (17.4)
26–40	248 (68.3)
41–60	52 (14.3)
Gender	
Male	263 (72.5)
Transgender/waria	100 (27.5)
Sexual identity	
Heterosexual/tend to be heterosexual	54 (14.9)
Homosexual/tend to be homosexual	259 (71.3)
Bisexual	50 (13.8)
Education level	
No or elementary school	39 (10.7)
Junior high school	61 (16.8)
Senior high school	190 (52.3)
Diploma or higher	73 (20.1)
Marital status	
Single (not married, widow)	262 (72.2)
Married	30 (8.3)
Living with a partner	71 (19.6)
Daily activities	
Regular/full time job	2,020 (55.6)
School/college	46 (12.7)
No job/no school	58 (16)
Home duties/others	57 (15.7)
Place of born	
Bali	149 (41)
Java	133 (36.6)
Others	81 (22.3)
Current living area	
Urban	311 (85.7)
Rural	52 (14.3)
HIV+ status	
Yes	130 (35.8)
No	218 (60.1)
Do not know/have never tested for HIV	15 (4.1)
Family attitudes	
All accept	97 (26.7)
All/some reject	61 (16.8)
Do not know about MSM status	205 (56.5)

TABLE 2 | Level of psychological distress among the study participants (n = 363).

Anxiety and depression checklist (K10) (last 4 weeks)			
About how often did you feel tired out for no good reason?			
None	134 (36.9)	Most of the time	7 (1.9)
A little of the time	176 (48.5)	All the time	0 (0.0)
Some of the time	46 (12.7)		
About how often did you feel nervous?			
None	149 (41.0)	Most of the time	7 (1.9)
A little of the time	150 (41.3)	All the time	2 (0.6)
Some of the time	55 (15.2)		
About how often did you feel so nervous that nothing could calm you down?			
None	180 (49.6)	Most of the time	4 (1.1)
A little of the time	139 (38.3)	All the time	0 (0.0)
Some of the time	40 (11.0)		
About how often did you feel hopeless?			
None	141 (38.8)	Most of the time	6 (1.7)
A little of the time	165 (45.5)	All the time	2 (0.6)
Some of the time	49 (13.5)		
About how often did you feel restless or fidgety?			
None	100 (27.5)	Most of the time	8 (2.2)
A little of the time	186 (51.2)	All the time	1 (0.3)
Some of the time	68 (18.7)		
About how often did you feel so restless you could not sit still?			
None	142 (39.1)	Most of the time	5 (1.4)
A little of the time	156 (43.0)	All the time	1 (0.3)
Some of the time	59 (16.3)		
About how often did you feel so depressed?			
None	169 (46.6)	Most of the time	6 (1.7)
A little of the time	142 (39.1)	All the time	1 (0.3)
About how often did you feel worthless?			
None	187 (51.5)	Most of the time	7 (1.9)
A little of the time	131 (36.1)	All the time	0 (0.0)
Some of the time	38 (10.5)		
How do you feel/the condition that you conveyed before the COVID-19 pandemic (1 year ago)			
The same	113 (31.1)	Previously my feeling/ condition was better	226 (62.3)
			Previously my feeling/ condition was worst
			24 (6.6)
K10 score (total)			
Mean (SD)	18.72 (5.7)		
Range (minimum–maximum)	30 (10–40)		
Level of psychological distress (K10 categories)			
Low (score 10–15)	112 (30.9)	High (score 22–29)	81 (22.3)
Moderate (score 16–21)	156 (43.0)	Very high (score 30–50)	14 (3.9)

0.402, 95%CI: 0.180–0.898, and p = 0.026). This result suggests that after considering other variables, those who felt better before the pandemic were 2.5 times more likely to rate themselves as happier than average person compared to those who felt the same/did not know their feeling before the COVID-19 pandemic.

DISCUSSION

This cross-sectional study provides unique understandings of the impact the first 5–7 months of the COVID-19 pandemic has had on psychological distress and happiness amongst MSM and transgender people living in Bali, Indonesia. At the time of data collection no peer-review publications had reported findings describing psychological distress or happiness

45 (12.4)			

amongst the Balinese MSM or transgender community. A recent study amongst university students in Indonesia found 72% of reported mild depression (24) and a study within the general population reported people under 50 years experienced higher anxiety during the COVID-19 pandemic compared to older participants (25). Another study found 48% of Indonesian women experienced psychological distress as an impact of working from home (26). However, none of these studies employed the K10 to measure psychological distress.

Globally studies across various population groups have employed a range of measures to determine psychological distress (6, 23, 27–32). Studies outside Indonesia conducted during the COVID-19 pandemic have reported the levels of psychological distress using the K10 to be similar to this study (23, 27, 31, 32). An Australian study found 62.5% of adults reported moderate to very high psychological distress (23). Studies conducted in Jordan found nearly 70% of university

About how often did you feel that everything was an effort?

None	66 (18.2)	Most of the time	28 (7.7)
A little of the time	104 (28.7)	All the time	47 (12.9)
Some of the time	118 (32.5)		

About how often did you feel so sad that nothing could cheer you up?

None	124 (34.2)	Most of the time	9 (2.5)
A little of the time	166 (45.7)	All the time	6 (1.7)
Some of the time	58 (16.0)		

(Continued)

TABLE 3 | Factor associated with psychological distress among the study population (based on K10 score).

Characteristics/variables	Low (score 10–15), *n* (%)	Moderate to very high (score 16–50), *n* (%)	Univariate analyses			Multivariate analyses		
			P	OR	95%Cls	*p*	AOR	95% Cls
Total study participants (*n* = 363)	112 (30.9)	251 (69.1)						
Gender								
Male	87 (33.1)	176 (66.9)		1			1	
Transgender/waria	25 (25)	75 (75)	0.138	1.483	0.881–2.495	0.435	0.725	0.324–1.623
Age								
18–25	19 (30.2)	44 (69.8)		1			1	
26–40	74 (29.8)	174 (70.2)	0.960	1.015	0.556–1.855	0.872	1.064	0.500–2.266
41–60	19 (36.5)	33 (63.5)	0.470	0.750	0.344–1.636	0.962	0.976	0.360–2.650
Sexual identity								
Heterosexual	7 (13.0)	47 (87.0)		1			1	
Homosexual	85 (32.8)	174 (67.2)	0.005	0.305	0.132–0.703	0.046	0.409	0.170–0.984
Bisexual	20 (40.0)	30 (60.0)	0.003	0.223	0.084–0.592	0.052	0.355	0.125–1.007
Education level								
No/Elementary school	9 (23.1)	30 (76.9)		1			1	
Junior high school	13 (21.3)	48 (78.7)	0.835	1.108	0.422–2.906	0.845	1.119	0.363–3.443
Senior high school	66 (34.7)	124 (65.3)	0.161	0.564	0.253–1.258	0.340	0.613	0.224–1.675
Diploma/University	24 (32.9)	49 (67.1)	0.281	0.613	0.251–1.493	0.686	0.795	0.262–2.415
Daily activity								
Regular/full time job	72 (35.6)	130 (64.4)		1			1	
School/college	6 (13.0)	40 (87.0)	0.005	3.692	1.494–9.128	0.005	4.009	1.530–10.503
No job/no school	16 (27.6)	42 (72.4)	0.255	1.454	0.764–2.768	0.357	1.383	0.693–2.759
Home duties/others	18 (31.6)	39 (68.4)	0.570	1.200	0.640–2.249	0.668	1.163	0.584–2.317
Marital status								
Single (not married, widow)	81 (30.9)	181 (69.1)		1			1	
Married	12 (40.0)	18 (60.0)	0.314	0.671	0.309–1.459	0.117	0.485	0.196–1.199
Living with a partner	19 (26.8)	52 (73.2)	0.498	1.225	0.681–2.203	0.316	0.709	0.362–1.389
Place of birth								
Bali	53 (35.6)	96 (64.4)		1			1	
Java	39 (29.3)	94 (70.7)	0.265	1.331	0.806–2.198	0.577	1.201	0.632–2.281
Others	20 (24.7)	61 (75.3)	0.092	1.684	0.918–3.087	0.345	1.209	0.691–2.873
Family attitude about sexual identify								
All accept	30 (30.9)	67 (69.1)		1			1	
All/some reject	10 (16.4)	51 (83.6)	0.044	2.284	1.023–5.098	0.246	1.681	0.699–4.047
Family does not know the sexual identity	72 (35.1)	133 (64.9)	0.472	0.827	0.493–1.388	0.399	0.766	0.412–1.423
Residential district								
Urban	92 (29.6)	219 (70.4)		1			1	
Rural	20 (38.5)	32 (61.5)	0.201	0.672	0.365–1.236	0.958	1.022	0.459–2.272
Networking with MSM friends before COVID-19 pandemic								
Yes	60 (29.1)	146 (70.9)		1			1	
No	52 (33.1)	105 (66.9)	0.415	0.830	0.530–1.299	0.464	0.814	0.469–1.412
Networking with MSM friends after COVID-19 pandemic								
Yes	101 (31.6)	219 (68.4)		1			1	
No	11 (25.6)	32 (74.4)	0.427	1.404	0.745	0.865	1.080	0.443–2.636
Number of regular partner								
Does not have any regular partner	34 (34.7)	64 (65.3)		1			1	
1	62 (33.2)	125 (66.8)	0.794	1.071	0.640–1.793	0.945	1.024	0.524–2.001
>1	16 (20.5)	62 (79.5)	0.04	2.059	1.033–4.101	0.345	1.479	0.446–1.406

(Continued)

TABLE 3 | Continued

Characteristics/variables	Low (score 10–15), *n* (%)	Moderate to very high (score 16–50), *n* (%)	Univariate analyses			Multivariate analyses		
			P	OR	95%Cls	*p*	AOR	95% Cls
Stigma								
Lower stigma (score ≤ median)	69 (35.6)	125 (64.4)		1			1	
Higher stigma (score > median)	43 (25.4)	126 (74.6)	0.038	1.617	1.027–2.547	0.014	1.901	1.140–3.170
Discrimination								
Never experienced discrimination	34 (20.9)	122 (61.0)		1			1	
Ever experienced discrimination	78 (39.0)	129 (79.1)	0.000	2.426	1.512–3.892	0.001	2.464	1.464–4.147
Overall feeling/condition before COVID-19 pandemic								
The same/does not know	46 (40.7)	67 (59.3)		1			1	
Felt better	58 (25.7)	168 (74.3)	0.023	1.699	1.074–2.688	0.002	2.404	1.388–4.161
Felt worse	8 (33.3)	16 (66.7)	0.678	1.215	0.484–3.053	0.293	1.753	0.616–4.988
Level of happiness								
Happier than average person	28 (59.6)	19 (40.4)		1			1	
Less happy than average person	84 (26.6)	232 (73.4)	0.000	4.07	2.160–7.671	0.000	3.962	1.980–7.927
HIV status								
HIV+	35 (26.9)	95 (73.1)		1			1	
HIV–	73 (33.5)	145 (66.5)	0.983	0.295	0.295–3.304	0.078	0.602	0.342–1.059
Have never tested for HIV	4 (26.7)	11 (73.3)	0.588	0.722	0.222–2.347	0.664	0.736	0.184–2.937

students reported severe psychological distress (32), whereas, one third of University teachers (31.4%) in the same country reported severe distress levels (31). A study conducted in New Zealand during a COVID-19 lockdown found one-third of participants to report a K10 score above 12 (moderate to severe psychological distress) (27). The differences in psychological distress among people from different countries may be associated with different characteristics of participants and/or varying impact of the pandemic in terms of isolation measures and infection rates. For example, New Zealanders may have felt they were safer in their own country than elsewhere (27). Another study conducted in Italy also found more than half of participants to report no psychological distress (28). Furthermore, a study amongst medical students in Saudi Arabia found 44.5% of participants reported no distress during the COVID-19 pandemic while 12.8% reported severe distress (30).

Interestingly, in this study participants who identified as homosexual reported lower levels of psychological distress compared to their heterosexual identifying peers. This may be a result of social stigma around sexual orientation in Indonesian society. Those who identify as homosexual may have already embraced and accepted their sexual identity. The MSM participants who identified themselves as heterosexual, are likely to have not gone through this process. In Indonesia there is significant social stigma associated with identifying as homosexual or bisexual (12). These participants are likely to be struggling with their sexual identity and many may also be hiding their identity from family or friends or living a double life which may contribute to their higher levels of psychological distress.

This study also found MSM and transgender students were four times more likely to report moderate to very high psychological distress in comparison to peers currently working full-time. This phenomenon could be due to students experiencing higher levels of stress associated with studying and adapting to new ways of learning (for example, online learning). University students in France reported more than 60% of participants experienced moderate to severe life stress (33), however a study among medical school students in China found <4% reported "at least moderate" levels of anxiety during the COVID-19 pandemic (34). The lower prevalence of distress amongst working group participants may also reflect higher levels of well-being and resilience from having overcome past adversities and experiencing fewer daily disruptions which may help protect subjective happiness (27, 35). Higher levels of resilience has been suggested to reduce fear and anxiety due to COVID-19 (35). These findings warrant further investigation regarding the potential protective factors of employment during COVID-19 on the impact of psychological distress.

Other factors that significantly influenced psychological distress amongst MSM and transgender in this study were stigma and discrimination experiences. Participants who reported high levels of stigma or had ever experienced discrimination were more likely to report higher psychological distress. Stigma and discrimination are associated with poorer social and emotional health, consequently affecting levels of psychological distress (36). The impacts of the COVID-19 pandemic may act as additional stressors on stigma and discrimination. In countries that reported high levels of stigma toward sexual minority groups, lower life satisfaction were experienced by those who did not conceal their status in order to avoid discrimination (37). Furthermore, global evidence demonstrates that COVID-19 pandemic restrictions have been used as an

excuse to discriminate, perpetuate stigma, and violence against LGBT individuals which may also increase distress levels (38).

Moreover, LGBT populations, especially those who have other minority identities (such as ethnic minorities) face higher likelihood of unemployment, HIV, suicide and mental health problems, institutional discrimination and other human right violations compared to the general population (39). Analyses of three studies focusing on the health and happiness of LGBT individuals found minimizing discrimination to be positively associated with subjective well-being (40). A study of life satisfaction amongst sexual minority groups in 28 European countries revealed that life satisfaction varied greatly across countries, due to the structural stigma of those countries and was related to the varying demands that were required to conceal an individual's sexual orientation (37). These findings warrant further investigation regarding the role of factors related to stigma and discrimination on the mental health of LGBT communities during the COVID-19 pandemic.

Participants in this study who felt their overall feeling was better before the pandemic were 2.4 times more likely to report moderate to very high psychological distress compared to participants whose felt they had the same feeling before the pandemic. Similarly, longitudinal research in the United States (US) identified significant increases in distress during the emergence of the COVID-19 pandemic (41). However, the levels of distress were largely diminished in the weeks that followed, which might be associated with increased resilience (41). Furthermore, a national survey in Ireland revealed significant increases in symptoms of depression, stress, and anxiety upon entry into COVID-19 quarantine (42). Different levels of psychological distress across populations, including patients who experienced COVID-19 infection; individuals under quarantine; and the general population were reported in China (43). The prevalence of depression (29.2%) increased predominately in patients who experienced COVID-19 infection (43), while COVID-19 patients and the general public reported a greater proportion of severe depressive symptoms compared to those in quarantine (43).

The majority of MSM and transgender participants in this study viewed themselves as less happy than the average person, which may be due to fear of COVID-19. A study examining the relationship between hope, resilience, and subjective happiness in Turkey revealed that subjective happiness was mediated by a fear of COVID-19 (35). However, this study was unable to compare the subjective happiness level before and after COVID-19. Compared to 2016, the proportion of unhappiness in the general population in China doubled during the COVID-19 pandemic (44). To date, no peer-review publications appear to have reported happiness amongst MSM and transgender communities during the COVID-19 pandemic. However, a US study revealed that the majority of MSM participants had decreased quality of life and increased anxiety due to COVID-19 which was similar to the findings of this study (45).

Comparable to the psychological distress findings, when happiness was considered, none of the heterosexual participants reported to be happier than average person. Participants who were currently living with a partner were 19 times more likely

TABLE 4 | Level of happiness among the study participants (n = 363).

Subjective Happiness Scale (SHS) individual items	Mean (SD)	Range
In general, I feel myself	5.17 (1.39)	6
When compared to most of my friends, I feel that I	5.11 (1.49)	6
Some people are generally very happy. They enjoy life no matter what happens, get the most out of everything. To what extent do these categories suit you?	4.98 (1.37)	6
Some people are generally not very happy. Even though they are not depressed/sad, they don't look as happy as they should. To what extent do these categories suit you?	4.31 (1.63)	6

SHS total (reverse the 4th question)	18.96 (3.53)	18
SHS score (reverse the 4th question)	4.74 (0.88)	4.5
Level of happiness (*n* = 363)	*n* (%)	
Less happy than average person	316 (87.1)	
Happier than average person	47 (12.9)	

to rate themselves as less happy than average person compared to those who were currently living alone. A nationally representative study in the US revealed that stress related to sexual minority status in earlier life may accumulate over time, resulting in lower happiness later in life (46). Moreover, those with current different-sex partners but histories of same or both-sex partners may be disadvantaged and the heterosexual identified group may also have faced pressure to act "closeted" and may be unhappy with their current sexual arrangements (47, 48). Furthermore, current and lifetime measures of the sex of sexual partners revealed important happiness differences, which advised that stability in sex of sexual partners was associated with better well-being/happiness (48).

Psychological distress and level of happiness were highly associated. In this study, those who reported moderate to very high psychological distress were four times more likely to be less happy compared to those who reported low psychological distress. Likewise, compared to happier people, those who were less happy were also four times more likely to report moderate to very high psychological distress. A study in Turkey found distress and happiness to have a negative correlation (inversely correlated) and positivity to be a potential mediator on COVID-19 perceived risk, death distress, and happiness (49). Individual's positive views about self, life and future (positivity) was positively associated with happiness and negatively associated with death distress (49). Therefore, it has been suggested positivity is an important aspect of developing strength-based programs aiming to lessen psychological distress and increase happiness (49).

Study Strengths and Limitations

This study provides baseline findings about psychological distress and happiness amongst specific marginalized populations in Bali, Indonesia. The study achieved a sufficient sample during a crisis period (14). However, the study is subject to a number

TABLE 5 | Factor associated with level of happiness among the study population (based on SHS score).

Characteristics /variables	Happier than average person	Less happy than average person	Univariate analyses			Multivariate analyses		
			P	OR	95%CIs	*p*	AOR	95% CIs
Total study participants (*n* = 363)	47 (12.9)	316 (87.1)						
Gender								
Male	33 (12.5)	230 (87.5)		1			1	
Transgender/waria	14 (14.0)	86 (86.0)	0.713	0.881	0.450–1.727	0.251	1.969	0.619–6.265
Age								
18–25	7 (11.1)	56 (88.9)		1			1	
26–40	23 (13.3)	215 (86.7)	0.643	0.814	0.342–1.938		1.354	0.435–4.213
41–60	7 (13.5)	45 (86.5)	0.702	0.804	0.263–2.460		1.763	0.397–7.827
Sexual identity								
Heterosexual	0 (0.0)	54 (100.0)		1			1	
Homosexual	40 (15.4)	219 (84.6)	0.997	0.000	0.000		0.000	0.000
Bisexual	7 (14.0)	43 (86.0)	0.997	0.000	0.000		0.000	0.000
Education level								
No/Elementary school	7 (17.9)	32 (82.1)		1			1	
Junior high school	9 (14.8)	52 (85.2)	0.671	1.264	0.429–3.727		1.000	0.284–3.518
Senior high school	22 (11.6)	168 (88.4)	0.280	1.670	0.659–4.237		2.804	0.934–8.414
Diploma/University	9 (12.3)	64 (87.7)	0.421	1.556	0.531–4.558		1.723	0.486–6.106
Daily activity								
Regular/full time job	32 (15.8)	170 (84.2)		1			1	
School/college	1 (2.2)	45 (97.8)	0.038	8.471	1.127–63.681		3.715	0.432–31.965
No job/no school	7 (12.1)	51 (87.9)	0.480	1.371	0.571–3.292		0.846	0.297–2.412
Home duties/others	7 (12.3)	50 (87.7)	0.508	1.345	0.560–3.230		1.043	0.347–3.135
Marital status								
Single (not married, widow)	43 (16.4)	219 (83.6)		1			1	
Married	3 (10.0)	27 (90.0)	0.367	1.767	0.513–6.087		1.850	0.418–8.196
Living with a partner	1 (1.4)	70 (98.6)	0.010	13.744	1.859–101.639		19.463	2.474–153.124
Place of birth								
Bali	16 (10.7)	133 (89.3)		1			1	
Java	23 (17.3)	110 (82.7)	0.114	0.575	0.290–1.143		0.485	0.203–1.157
Others	8 (9.9)	73 (90.1)	0.838	1.098	0.448–2.688		0.816	0.291–2.289
Family attitude about sexual identify								
All accept	30 (30.9)	67 (69.1)		1			1	
All/some reject	10 (16.4)	51 (83.6)	0.142	2.212	0.766–6.388		1.767	0.498–6.269
Family does not know the sexual identity	72 (35.1)	133 (64.9)	0.373	1.360	0.692–2.673		2.139	0.748–6.113
Residential district								
Urban	42 (13.5)	269 (86.5)		1			1	
Rural	5 (9.6)	47 (90.4)	0.442	1.468	0.552–3.901		1.095	0.303–3.950
Networking with MSM friends before COVID-19 pandemic								
Yes	24 (11.7)	182 (88.3)		1			1	
No	23 (14.6)	134 (85.4)	0.400	0.768	0.416–1.419		0.716	0.304–1.687
Networking with MSM friends after COVID-19 pandemic								
Yes	45 (14.1)	275 (85.9)		1			1	
No	2 (4.7)	41 (95.3)	0.103	3.355	0.784–14.356		3.357	0.717–15.711
Number of regular partner								
Does not have any regular partner	18 (18.4)	80 (81.6)		1			1	
1	25 (13.4)	162 (86.6)	0.265	1.458	0.752–2.828		0.918	0.431–1.959
>1	5 (5.1)	74 (94.9)	0.013	4.162	1.347–12.867		3.034	0.911–10.103

(Continued)

TABLE 5 | Continued

Characteristics /variables	Happier than average person	Less happy than average person	Univariate analyses			Multivariate analyses		
			P	OR	95%CIs	*p*	AOR	95% CIs
Stigma								
Lower stigma (score ≤ median)	23 (11.9)	171 (88.1)		1			1	
Higher stigma (score > median)	24 (14.2)	145 (85.8)	0.507	0.813	0.440–1.500	0.234	0.649	0.318–1.324
Discrimination								
Never experienced discrimination	26 (13.0)	174 (87.1)		1			1	
Ever experienced discrimination	21 (12.9)	142 (87.1)	0.974	1.010	0.546–1.871	0.416	0.705	0.304–1.635
Overall feeling/condition before COVID-19 pandemic								
The same/does not know	12 (10.6)	101 (89.4)		1			1	
Felt better	31 (13.7)	195 (86.3)	0.420	0.747	0.368–1.518	0.026	0.402	0.180–0.898
Felt worse	4 (16.7)	20 (83.3)	0.406	0.594	0.174–2.031	0.238	0.444	0.115–1.712
Psychological distress (K10)								
Low	28 (25.0)	84 (75.0)		1			1	
Moderate to very high	19 (7.6)	232 (92.4)	0.000	4.070	2.160–7.671	0.000	4.525	2.210–9.265
HIV status								
HIV+	17 (13.1)	113 (86.9)		1			1	
HIV–	28 (12.8)	190 (87.2)	0.950	1.021	0.535–1.948	0.814	1.103	0.489–2.486
Have never tested for HIV	2 (13.3)	13 (86.7)	0.978	0.978	0.203–4.717	0.297	2.952	0.385–22.612

of limitations. Participants predominantly resided in urban areas (the capital city of Bali). Considering the restriction of movement and social distancing during the COVID-19 pandemic, findings might be more generalizable to Indonesian urban, compared to rural areas. The experiences of MSM and transgender people living in Bali, may differ in other areas in Indonesia. Findings of this study were limited to MSM and transgender who have accessed sexual health clinics or an NGO outreach service in Bali; hence, the study may not be generalizable to those who live in remote areas those not currently connected to a health service and/or those who may have more limited access due to COVID-19 restriction (50). The survey, which began development before the pandemic, asked limited questions specific to the COVID- 19 pandemic. The study was unable to assess the effect of the COVID-19 pandemic on mental health and happiness of MSM and transgender in Bali since the baseline data were not available. Further research is warranted to provide a deeper understanding of the impact of COVID-19 on MSM and transgender people in Bali, Indonesia.

Policy Implication and Future Research

This study provides an important insight into to the mental health and happiness of sexual minority groups which are sometimes neglected and highly at-risk (51). Mental health and consequently access to mental health services are stigmatized in some countries like Indonesia, and the COVID-19 pandemic makes access more difficult due to isolation measures. The findings of this study suggest that psychological distress amongst MSM and transgender people is a significant public health issue which is influenced by many factors. The psychological impact of COVID-19 may also exacerbate mental health burden and vulnerability among these already at risk communities (e.g., anxiety, depression, and suicidal thoughts) (52). Given stigma and discrimination have been found to significantly influence psychological distress, population based interventions are necessary to effect social and policy changes. Concurrently access to mental health support service for these populations is critical during and after the pandemic (51, 52). Happiness is certainly a variable that influences psychological distress in these communities. Future research will need to explore various solutions to mitigate the exacerbation of the mental health burden due to the COVID-19 pandemic amongst MSM and transgender communities This may include targeted online and telehealth services and/or 24/7 helplines which can be accessed regardless of restrictions. Further investigation around the potential protective factors of employment during COVID- 19 on the impact of psychological distress and happiness is also needed to inform policy and practice.

CONCLUSION

MSM and transgender individuals currently living in Bali, Indonesia are facing moderate to very high psychological distress and lack of happiness during the COVID-19 pandemic. Several factors contributed to the distress including being a student, reporting higher levels of stigma, had ever experienced discrimination, felt themselves better before the COVID-19 pandemic, and reporting less happy than average person. Factors contributed to reduced happiness including living with a partner and having moderate to very high psychological distress. These findings provide early evidence of the need for interventions aimed at improving general mental and sexual health amongst

these communities during and after the pandemic. Stigma and discrimination are important areas of focus to reduce distress. Whilst these are not new issues for MSM and transgender communities, the COVID-19 pandemic is likely to exacerbate the impact. MSM and transgender people in Indonesia may become more hidden and find it difficult to access necessary sexual health services. Furthermore, restrictions may have further exacerbated the level of distress amongst those who are studying. Further research to explore the development of public health policy and the efficacy of interventions, particularly those that can be implemented through the NGO research partners, to support MSM and transgender people in Bali is required. This may include increased access to services including provision of online or "remote" services for MSM and transgender people. Broader governmental strategies to address employment during the pandemic should also be considered.

DATA AVAILABILITY STATEMENT

The supporting data of this study are available on request from the corresponding author. Access data set requests should be directed to Ni Wayan Septarini, septarini@unud.ac.id.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Human Ethics Committees, Faculty of Medicine, Udayana University/Sanglah Hospital, Bali, Indonesia (No: 2521/UN14.2.2.VII.14/LP/2019) and Curtin University, Western Australia (HRE 2019-0759). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

NS developed and drafting the proposal, data collection, analyses, and preparing/drafting the manuscript. JH, SB, and BM contributed equally to the acquisition and interpretation of data, revision on results, and critically reviewed the manuscript. All authors contributed to the article and approved the submitted version.

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Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

5.6 Summary of survey results (papers) and recommendations (Phase 3)

The findings of the survey were captured in four different papers submitted to peer-reviewed journals. The key findings and recommendations based on the survey results presented in the four papers include:

1. MSM and waria in Bali reported high levels of stigma. Less than half of MSM and nearly one-third of waria participants experienced discrimination. The higher level of stigma amongst MSM was related to family rejection/unawareness of their MSM status, while non-single and non-Hindu MSM were more likely to experience discrimination. Homosexual and bisexual waria reported low level stigma compared to heterosexual waria. Waria who had regular employment were more likely to experience discrimination compared to those who were studying. The findings highlight the need for specific strategies to engage families as familial support found as a significant factor in reducing stigma amongst MSM. Advocacy for legislation to reduce workplace discrimination, especially for waria is needed.
2. Non-Hindu MSM, MSM with lower condom use knowledge scores, MSM who had higher level of stigma, and those who stated that is very safe to stay in Bali were associated with reporting less positive condom attitudes. Amongst waria participants, a higher number of commercial sex partners was associated with less positive condom attitudes. Improving STIs knowledge by actively promoting STIs prevention and treatment may increase positive attitudes towards condom use. “Non-condom-based” approach, such as education on recognizing the perceived differences sexual contexts between regular, casual, and commercial partners, may be beneficial as risk reduction strategies. The phenomenon of why religions other than Hindu or Muslim reported lower condom attitude scores is worthy of further investigation.
3. Condom use behaviours scores amongst MSM were associated with condom use attitudes; STIs experiences; marital status; employment status; number of regular; casual; and commercial sex partners; and discrimination experiences. Condom use behaviours scores amongst waria were associated with HIV status, marital status, number of regular, casual, and commercial sex partners. Improving existing strategies to increase the positive condom use attitudes may increase consistent

condom use amongst MSM and waria. Online and mobile condom use education campaigns may help tackle the lack of condom use knowledge during pandemic situations. “Non-condom-based” strategies, such as how to differentiate sexual contexts between regular, casual, and commercial partners, may be included in risk reduction strategies.

4. The majority of MSM and waria participants reported moderate to very high psychological distress during the COVID-19 pandemic. Several factors contributing to distress included being a student, reporting higher levels of stigma, had ever experienced discrimination, felt themselves better before the COVID-19 pandemic, and reporting less happy than average person. While reduced happiness was influenced by living with a partner and having moderate to very high psychological distress. Interventions should focus on strategies to reduce stigma, provide non-discriminatory services, and improve access to essential health services. Furthermore, restrictions may have further exacerbated the level of distress amongst those who are studying. Various solutions to mitigate the exacerbation of the mental health burden due to the COVID-19 pandemic amongst MSM and transgender communities may include targeted online and telehealth services, and/or 24/7 helplines that can be accessed regardless of restrictions. The development of public health policy and appropriate interventions that can be implemented through the NGO research partners to increase access to services including provision of online or “remote” services for MSM and transgender people, and broader governmental strategies to address employment during the pandemic, should also be considered (Septarini, Hendriks et al. 2021).

Chapter 6 Phase 4 In-depth Interview Results (Phase 4)

This chapter describes findings from phase 4 (explanatory phase 2, in-depth interviews) and provides deeper exploration of the quantitative findings described in Chapter 5 (phase 3). This chapter addresses objective 4 of this thesis, particularly in relation to the lived experiences of being MSM and waria in Bali. This chapter also specifically addresses objective two of the thesis, discussing enablers and barriers that influence safer sex behaviours among MSM and waria in Bali. The methods employed for the interviews have been described in Section 3.2 of Chapter 3. Information for respondents, in-depth interviews, a short survey and guidelines can be seen in Appendix D. Demographics of interview participants are described in Table 5.11, Section 5.4 of Chapter 5.

6.1 Experiences of being MSM and waria living in Bali

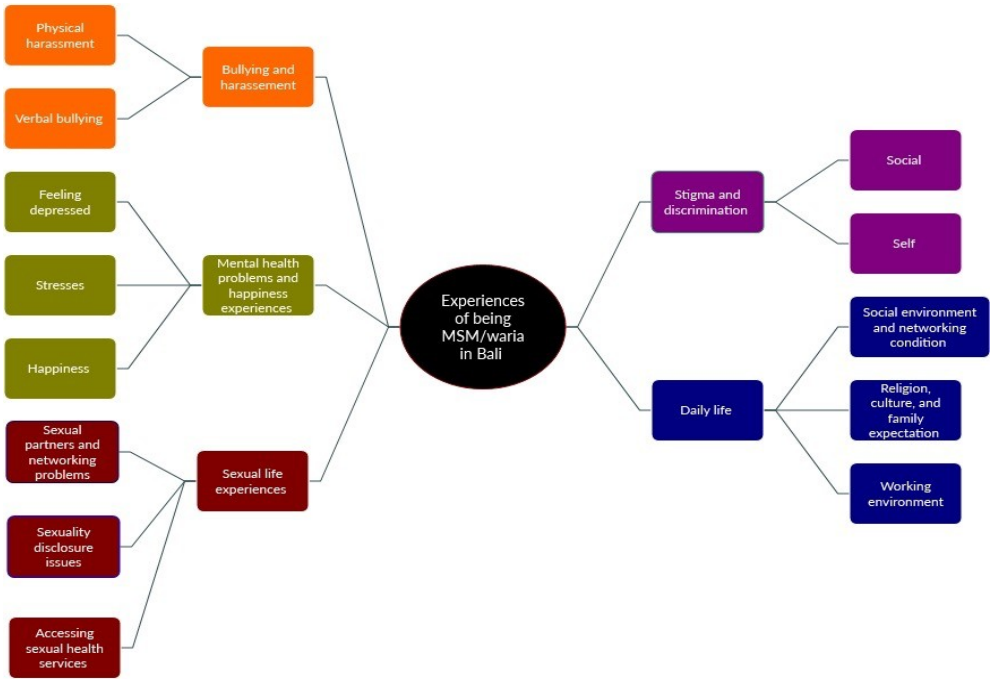

Figure 6.1 Lived experiences of being MSM/ waria in Bali

The lived experiences of being MSM and waria residing in Bali were illustrated through seven key themes: *bullying and harassment; stigma and discrimination*; *daily life*; e*xperiences on STIs and HIV health services*; *experiences in working environment*; *mental health issues and happiness*; and *sexual life*. Mostly, experiences were common to MSM and waria; however, only waria participants described physical harassment (see Figure 6.1).

6.1.1 Harassment and bullying

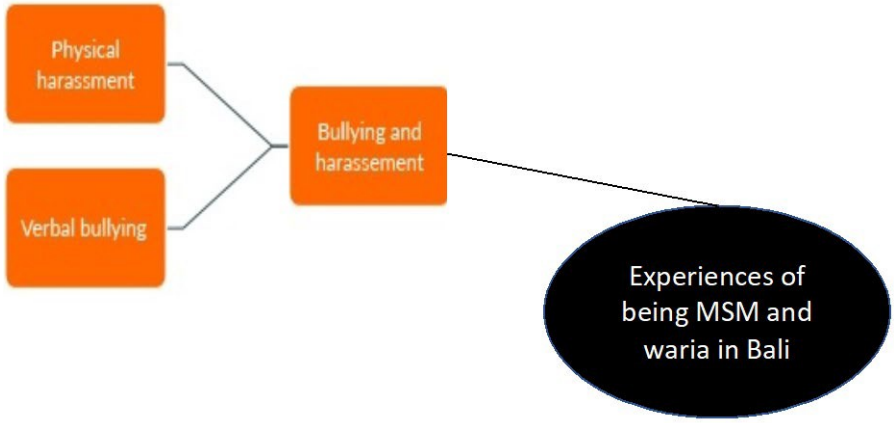

Figure 6.2 Bullying and harassment experienced by MSM and waria in Bali

6.1.1.1 Physical harassment

Waria participants discussed experiencing *physical harassment*. Harassment was most likely to be experienced by waria who worked on the street as male sex workers. Participants discussed people who passed by the street throwing stones, water or raw eggs at waria sex workers. These experiences are illustrated by three waria:

> (A motorcycle rider) *passed by; he brought a stone and thrown it to waria.* (Waria, Bali)

> *Yes ever anyway. I used to work on the road* [to find/meet clients] .... *Once people who passed by also thrown stone or water like … to us.* (Waria, Bali)

> *Yes, we did not know where the guys from, but we often get discriminated and ridiculed. Ih "bencong" f**ck, so often also thrown by water or eggs*

or any kinds of vegetables, or stone. But what to? Our job are at risk but life must go on. (Waria, Non-Bali)

6.1.1.2 Verbal bullying

While waria sex workers experienced physical harassment, *verbal bullying* was experienced by most waria and MSM during their school and/or college years. Participants expressed being called "girly boy or bencong or banci" because of their "girly" body language. They[2] were excluded by peers as they did not play "boys" games such as flying kites and football. "Bencong or banci" is a common Bahasa Indonesia designation for a male (boy or man) who acts, reacts, talks, uses body language and dresses like a girl or woman. "Bencong or banci" is also used to describe a male (boy or man) who likes to play games and participate in activities that are traditionally considered to be associated with girls or women; for example, playing with dolls, preferring to make friends with girls as opposed to having male friends, and preferring work associated with fashion and beauty. Participants discussed verbal bullying quickly spreading throughout their schools/colleges with even new friends talking about their "girly" appearances behind their back. One participant did, however, comment that girls were more accepting. Participants expressed their feelings of helplessness, indicating that they just "carried on." The following comments illustrate the discussion:

Yes, I felt intimidated. I could not play any game with boys, because I cannot play kite, cannot play this, cannot any boys games. I just liked playing with girls like that ….
In high school was not very showing, but when you play such a 'girly' type of games, then obviously can see the transgender side. (Waria, Non-Bali)

The bad words only from people … just hurting my heart, because of being insulting like that. I want to be angry, but what to do, cannot do anything about it.… Yes, they're put me down, bad words, and left me, so they stay away from me.… But I did not get the same experienced with the girls/women, on how ya ya, I think they [the girl/women] *consider us as their friend, so.* (Waria, Non-Bali)

[2] Indonesia does not have any particular pronouns for the third person to a woman, man, and waria. Therefore, based on Australian pronouns used by gender diverse and non-binary people *they* is used as the pronoun for waria in this thesis.
The Queensland Human Rights Commission. (2021). "Why pronouns matter." Retrieved 25 September, 2022, from https://www.qhrc.qld.gov.au/your-rights/for-lgbtiq-people/why-pronouns-matter.,

I once insulted, so insulted because a little waving (girly) so anyway…. One day college friends said, "bencong," but he actually did not know the truth about me. There were also new friends, ee, talking about me behind my back. (MSM, Non-Bali)

Its started at school, that I was hanging out with girls mostly so? Yes, yes, yes, at school, its still wear guys' clothes but hang out with girls like that…. Once when first in school, one was said, "bencong" the first time. But yes, how else would anyone like this (transgender) *can do?* (Waria, Bali)

6.1.2 Stigma and discrimination

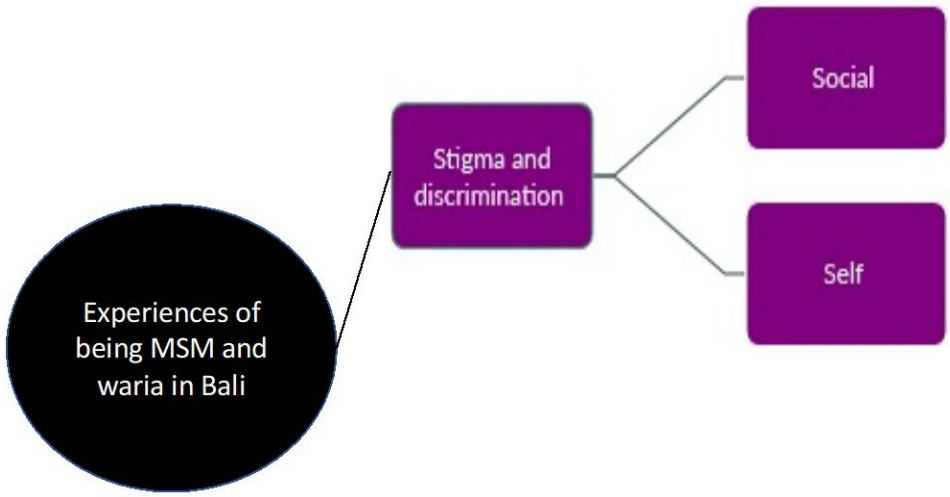

Figure 6.3 Stigma and discrimination experienced by MSM/waria in Bali

6.1.2.1 Social stigma

Both social stigma (stigma from other people, including discrimination) and self-stigma (stigma from oneself) was experienced by MSM and waria. *Social stigma and discrimination* were mostly experienced by waria as they cannot hide their appearance. Waria participants reflected that MSM were less likely to experience discrimination as they (MSM) can hide their sexual identity.

The discrimination is a little bit for them [MSM]. *They* [MSM] *are more accepted.* (Waria, Bali)

Discrimination, hmm, never seen. If MSM I never seen any discrimination. Yes, because he's MSM. No one know that he is since they are just the same appearance. If they were a waria, they dressed. So people see it like

it's different…. I have seen discrimination once on waria friend. (MSM, Non-Bali)

Yes, if like in a public place so if waria it looks like a girl so. I think is likely being discriminated against. (MSM, Bali)

However, waria discussed overcoming stigma and discrimination if their family accepted them as they are. One waria participant discussed the experiences of their friend indicating that once her friend was able to get a job related to her skills, they can live as they are (waria) and will be accepted by her family. MSM also expressed that stigma was not prominent in Bali; for example, unlike some other parts of Indonesia, males could bath freely together at the river.

Even there's a waria friend who are from higher caste in Balinese society. Yes, instead of discrimination, the family welcome them since they has talent skills they can work because they can speak Germany. They can work in hotel and use kebaya (traditional Balinese girl outfit). Because they has good skill and talent, they can be as they are (waria). (Waria, Non-Bali)

In Bali there is no (stigma). Even in Bali in the public bathing place, there are a lot of guys. But people are just like that is common. But if it is in Java they will be thrown by stones and expelled. (MSM, Non-Bali)

6.1.2.2 Self-stigma

Around half of participants, especially those who were from outside Bali, described experiencing feelings that were associated with *self-stigma* (such as self-blaming, feeling guilty and embarrassed about their gender/sexual identity). For some, self-stigma was associated with a time when they faced problems. For others, a specific experience triggered the stigma. For example, one participant discussed being raped, then experienced feelings of guilt and self-blame, followed by a withdrawal from social activities. Others discussed feelings associated with self-stigma related to their religious beliefs and family expectations, with some expressing concern that they were an embarrassment to their family. One participant expressed feelings of resentment for a friend who already had a family (wife and children). Participants discussed how religion helped them cope with their feelings (it was "God's plan").

I experienced it myself. I meant when my condition is a little bit down, a lot of problems, and a person yelled, "Bencong." And I felt very insulted,

they insulted me. So, is it my fault to be like this? But I just carry on. (Waria, Non-Bali)

The first time I was, when I was made drunk and unconscious that night and felt raped. I was feeling guilty and blaming myself. I continued to cry, crying a lot and prayed a lot, yes maybe for a week or so. But at the beginning time only I felt like feeling guilty with myself.… I once block all the contacts and all, once someone asked but I refused because the sinful feeling. But not for so long, then after a while I become addicted to it again [having sex with man]. (MSM, Non-Bali)

I used to feel eh why I am like this? I feel like embarrassed only with family because I am the first child how it can be? Sometimes I just think of it that way, especially when my family ask why I do not have any girlfriend. Yes, no close with girls so I feel that. (MSM, Bali)

Yes, because it's like feeling guilty with God so. Because like God, it's already created Adam and Eve, so guys and girls that's it. So, I think it's felt guilty only I have violated what should not be violated so,until now, if I do night prayer, sometimes I still feel that way anyway. (MSM, Non-Bali)

I personally sometimes so. Why, if at the time itself yes or if sometimes see my age as a male friend already with his wife already have 3 children already have children 2. They go to religious events with their children, why can't I be like them? Why I was created like this? Sometimes that's it. But back again, yes, maybe I've been created like this. God has other plans, so aja, I'm cold down my heart. On the one hand, I'm going to have a good side where they can't. I think that's my purpose. (Waria, Non-Bali, 35 yo) (participant 8)

Interestingly, two waria participants from Bali discussed always accepting themselves and never experiencing self-blame. They were happy and discussed their community and how they helped each other.

Oh, I felt this (became waria) from my birth. Yes, I have received like this from the "above" (God). All I know is I accept myself and I am happy. I was not blaming myself. Because there are many, because we are not alone; many friends are also waria. So, we here's to helps each others who feel alone. (Waria, Bali)

Never really, never [never felt guilty to become waria]. (Waria, Bali)

6.1.3 Daily life

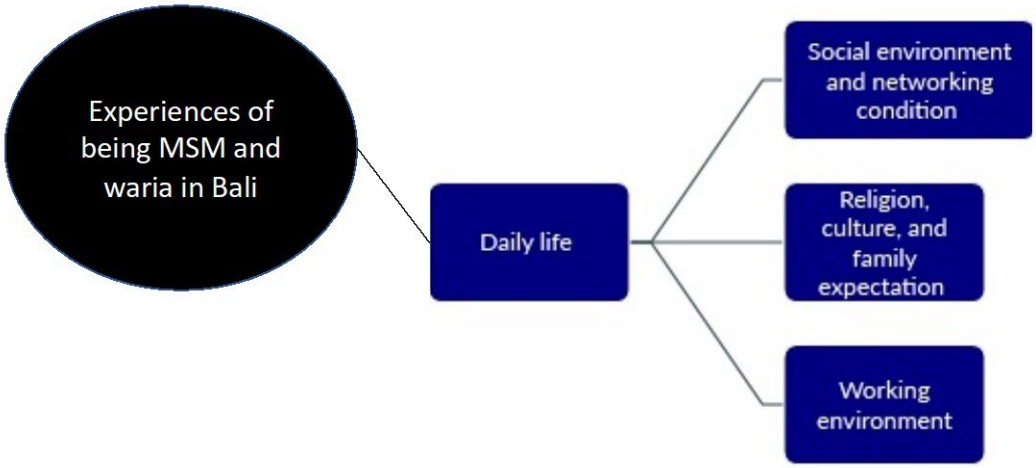

Figure 6.4 *Daily life* of MSM /waria in Bali

The theme *daily life* included three sub-themes: social environment and networking; religion, culture, and family expectation; and working environment (Figure 6.4).

6.1.3.1 Social environment and social networking condition

Social environment emerged as a sub-theme related to *daily life* of MSM and waria communities. Most non-Bali born waria participants described Bali to be a good place to live as people respect each other with less stigma. Moreover, a Bali born MSM also mentioned there were many common places in Bali where waria can socialise, including gay bars. A non-Bali born waria expressed that Bali born waria need to mind their manners and only can 'go wild' outside their neighbourhood, while non-Bali born waria can freely go wild anywhere in Bali. Balinese waria have limited "freedom" in Bali compared to non-Balinese waria and "freedom" gained by non-Bali waria was a result of living a long away from their home villages and families.

> *Ee, for MSM in Bali, in my personal opinion, there are more people more respect to us. There are no such huge discrimination happening, from Balinese I meant. However, there are a lot of people that come from outside Bali now. That's now as the trigger to discriminate us. But Balinese people are not doing any of discrimination. For the waria, in my opinion, still really respected by other people. They really don't care much in here (Bali). That's my experience. For a little of time I sometimes*

experienced "sneer" or they make me as an object of joke. (Waria, Non-Bali)

Because of environmental factors may be right. Like here (Bali), a lot of places where waria can go, like a bar, it's a lot here so it's a common place. Balinese people are like that [they see waria as a common phenomenon]. *But outside Bali, it's still taboo like it's still rare.… If in Java, a friend of me still say like in what ya still like not as free as in Bali so you're not as welcome as in Bali's people.* (MSM, Bali)

During in Bali, pre-waria during pre make-up time, I was wearing a girl dress only at night time. So, the neighbour knew me when I live in Kuta for 5 years.... I keep my good manners. They are welcome me; no one is stigmatised me. Stigma, maybe stigmatise only from 1 in 2 people out of 100. But I chose to be wild in Denpasar, not in Kuta area. So, my neighbourhood did not know about it [work and find client on the street]. *That's what's I did to taking care of myself.* (Waria, Non-Bali)

The treatment from the community, maybe like this. Those who came from outside Bali, they are freer than those who originally from Bali. Those from Bali, need to keep their good manners, and image as Balinese, even though they are so beautiful, but still, they need to break and stop when they are in their neighbourhood. Outside their environment, they can be wild. But those who came from outside [outside Bali]*, mostly cannot stop; they just wild wherever.* (Waria, Non-Bali)

In addition to the experiences described as living difficulties faced by participants, they were also influenced by their *social network* which have changed as a result of the COVID-19 pandemic. Two waria participants described only socialising with work colleagues as they were unable to socialise with their friends due to isolation rules.

Currently, most of my friend are from the workplace, yes, friends from LGBT communities. For the regular friends [outside LGBT communities], *heterosexual friends only several since I am now more closed. Only regular friends, but I do not like to be sitting around with them, no gossiping, I don't like that, only know them superficially, it is enough.* (Waria, Non-Bali)

Ee, I used to obey [the rule] *during the initial time of the beginning of the corona. Continue mid-corona, we once meet each other at the stalls with a lot of laugh right, see them quite often. But now, I do not see again because the restriction is extended. I cannot go out again cannot gather again, so stay at home in the room only.* (Waria, Bali)

In addition to not having opportunities to socialise with friends, two MSM participants who were still in college discussed that many of their friends returned to their hometowns and how they can only meet certain friends in boarding houses.

Have college friends and MSM friend as well…. Oh, but after this Covid, my friends reduced a lot of as my college friend go back to their hometown. (MSM, Bali)

A married MSM who lives in a rural area stated that MSM in his village usually hang out with the general population (non-MSM specific). This is because many MSM were married and had not disclosed their MSM status to their wives, family, and communities. To keep their sexuality status secret, they usually engaged with the general population.

Here MSM are often hang out with ordinary people in Singaraja [a small town 200 km from capital city]. (MSM, Bali)

One MSM participant discussed how some MSM do not like to be friends with waria as they are "girly"; however, he had close friends who were waria. This comment highlights the different sub-cultures of MSM and waria in Bali. His waria friends provided socialisation opportunities during the pandemic via video conferencing.

Yes, same group (MSM), but not waria. Most of my friends do not like those who act like girl, "ngondek/girly" people. But I am ok with that person. Most of the "girly" is good anyway. I almost every night have video call with friends that waria, so. (MSM, Non-Bali)

6.1.3.2 Religion, culture, and family expectation

A non-Bali born waria discussed feeling accepted by their community. They did however mention the need to recognise where and when they could wear female clothing. This reflected the situation and the expectation of the cultural event they were attending. While it was acceptable to wear female clothing for work, and some female clothes for NGO events, if they attended a traditional event they would wear the appropriate male attire, Respecting culture, demonstrating proper manners and "dress code."

1 like to know the key person to do the advocacy in the environment like the head of the village…. They know me as well the traditional police as well and even good with all their wives. I always participate during social service event, so always participate in the environment. So, we're mostly into the neighbourhood.

As much as possible continue as; as much as possible wear sarong [fabrics] *in the village environment so, even when we pray at night, I should wear sarong.*
In Bali is free. I can customize the event. For example, at the NGO event I use semi-female day clothes. If I look for clients, yes, I wear mini dress. But if it is a Muslim religious event, I wear my sarong. For Bali cremation ceremony event, yes, I wear a man Balinese traditional fabrics, hehe. (Waria, Non-Bali)

I have a friend also who is in the same religion as me too. Like just for example reminding me so, you should change [to heterosexual]*.... He willing to give input at first, but now he does not look again…. In the boarding house there are friends also who are my classmates, they are mostly girls.* (MSM, Non-Bali)

Participants also discussed different perspectives about being born and living in the same place. For example, a Bali born waria thought it would be easier to be born and live in Java or other places compared Bali. Bali born waria thought this as they felt other cultures were not as strict as Bali culture. Bali born waria mentioned they need to look after the parents, temples, go to ceremonies, and they need to marry and have children to preserve the family. In comparison, non-Bali born waria were free because they do not need to stay with their family; the daughters can look after the family/parents, and the sons can do whatever they wanted to.

In contrast, other non-Bali born waria felt people were crueller (to waria) in their hometowns compared to in Bali. A Bali born waria discussed that, in order to maintain the family reputation, non-Balinese waria need to live far away from their family so they can ensure their family's name is not be ridiculed by neighbours and villagers.

More free in Java than in Bali, hehe. More freely in Java, parents are more accepting in Java than in Bali.… Yes, maybe Balinese parents are ashamed to have a waria child.
Moreover, because the man in Bali have the responsibility that man must marry must have children, must look after the family temple Maybe his [parent's] *mind if my son became a waria who will bring them to the cemetery when they died. It has to be a man. It's a big responsibility, man. The responsibility of the boys/men in Bali is great term. Like me, it's a big responsibility.* (Waria, Bali)

Different [Bali and outside Bali]. *Because my seniors and my Bali peers who often they complain. They said: You're lucky girl, you become a sissy* [waria] *in the land that was not your birth place and your custom is different, not too strict like me. Since Bali use patriarchy lineage of men similar with the Batak culture* [North Sumatra]*, the men must cremate the parents, continue to pray and so forth to his temple right. Most like there is an envy of Balinese waria to Javanese waria. I can't be as free as you*

even though I'm a 24-hour-long girl [they said]. *I have a limit on how I have to go with this, which I can avoid from getting out of it. In fact, there's my friend that's my senior that he's the only son himself, even he became waria. Automatically, the family generation is gone as they were the only one son of the family but became transgender.* (Waria, Non-Bali)

I think there is a difference in the culture and tradition. Javanese people are not patriarchy and not matriarchy, right? It doesn't require boys to stay in the house [with the parents]*, so it's free for the Javanese. Suppose they chooses their life they become waria; yes, that's your way of life, that's it. My family and friends are majority from Java.* (Waria, Non-Bali)

The difference is crueller in Sumatra than in Bali.… I think, yes, that I feel so. (Waria, Non-Bali)

Yes, they [non-Bali waria] *freely express himself. Since their family is far away there, they do know what they are doing here* [in Bali]. *If we're here, there's family, we are still afraid. Wanting to do this afraid, to do that fear. Shame on the neighbours. For the Javanese* [MSM or waria] *they are not* [afraid]. (Waria, Bali)

6.1.3.3 Working environment

MSM and waria participants also explained about their *job and working condition experiences,* especially in relation to the COVID-19 pandemic situation. Most waria participants who work as sex workers discussed receiving less income during the pandemic. This was because their client base was no longer coming to Bali or could no longer afford their services. For example, their usual clients, such as truck drivers and travel guides, had also lost their jobs, so were unable to pay for luxuries ("snacks") such as the services of waria. When foreigners were no longer able to visit Bali, due to lockdowns, reduced income forced some waria to go back to their villages outside Bali.

[Job] *before the corona was pretty good, pretty good. Ee, in 1 month, I can get more than 10 clients.… Now, not sure, how many ya, maybe 5 to 6 people, very quiet.* (Waria, Bali)

Yes, no 1 is real less income. It's not like it used to be, many clients lost their jobs, the ones who used to buy waria services, such as truck driver, travel guide people, etc. Nowadays, many of them are jobless, so they won't use us anymore. During this pandemic, there are many people who are homeless and have decreased income. Automatically, they cannot have us for their "snack" anymore. So, the waria income is decreasing. (Waria, Non-Bali)

Yes, it used to a lot [clients] *before Covid. I was senior, just before I joined the NGO. I was working on the street to get clients non-stop every night. I was very busy before Covid; sometimes a night can be 15 clients, but back again to the line of fortune each person. When got 15 clients of course can pay bills, rental etc. Sometimes 1 costumer use 2 condoms, but sometimes no clients as well. Sometimes 10 clients in a night and make my mouth very hurt. Depends on each other's fortune.* (Waria, Non-Bali)

...but during the lockdown, it was my experience that real last year fasting months that last year's lockdown was the one that after Nyepi day [Hindu Bali new year]. *More waria went on the street to get clients. Because their income was drop more than 50%. They did not afraid with COVID, but they afraid that they could not get money for food and pay the debt.* (Waria, Non-Bali)

It was ok before Covid. If after this Covid a day, it's very quiet. (Waria, Non-Bali)

[Covid-19 pandemic] *Influenced everybody. For waria, most of them choose to go back to their hometown because this never ending Covid. So, they cannot earn money here in Bali; no foreigners, so they choose to go back to their villages.* (Waria, Non-Bali)

A waria participant explained they sometimes got clients from online Apps; however, it was also difficult as the pandemic restriction rules did not allow visitors to rentals after 10pm.

During this pandemic, we get the client from online, rarely a face to face. Some rental owners ask the tenants not to welcoming guests after 10 pm clock during the lockdown. That's why a lot of my friends need to move house to be able to bring their client 24 hours. Certain villages also conducted routine patrol. These things added stress to waria community. (Waria, Non-Bali)

Waria sex workers tend to work far from where they live so the neighbours do not know they are sex workers and so they will not disturb the neighbours. However, some heads of villages request that they work in their area of living. Waria may also work outside their living areas due to customers' preferences for hired rooms over visiting their homes.

I'll look for costumer in the Denpasar area in Mahendradata or in Malboro Street, even though I live in Kuta. So opposite, even though I live a long way away. I'd rather live wildly out of my neighbourhood.... There were some heads of villages, some traditional polices [pecalang]*, who knew about my job, asked me to work at Kuta. But I do not dare to work in*

Kuta, since I live in the area myself. So, I will not wild in Kuta areas. (Waria, Non-Bali)

I got clients outside. I invited the client/guests in the boarding house next to the place I work so, so no neighbour where I live complained.…and the guests did not want to come to my rental. So, what to do? Better to have 50 thousand rupiahs then nothing right? (Waria, Non-Bali)

Most waria participants changed their jobs due to the pandemic. Waria participants explained how they have changed jobs several times. One was a sex worker, but then became an outreach worker for an NGO. They pointed out how difficult it was as a sex worker to manage their money as most waria need to maintain their physical beauty to impress clients by buying cosmetics and clothes.

Actually, from this waria life, we have got greater than regular basic salary. But most of waria, they cannot manage the money and the consumerism style because of afraid of losing competitive with colleagues.… I myself used to be like that when I was focused on living on the road. Now, I'm tied up in NGOs every night out. Most only 2 times a week or 3 times a week just to come out. I am an outreach worker who provide condoms and listen to the aspirations of friends in the community. If there's an incident where a friend fights, then I'm down. I used to be on the street every night, even though thunderstorms, except one holy night for Muslim. (Waria, Non-Bali)

6.1.4 Mental health problems and happiness experiences

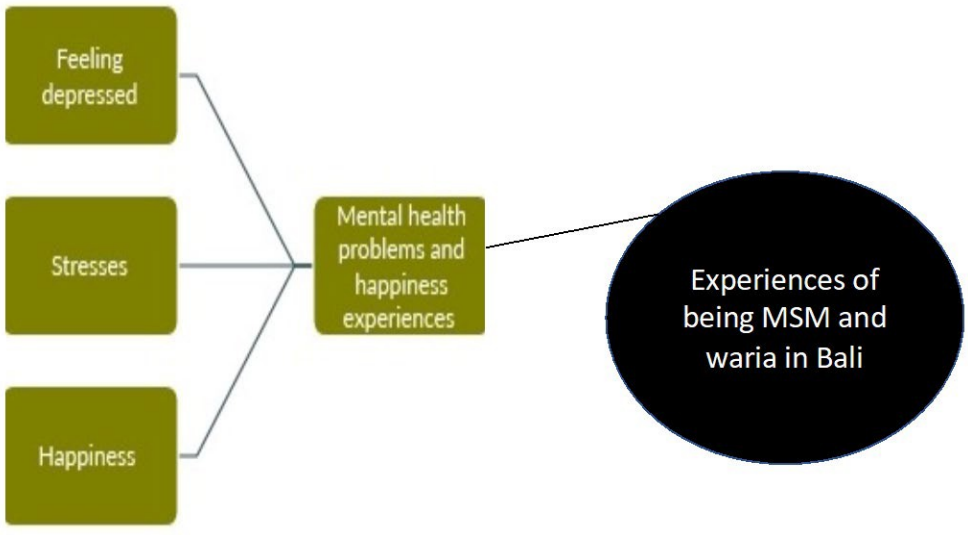

Figure 6.5 Mental health problems and happiness experiences of MSM/waria living in Bali

MSM and waria identified mental health problems due to some key stressors associated with their gender and sexual identities, some of which were heightened due to the pandemic. Waria discussed physical issues, such as the aging process and using hormone medication as stressors. In addition, as a result of the pandemic, waria discussed a reduction in work, resulting in a loss of income as well as a loss of freedom. MSM discussed managing relationships and marriages to be a stressor. In addition, MSM who were studying indicated the move to online learning as a result of the pandemic was stressful. In contrast, waria expressed feeling happy when they had a regular income and were accepted by their family. MSM did not mention specifically what made them happy but focused on what could happen in the future if they did not get married. They worried about who was going to look after them when they get old.

> *At the other side of job, earnings, there are more rules every time in Bali right now. I mean, they restrained us, so we become more stress, I meant not as free as before in Bali and not as busy as before as well.* (Waria, Non-Bali)

> *Yes, because if they are young they rarely stress anyway because it is still easy to make money. If they are already old, is a bit stressed now. No wife doesn't have kids. So that's in the mind.* (Waria, Bali)

> *Experiencing stress may be for waria, right? Actually, the work is quite exceeding the salary of civil servants class 3, if we collect every night. 166ut if you can't manage it, so to cover the problem, one takes the problem the other, so it's vicious cycle. Plus, has not been accepted with the core family. Not if they cannot leave to the environment traditional events which added the stress.* (Waria, Non-Bali)

6.1.4.1 Feeling depressed

In addition to the lack of business and boredom, some waria discussed additional stress associated with taking regular hormonal pills to maintain their "lady" look and feel. These waria tended to have mood swings, changing feelings (angry or sad), and feeling tired due to the side-effects of taking over-the-counter hormone pills without any prescription. Being asked by others when to get married also made waria feel depressed. Some waria linked this discussion to *feelings of depression*:

If waria compared to MSM, waria tend to more stress since they are more sensitive; they mentally are women. So, like a woman in her period, changing moods, sometimes cries by herself, sometimes very sad; sometimes angry by herself. I think like the side effect of hormone that they took before-hand. (Waria, Non-Bali)

I feel stress if I don't have anything to do. I mean bored since do not have any business. Or if my body is very tired, then the mood swing, I cry all of a sudden, remember my parent, I also cry all of a sudden. Or when I see something mellow [sad] *I am also crying. That's me.* (Waria, Non-Bali)

The correct one is the hormone that comes from Thailand which more expensive. Why they use the regular contraceptive drugs since it's cheaper, but they don't understand the side effects. Therefore, it impacted the mind, the psychologic part, so become more sensitive, easy to be agitated, emotional, and easy to cry like that. A lot of them are like that, ya, I heard from friends. Suddenly they want to cry, then depressed, and only want to be with themselves [be alone]. (Waria, Non-Bali)

If other people asked about when to get married, usually I do not care anymore, as every time I remember, it makes me feel so depressed. (Waria, Non-Bali)

6.1.4.2 Stresses

Student MSM participants discussed stressors during the early days of the pandemic associated with the change of learning from face to face to online modes. Some found this difficult as it consequently impacted their time to socialize with friends. One waria student also discussed financial issues as a stressor, finding it difficult to purchase university books as a result of reduced income during the pandemic.

… Because of learning. It's supposed to be the student's main job of studying. But he's even an MSM, so it's a burden too, that's the burden of his mind. So stressed. Right at the beginning of the beginning of Covid, it's just stress. But it is common now. It means that it's common to socialize on campus, so now online all that right, it's like stress so do not meet friends. It was right at the beginning only anyway. If now it's feel normal only. It's been a year too. (MSM, Bali)

Since the clients nowadays are very limited, a little bit stress when I need to pay and buy books at the Uni, so sometimes I cannot find the answer and way out, make me drop. (Waria, Non-Bali)

MSM also discussed stressors and the links to depression, with marriage and relationships impacting stressors. For example, some MSM participants felt those who were married were likely to experience stress as they needed to split time

between their wife and boyfriend. In addition, this had financial implications as they may be supporting their family and boyfriend.

> *This because he needs to split the time between his wife and his boyfriend(s). So, he need to arrange everything so his wife never find out about his relationship with men. Sometimes also, when the wife or the boyfriend angry, it will make him stress. So, a lot of problem.* (MSM, Non-Bali)

> *If I think the married, he is more stressed because there must be many demands from his partner. It can't be this way.… Yes, if I think it's like this because of a lot of pressure from the couple.* (MSM, Non-Bali)

> *Yes, maybe if he's* [MSM] *married, maybe he's depressed or all sorts. If he doesn't marry, he's free.… The married one seems depressed because if it is married there must have been a relationship right. So, maybe there's pressure from his partner.* (MSM, Non-Bali)

6.1.4.3 Happiness

Happiness; *feeling happy* and *lack of happiness* was a subtheme within mental health problems. For waria, being accepted by family and having a regular job made them happy. However, other waria mentioned they were not happy, mostly due to financial issues and social changes during the pandemic. Workplace socialisation was valued, and this was lost during the pandemic. One MSM participant felt living a double life made him less happy due to the constraints imposed by marriage and the lack of freedom to live the life they wanted in comparison to being a single MSM.

> *Ya, so true, because my happiness is while I am working. Since this covid is so long, do not know when it will be ended, so one of my work place is closed down. Hmmm, and the other one was open a while, but now it's closed again. Since when I am working I tend to be happier; if I meet a lot of people, I got a lot of funny stories, that's the thing. It support me a lot when I am working. Now I am confused.* (Waria, Non-Bali)

> *Yes, because we are happy.… Waria has been accepted in what in the family and in the community it is enough. If I can find work every night, can get money, feel grateful, make me happy.… The important thing is accepted by the family. Well, in the community there is also nothing insulting. People also already know now how waria are.… People also already know there are waria in the neighbourhood; it is not strange anymore.* (Waria, Bali)

> *Yes,* [Covid] *really affect the happiness because of the income* [less income, less happy]. (Waria, Non-Bali)

Yes, obviously [COVID-19 pandemic] *makes less happy, hehe. Average people say so. How to change income. Yes, automatically cannot get a job.* (Waria, Non-Bali)

Yes, I think yes, they are [MSM who are married] *not happy. Yes, it's because of the partner. If the single is free, he wants to go where to meet friends. They are more free.* (MSM, Non-Bali)

6.1.5 Sexual life experiences

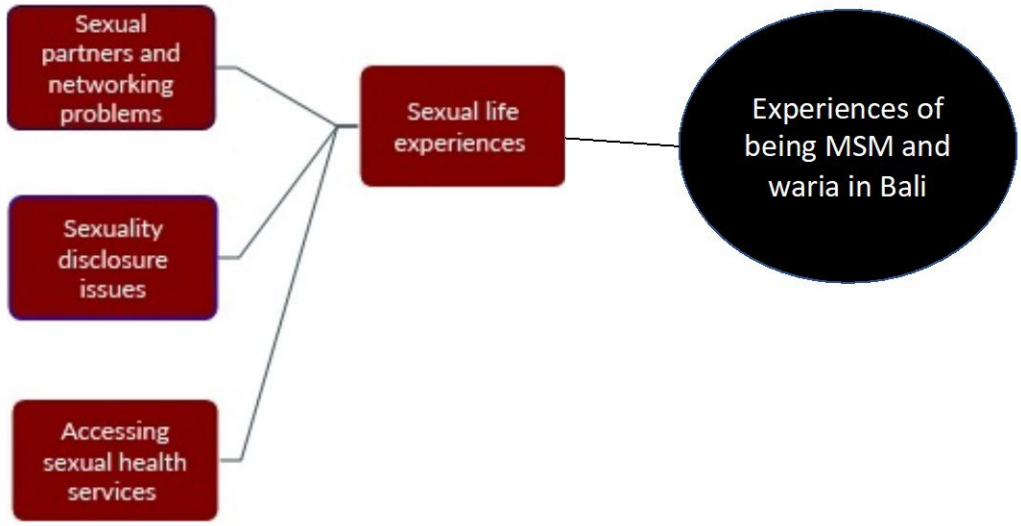

Figure 6.6 *Sexual life* experiences of MSM/waria living in Bali

Sexual life experiences included three sub-themes: *sexual partners and networking problems*, *sexuality disclosure concerns*, and *accessing sexual health services*.

6.1.5.1 Sexual partners and networking problems

Sexual partners and networking included discussion about different types of partners. Some participants have regular partners; they do not live together but are committed as a steady partner. Some MSM participants have casual partners every now and then, which they meet online or face to face. In addition to having regular and casual partners, waria participants explained they also have commercial sex partners as they work as sex workers or massage with “plus” (sexual intercourse).

I have partner, but no different, we don't live together…. My regular partner is a Balinese. (Waria, Non-Bali)

Yes, I have a regular partner. There is no schedule to meet. For example, if both of us busy, then usually we just take a walk, and talk each other, then go home, that's it. (MSM, Bali)

To get a partner, that was because I met someone in the neighbourhood. Others I met them online or met on the street, or get to know you at the discotheque at the bar. (MSM, Non-Bali)

I have also other partners that's for commercial to make money. But, during this Covid situation, not too sure; sometime a week only one, sometimes two. Sometime no partner in a month…. I put 200-thousand-rupiah [AU$20] *price, but they bargain to 100 thousand* [AU$10] *or 50 thousand rupiah* [AU$5], *that's the cheapest one...we did it in my rental place.* (Waria, Non-Bali)

Sometimes, I provided massage "plus plus", or without massage they asked for "plus plus" only…. Sometimes 5 people or 6 people in a month during Covid so very quiet. (Waria, Bali)

When choosing a sexual relationship (mostly for a regular partner), MSM tend to make careful considerations. For example, a participant stated he will only form a relationship with a partner who is a similar age. This prevents him from having a married partner as he thinks about his sister and her feelings if her husband had a boyfriend.

Yes, all my partners just same age only. Since who has a wife sometimes I think only poor thing so. Because I have a sister, I afraid later her husband is like that [like a man)]. *If he* [brother-in-law] *like that how would my sister feels.* (MSM, Non-Bali)

Most waria discussed having commercial partners and were not concerned about their commercial partners' status. However, they indicated they usually ask about the partners' marital status during the first conversation. Some of their commercial partners were married with children, which means they need to keep their sexual relationship with waria a secret. Some commercial partners also discussed their ethnicity/hometown. However, waria tended to not discriminate their commercial partners based on marital status and ethnicity.

Sometimes they told me, but sometimes they did not. But mostly already have partners [married]. (Waria, Non-Bali)

I asked many questions, [some] *already have a wife. They told me, "I've got kids." ... they were Balinese, Javanese.* (Waria, Bali)

Ee, majority they've married and have children…. Majority of clients were from Java; they just afraid about their reputation and they afraid somehow their friends know what were they doing on the bush with me. (Waria, Non-Bali)

The sexual networking amongst these communities during the pandemic was mainly through online modes. For example, one MSM participant stated he and his casual partner used mobile apps as this was safer than sharing their mobile number. In relation to sexual intercourse preferences, a married participant explained that he and most of his MSM friends enjoyed sexual intercourse more with a man than a woman. This was because men are more aggressive than women in bed, as explained by participant 2.

Many of them are singles and many who were marry as well. Most of them used mobile apps like Hornet or Gridr. They did not want to give their phone number or WhatsApp number, so their wife cannot find out. They only chat via the apps. The communication is only with the apps. (MSM, Non-Bali)

I like, I enjoyed the relationship more with the guy compared to the girl. But evenly so, I once asked for confirmation from friends, whether they enjoy having sex more with guy or girl. Most of my friends said more enjoy with the guy.… Most of the girls are more passive. They just stay still. But the guy can balance; for example, he kissed me and me too. More aggressive than girls. (MSM, Non-Bali)

6.1.5.2 Sexuality disclosure issues

Sexual disclosure issues focused on participants revealing their MSM/waria status to family and friends. Participants discussed differing experiences in relation to disclosing their sexual identities and gender. Some participants thought, by having certain "girly" behaviours from a young age, their parents were aware of their gender and sexual identities. A waria participant had disclosed their status and was accepted by their family; however, they cannot dress like a woman when visiting their hometown. It is common in Indonesia society that a bisexual husband never discloses their status to their wife. This is highlighted by participant 6 who had never discussed their sexuality status with their wife.

> *Maybe it could be different right. Each family is different, so there's an open one with the child. The ones whose children are open with their parents.* (MSM, Bali)

> *The parents may be a little bit more already know, yes, their son's behaviour like this. But maybe parents didn't accept that…. Ooh, if I've seen some already there are comfortable family've accepted them and some also no one accepted them in the family also like that.* (Waria, Bali)

> *In my hometown/family I am already truly free. The siblings and the parents already knew and had accepted. I've confessed to the family that I'm not going to get married de facto, and de jure, that's the way it is. The family has accepted. But the family always says because we are children from a Muslim family, we should do good things. Keep the family's good name. That's what's not taking care of. I came home as much as I could and aa, a man, don't look like a female.* (Waria, Non-Bali)

> *My wife does not know my nature* [as MSM], *she never demanded.* (MSM, Non-Bali)

Single participants who did not disclose their sexual identities tended to be pressured by family to get married. This was expressed by two Bali born waria participants.

> [Family] *encouraged and asked when you going to marry, when marry when you are going to marry, so. I still answer with "maybe later, later" … like this still difficult like that.* (Waria, Bali)

> *Yes, there is input from parents. They told me to get married quickly. Until when you want to continue, so until when you want to be alone like this? But I said I think after the job is established, then I will get married. I'm talking like that.* (Waria, Bali)

6.1.5.3 Accessing sexual health services

Participants expressed differing experiences *around accessing sexual health services,* especially around STIs and HIV in Bali. Most MSM participants routinely test for HIV as recommended (every 3 months). One participant discussed taking the test to ensure he does not spread it to others. Most waria participants also did the routine test as suggested by the outreach workers. One of them, who is an outreach worker, reminds her clients to do HIV testing or continue their antiretroviral therapy (ART) when they are HIV positive.

> *At time with an NGO's staff, I ever what expressed that I was afraid of getting HIV disease, so he ask why don't you test it. But if I do the test it's ashamed to be caught by people. This what is afraid of the spread and also what the cost is. Also I do not know what expensive or not so. He* [NGO's staff] *gave a solution if I want to test it is free. So, what ya it finally introduced to this organisation in Teuku Umar Street, just like the HIV organization. They gave a lot information like this way. I continued to participate often in seminars in Lumintang.* (MSM, Non-Bali)

> *My HIV test is routine, every 3 months.* (MSM, Non-Bali)

> *He he, 3 months and still routine.* (MSM, Bali, 20 yo) (participant 4)

.

> *I do HIV test routinely. Next month I will take the test again.* (Waria, Non-Bali)

> *Went with an NGOs staff, eee 6 months* [I did HIV test]. (Waria, Bali)

> *I was with client. He removed the condom. I asked, why did you remove the condom? He responded, it removed by itself. I said, so what if you get STIs and transmit it to me, I asked, or if I'm not healthy transmit it to you, so let's we do the test together? So, I got a referral, too. So, he also took the HIV test afterward.* (Waria, Non-Bali)

> *As an outreach worker, most of friends and clients, 34 of waria came with me for the test. Other places, like Ubung and renon, who does not have any "leader," sometimes I educate them on how to use condoms. I also asked them to come to my rental, and then I explained about it* [condom use]. *Some of them shared with me their status and I supplied condom for them. The HIV test should do every 3 months. So that's before 3 months I should have reminded H-1 that week. This month it's time to test, so, let's go sisters, brothers, ladies, etc. So, I make sure that they are going to take the tests.* (Waria, Non-Bali)

> *Sometimes they did not need the referral; for example, those who already taking ARV, they told me the status, so they were safe. I just reminding them to take the ARV regularly and take the STIs test, take vitamin.… Reminding them to use condoms always, since they have already HIV positive so they will not transmit it to others. Reminding to adhere to ART. They trusted me.* (Waria, Non-Bali)

However, two MSM participants discussed that some MSM were fearful about testing their HIV status. This was mainly associated with their hidden identity; they were afraid family and friends will know about their HIV status and their sexual preference. However, these MSM are aware of prevention strategies, like using a condom. Some MSM, who do not access health care services or the NGOs, use condoms provided by friends.

> *Most people like this he wants to avoid from this HIV. Most people are invited to HIV tests like most are afraid, so avoid to do so. Meaning they were afraid for example if people know about the info* [that they have HIV]. *Second, they were afraid if the friends and family will know about their HIV statuses. So, that's, in my opinion, like that anyway. When I did HIV voluntary counselling and testing (VCT), I usually get condoms that I also gave some to my friends, including those in Java.* (MSM, Non-Bali)

> *My friends always asked for it* [condom] *a lot. Never want to do the test so. The problem is that he's afraid of it. First, he was afraid of spreading of it. Second, he was afraid that people know he was a fan of the same sex.* (MSM, Non-Bali)

6.2 Enablers of safer sexual behaviours

Influences of safer sexual behaviours included: *perceived susceptibility to STIs/HIV*, the ability to *negotiate with their sexual partner*, *condom availability and accessibility*, and *awareness of the impact of unsafe sexual behaviours for future health* (Figure 6.7).

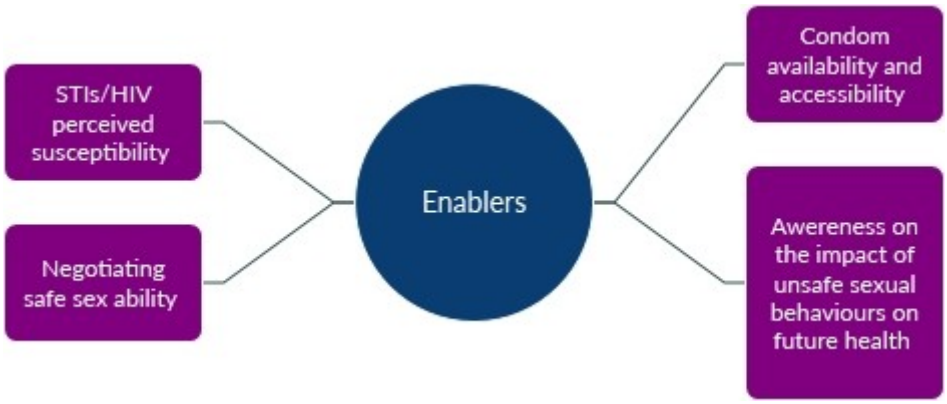

Figure 6.7 Mind map of enablers of safer sexual behaviours amongst MSM and waria in Bali (derived and produced through NVivo software)

6.2.1.1 STIs/HIV perceived susceptibility

Despite only being specifically mentioned by two respondents, *perceived STI and HIV susceptibility* had influenced MSM and waria to participate in safer sexual behaviour. For example, a waria participant mentioned they always used a condom during sexual intercourse regardless of their partnership status (regular or commercial). A HIV positive MSM stated he used condoms to protect his partners from HIV infection.

> *For me, I do not differentiate between my commercial and regular partners. I always use protection. But maybe some friends who feel that because of their regular partners so they do not use condom. But maybe some also thinking need to always use condom because of knowing the danger of HIV, so need to consider our own health. So, to be safe, always use protection, stay safe right?* (Waria, Non-Bali)

> *Just wanted to remain safe* [use condom] *is also because now also already know like I've HIV also so not willing to spread the virus to others too, spread what I had experienced to others.* (MSM, Non-Bali)

6.2.1.2 Negotiating safe sex ability

For those who work as sex workers, their *ability to negotiate condom use* to protect their and their partners'/clients' health was also essential. This practice was expressed by nearly all waria participants. They chose to refuse or refrain from having sex if the partner did not want to use a condom. Some also tried to explain to the clients how important it is to use a condom to protect their health.

> *There are many who refuse, but we forced them, and they want* [to use it] *now, he he. These days customers more cares about his health, usually they asked to use condoms.* (Waria, Bali)

> *Ee, if he did not want, then I refused.* (Waria, Bali)

> *Yes, I always reject if the guy do not want to use condoms No need to use condoms, eh because both equally healthy right. It's not that good. I said, how do you know that I am healthy, try to stigmatise myself. If in case I'm not healthy later I can transmit the disease to you. Oh yes, then, usually he want to use condom after I told him that.* (Waria, Non-Bali)

> *Yes, for example, if there are guests/clients who do not want to use condoms directly cancel.* (Waria, Non-Bali)

6.2.1.3 Condom availability and accessibility

Condom availability and accessibility was another enabler to practising safer sexual behaviours. Condoms are largely available at NGOs. Commonly, outreach workers of the NGOs are responsible for distribution. Half of the participants explained that they get condoms mostly from NGOs during outreach activities in the fields, or from clinics after doing regular HIV testing. Condoms were also readily available in minimarkets or chemists.

> *Usually, if I run out condom that I got from HIV test, it cannot be usually. But if 've run out ya've bought again at the minimarket.* (MSM, Bali)

> *I ask it* [condom] *from sis Melati* [the NGO's staff]. (Waria, Bali)

> *Condom, condom yes, sometimes buy them at the Circle K in the minimarket they sale condom there.* (MSM, Non-Bali)

> *Ee from … I often ask* [condoms] *from the NGOs staffs.* (Waria, Non-Bali)

Not [difficult]. *Here is easy if buy condoms, so in Bali is easy no questions. (MSM, Non-Bali)*

No sis, the same if we buy in Indomaret or in Alfamart [minimarkets], *just the same, they* [the check-out person] *have no question.* (Waria, Non-Bali)

6.2.1.4 Awareness of the impact of unsafe sexual behaviours for future health

Awareness of the impact of unsafe sexual behaviours by not using a condom was also expressed by participants. This is especially so for those who work as sex workers as they were more concerned about health than money. Therefore, they chose to use condoms.

Yes, it's mandatory [the condom]. *Because we're selling ourselves. Our minds prioritize health the most. Meaning whatever the penis size, whatever handsome the man, if they do not use condoms, even they pay me a lot, I will not want to. Since we did not play (have sex) with 1 or 2 people a night though. If we are sick, automatically, we cannot work, cannot think the future.* (Waria, Non-Bali)

Yes. Straight away, I say like this, even though you pay me how many million so when the money finished, in the future I do not know what the risk that I need to pay. (Waria, Non-Bali)

6.3 Barriers of safer sexual behaviours

Participants also discussed barriers to safer sexual behaviours. Barriers included *condom price and availability*, *stigma around condoms*, *sexual pleasure and preferences*, and the *use of alcohol* (see Figure 6.8).

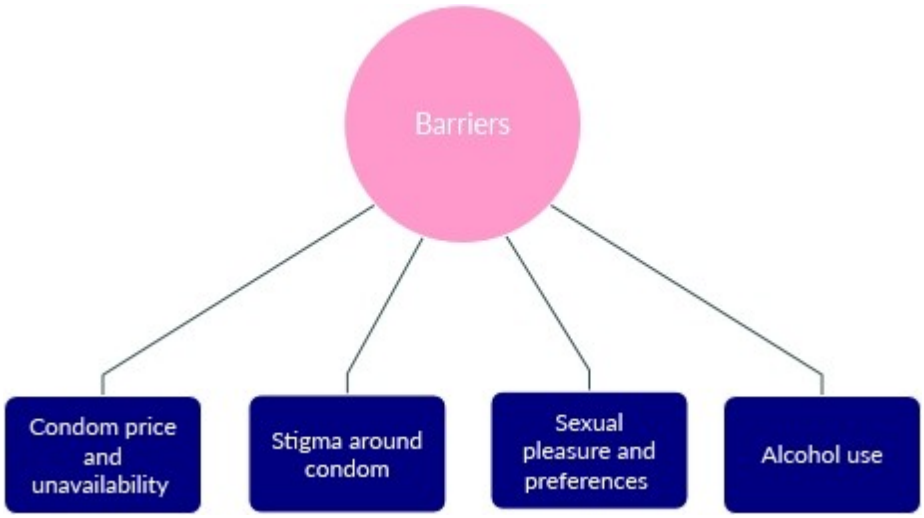

Figure 6.8 Mind map of barriers of safer sexual behaviours amongst MSM and waria in Bali

6.3.1.1 Condom price and availability

While *condom availability and affordability* was a theme that emerged as an enabler of safer sexual behaviours, this was also considered by some participants to be a barrier. For example, some MSM discussed unplanned meetings with sexual partners where they did not have a condom available. One participant discussed being too shy to purchase a condom as he had only recently moved to Bali and was worried about what people would say. During the pandemic, participants discussed reduced income, which impacted their ability to afford extras like condoms.

> *Sometimes there's no condom anyway. Just do it.* (MSM, Non-Bali)

> *Yes no. Because it's like last time when I just moved here, very shy to buy condoms.* (MSM, Non-Bali)

> [Condoms] *are quite expensive, hehe, because our income is reduced* [during Covid]. (MSM, Non-Bali)

6.3.1.2 Stigma around condoms

Participants also reflected on the *stigma associated with purchasing condoms*. While some participants discussed obtaining their condoms from NGOs, the other option was to avoid purchase during business hours, hence they chose to buy their condoms late at night or early in the morning when there were few other customers.

> *Yes, not so good anyway. Usually, if I buy* [condom] *it is usually night at 11 o'clock or 12 o'clock so. Keep looking at the cashier (check-out) first is there a guy or girl. For example, the cashier is a guy, directly buy* [the condom]*.... Yes, afraid to be seen only, fear seen by people. Afraid that guy thinks it's weird* [to buy condom]. (MSM, Bali)

6.3.1.3 Sexual pleasure and preferences

Another barrier of safer sexual behaviour was the feeling (*sexual pleasure*) when having sex without condom which reflects *preferences.*

> *But it depends. because some people do not want to use condoms. Because it's different if you're using it or not. They say it feels better if not use condom.* (MSM, Non-Bali)

6.3.1.4 Alcohol use

The use of alcohol during sexual activity also inhibited condom use. Participant 6 described being drunk and not using a condom.

> *Ee, yes, sometimes. But if I was not aware so did not use any hehe. If in a state of drunk ya did not used any* [condom]. (MSM, Non-Bali)

6.4 Discussion on experiences of being MSM/waria in Bali, enablers, and barriers of safer sexual behaviours

MSM and waria in Bali discussed many "unpleasant" experiences. Harassment and bullying in this study were mostly experienced by waria. The harassment came from different sources: from random people on the street to school friends in the form of bullying. Findings of this study are similar to findings of a Pakistani study where feminised boys face ridicule or ignorance and total silence from the community (de Lind van Wijngaarden, Schunter et al. 2013).

Similar to this study, which found waria experienced social stigma and discrimination, Pakistani feminised boys were also defined by stigma and discrimination (de Lind van Wijngaarden, Schunter et al. 2013). Moreover, transgender women who work as sex workers in a study conducted in Vietnam expressed being rejected and unlovable, as well as experiencing double layers of stigma (as a transgender woman and sex worker) (Huber, Ferris France et al. 2019). However, for waria in Bali, family acceptance reduced the likelihood of stigma and discrimination, in contrast to Pakistan where experiences of stigma meant feminised boys were driven out of their families and schools (de Lind van Wijngaarden, Schunter et al. 2013).

Participants also experienced self-stigma and blaming themselves, especially when they were first aware of their gender and sexual identities. Feelings of guilt were mostly associated with praying (feeling guilty about defying God's will) or while they were alone (feeling guilty and bringing shame to the family/parents). It is believed that self-stigma not only can impact mental health, but also deter individuals from seeking essential health services as they are fearful of disclosing their sexuality status and of being discriminated against by service providers (Mak and Cheung 2010). This can lead to unsafe sexual practices and increase STIs/HIV transmission amongst this community.

Being far from places where they were born made participants in this study feel a sense of 'freedom' compared to those who live in the area of their birth. Some participants felt that they were bringing shame to their family if their neighbours and the local community knew about their sexual preferences. To migrate and live far from family enabled them to preserve their family's name and avoid ridicule from

neighbours and villagers. A study in China also revealed a similar pattern, whereby MSM were more likely to migrate due to widespread stigma and discrimination (Mi, Ma et al. 2016). Migration is also a way to avoid being forced to marry. Marriage due to cultural expectation, homosexuality social stigma, and a lack of private spaces for sexual exploration reinforced some South Asian males' migration decisions (Smith 2012).

Having particular friendships and networking with different communities and NGOs were other ways to be accepted. Community engagement has been positively associated with physical and psychological health among marginalised populations (Cheng, Cai et al. 2016). Moreover, based on a study conducted among MSM in China, community engagement was significantly associated with lower likelihood of unprotected anal intercourse (Zhu, Liu et al. 2018).

Other experiences explained by participants in this study were around job and mental health problems. During the COVID-19 pandemic situation, most participants changed their area of employment. Financial difficulties meant some participants experienced distress, depression and unhappiness. For those who were married, reduced income exacerbated these mental health problems. Financial stress and lack of basic supplies caused by job losses due to COVID-19 pandemic were similarly reported by HIV positive MSM in a Thai study (Nitpolprasert, Anand et al. 2022).

Disclosing their sexual identity to family and friends remains difficult due to potential sacrifices. Being forced to be married was the other issue to be considered by single MSM and waria. Having a double life also influenced married participants' sexual life, as they preferred to have sex with men compared to their wives. A study conducted in Bhutan revealed that down-low (bisexual MSM) is not uncommon, even though it is hidden in the society (Singh, Sharma et al. 2015). Living a dual life because of pressure to marry may also drive a bigger proportion of MSM to have female partners, which may enhance HIV transmission (Singh, Sharma et al. 2015), especially when condoms are not used.

Condom use has been established as a method to prevent STIs and HIV transmission during high-risk sexual practices. The study found several enablers to safer sexual behaviours amongst MSM and waria living in Bali. Participants perceived a susceptibility to STIs/HIV and this increased awareness of the benefits of condom use. A study in Jogjakarta, Indonesia, similarly found most study participants believed condom use was one way to avoid STIs (Indrawati, Demartoto et al. 2018). A study in Peru found male sex workers, or clients of male sex workers, would be more likely to use condoms due to the perceived risk of STIs/HIV (Castillo, Konda et al. 2015). The ability to negotiate condom use was an important skill explained by participants, especially for MSM, to protect their, and their clients' health. A study in the US highlighted lowered condom negotiation amongst gay and bisexual men was associated with condom-less anal intercourse and HIV infection (Stephenson, Freeland et al. 2016).

Condom availability and affordability also enhanced use of condoms. Condoms are widely available in private HIV/STIs clinics which hold less stigma compared to public health services. Condoms also have been provided by NGO staff during outreach activities in Bali. Those who do not access or reach NGOs and clinics can also purchase condoms from minimarkets. Participants' refusal to have sex when they did not have a condom available was one construct of self-efficacy on condom initiation and negotiation in a study in the Philippines amongst MSM and transgender women (Restar, Ogunbajo et al. 2022).

Another enabler of safer sexual practice in this study was putting their health above money, which was expressed by male sex worker participants who ensured condoms were used during sexual intercourse. Some participants mentioned refusing condom-less sexual intercourse, even though clients offered more money because they were not willing to put themselves at a high risk of contracting STIs/HIV, which may then impede their ability to work. A Dominican study amongst MSM and transgender women found HIV infection resulted in limited work opportunities and loss of jobs (Barrington, Acevedo et al. 2017).

Barriers to condom use were also identified by male sex workers in Vietnam, which include access barriers (e.g., condom availability) and usage barriers (e.g., reduced sexual sensation) (Mimiaga, Reisner et al. 2013). Similarly, an Indian study found the most common reasons for condom-less sexual intercourse with partners was the lack of availability and the feeling that condoms reduce sexual pleasure (Kumta,

Lurie et al. 2010). Alcohol and other drug use, along with violence and victimisation, also increased HIV risk behaviours (inconsistent condom use) amongst MSM (Chakrapani, Lakshmi et al. 2019). A study of Asian MSM found having sex under the influence of alcohol was associated with unprotected anal sex (Yang, Guadamuz et al. 2016). Some participants in this study mentioned barriers to practising safer sex behaviours were related to sexual pleasure and preferences when they were under the influence of alcohol.

6.5 Summary of Phase 4 results

Besides good experiences, MSM and waria living in Bali also experienced unpleasant situations. Bullying was faced by MSM and waria since they were in elementary school to college, while physical harassment mostly occurred while waria work as sex workers on the street. Social, self-stigma, and discrimination were experienced by almost all participants in some stages of their life. For MSM and waria, *daily life* was complex and they needed to fulfil religion, culture, and family expectations as a "man' in the family and society. Working conditions during the pandemic were worsening, especially for those who work as sex workers as only a few clients can afford to buy their services. *Daily life* and working environment situations were also triggers to participants feeling depressed, distressed, and reducing their happiness. Finally, the *sexual life* of MSM and waria living in Bali was also complicated by the difficulty of disclosing their sexual identity/preferences to their family/friends.

In relation to reducing high risk behaviours, MSM and waria participants in this study identified enablers and barriers that influenced them to practise safer sexual behaviours. Some enablers included perception of STIs/HIV susceptibility, ability to negotiate safer sexual practices, availability and affordability of condoms, and awareness of the impact of unsafe sexual behaviour on their health.

While the availability and affordability of condoms was found to be an enabler, several participants mentioned the opposite. Lack of availability and condom cost were also mentioned as barriers that emerged and hindered participants to practise safer sexual behaviours. Other barriers included persistent stigma around condoms, sexual pleasure and the preferences not to use condoms. The influences of alcohol during sexual intercourse influenced high-risk sexual behaviours.

Furthermore, during the COVID-19 pandemic, participants expressed concern about the price of condoms, especially as their income reduced. A study in Los Angeles among prisoners found the lack of or limitations of condom distribution may contribute to inconsistent condom use (Harawa, Sweat et al. 2010). A Vietnamese study found transgender sex workers avoid going to health care centres to obtain treatment and condoms due to a fear of stigmatisation (Huber, Ferris France et al. 2019). Similarly, participants in this study were reluctant to go to public health services due to stigma and condoms usually being unavailable. Most participants in this study preferred to visit an NGO clinic.

Chapter 7 Dissemination (Phase 5), Conclusion, and Recommendations

This chapter describes the dissemination of the study findings to stakeholders. A summary of the key findings is also provided. In addition, the strengths and limitations of the study are presented. Lastly, recommendations for health policy, practice and future research are drawn.

7.1 Dissemination to related stakeholders

As restrictions associated with the global COVID-19 pandemic continued throughout the final phases of this thesis completion, dissemination of findings was mostly conducted online. In addition, a summary of the research findings and recommendations was provided to the research partners and key stakeholders. The summary was translated into Bahasa Indonesia (see Appendix F). Dissemination continued when the researcher returns to Bali and will include face-to-face meetings with the research partners and key stakeholders.

7.2 The main findings

Findings of this thesis are discussed in detail in Chapter 5 and Chapter 6. This chapter summarises the main findings for the wider public health context based on the research protocol.

7.2.1 Objective one

Objective 1. Explore factors that influence sexual health attitudes and behaviour among MSM and waria in Bali.

Factors influencing sexual health attitudes were explored by conducting analysis on condom use attitudes and socio-ecological determinants. These findings have been presented in a paper submitted to the *Journal of Homosexuality* (see Chapter 5.2). Being non-Hindu and reporting higher levels of stigma were associated with less positive condom use attitudes, while higher condom use knowledge, and unsure about the safety of the environment for being MSM/waria in Bali were associated with more positive condom use attitudes among MSM in this study. A higher stigma score was associated with less positive condom attitudes, and those who were “unsure” if it was safe to live in Bali reported more positive condom use attitudes. So, it can be recommended that positive environment can lead to safer sexual behaviour.

Associations between condom use behaviours, socio-ecological factors and condom use attitudes were explored. The qualitative data gathered from in-depth interviews with ten MSM and waria participants support the quantitative findings. These findings are described in a paper submitted to the *Journal of Sex Research* (see Chapter 5.3). The findings show most MSM and waria participants were categorised as medium risk when considering condom use behaviour categories. Condom use behaviours amongst MSM were influenced by condom use attitudes; STIs experiences; marital status; occupational status; number of regular, casual, and commercial sex partners; and discrimination experiences. Amongst waria participants, condom use behaviours scores were associated with HIV and marital status, and number of regular, casual, and commercial sex partners.

7.2.2 Objective two

Objective 2. Identify enablers and barriers that influence safer sex behaviours among MSM and waria in Bali. Enablers and barriers of safer sex behaviours were presented in Chapter six (6.2 and 6.3).

Enablers and barriers of safer sexual behaviours were explored by in-depth interviews with ten MSM and waria living in Bali. Participants were purposively sampled by ten research partners. Perceived susceptibility of STIs/HIV, the ability to negotiate condom use with a sexual partner, availability and accessibility of condom, and awareness of the impact of unsafe sexual behaviours for future health were some enablers to safer sexual behaviours.

Themes that hindered MSM and waria in this study to practice safer sexual behaviours included unavailability and cost of condoms, stigma around condoms, sexual pleasure and preferences, and the use of alcohol.

7.2.3 Objective three

Objective 3. Develop a social model that conceptualises the sexual health attitudes and behaviour among MSM and waria in Bali in detail.

Condom use attitudes and behaviours were two indicators of sexual health attitudes and behaviours in this study. Determinants of attitudes and behaviours are discussed in Chapter 5 (5.2 and 5.3) of this thesis. A conceptual social model describing influences of condom use attitudes and behaviours was developed and is described in detail in Chapter 5 (5.3).

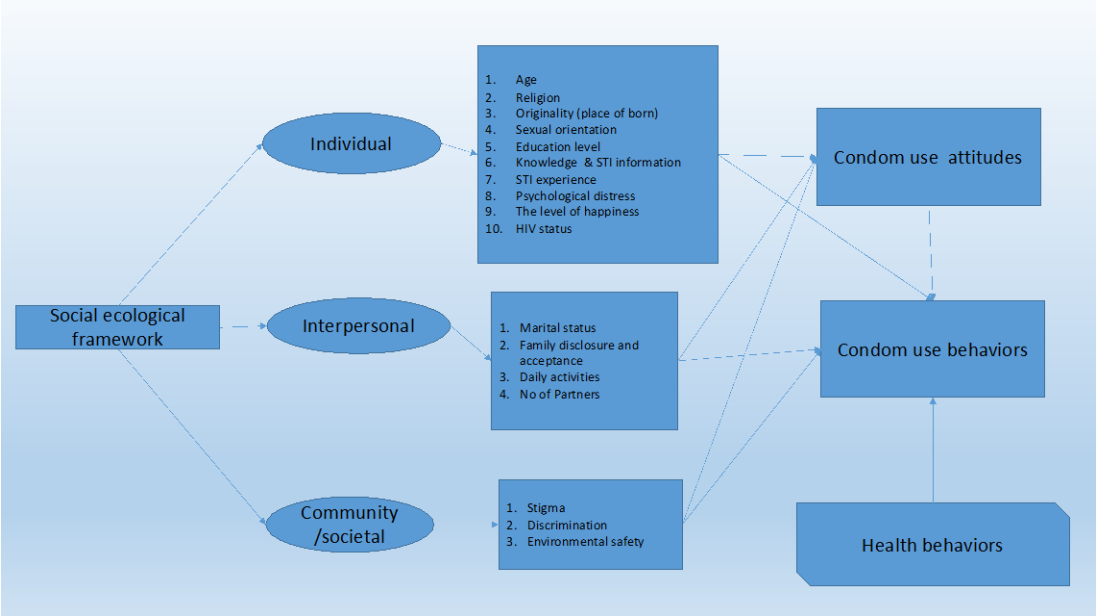

Figure 7.1 Conceptualised social model of condom use attitudes and behaviours amongst MSM and waria in Bali

The model (Figure 7.1) highlights the socio-ecological factors (individual, interpersonal, and community level) influencing condom use attitudes and, ultimately, condom use behaviours, followed by analysing the relationship between socio-ecological factors, condom use attitudes, and condom use behaviours (Chapter 5 (5.3)).

7.2.4 Objective four

Objective 4. Explore experiences of MSM and waria in Bali including social-cultural aspects, stigma, discrimination, and mental health (psychological distress and happiness).

Experiences of MSM and waria living in Bali were presented in Chapter 5 and included key topics: stigma and discrimination (5.1) and psychological distress and happiness (5.4). Chapter 6 (6.1) also discussed additional findings about social-cultural experiences while living in Bali. More than 50% of MSM and waria reported high level of stigma. Discrimination was reported by 35.5% of MSM and 72.4% of waria.

Family rejection or no family awareness of MSM status equated to higher levels of stigma compared to those for whom their family accepted their MSM status. MSM who were not single were twice as likely to experience discrimination compared to single participants. Non-Hindu MSM were nearly three times as likely to experience discrimination compared to Hindu participants. Homosexual and bisexual waria reported lower odds of experiencing stigma compared to heterosexual waria. Waria who were studying were less likely to experience discrimination compared to those who reported regular employment jobs.

The majority of participants reported moderate to very high psychological distress during the COVID-19 pandemic. Being a student, reporting higher levels of stigma, ever having experienced discrimination, feel better prior to the COVID-19 pandemic, and feeling less happy than the average person were factors associated with higher psychological distress. Being homosexual was associated with lower psychological distress compared to those identified themselves as heterosexual. Those who considered themselves to be less happy than the average person and live with a partner were more likely to report moderate to very high psychological distress.

Other social-cultural experiences amongst these communities while living in Bali include:

1. bullying and physical harassment;
2. social, self-stigma, and discrimination;
3. difficulty in fulfilling religion,
4. culture, and family expectation;
5. issues in working conditions;
6. problems in daily life which reduce happiness and increase depression and distress; and
7. complicated sexual life in addition to difficulty in disclosing their sexual identity/preferences to their family/friends.

7.3 Strengths and limitations

Throughout the data collection and analyses of this thesis, efforts were made to enhance strengths and decrease limitations of the research. Strengths and limitations specific to each aspect of the study have been described in individual papers presented

in Chapter 5 of this thesis. Overall strengths and limitations of the research which need to be considered when interpreting the findings are described below.

7.3.1 Strengths

Strengths of this research include:

1. CEnR involving research partners from the MSM and waria communities from the onset of the project resulted in a very relevant research project. Partners were involved in every stage, contributed to recruitment and data collection, and hence the high levels of engagement in the project.
2. CEnR utilization in this research has yielded more robust findings regarding predictors of condom use attitudes and behaviours amongst MSM and waria communities. This study was able to describe factors that influence stigma and discrimination and mental health issues more rigorously by using CEnR.
3. The sequential mixed methods approach adopted for this research enriched the findings. This allowed the researcher to explore the experiences of MSM and waria via in-depth interviews, which enriched the survey results.
4. A strong sample was achieved for the survey despite the research being conducted during the global COVID-19 pandemic. This was achieved with the support of the research partners in Bali.
5. As this research was conducted during the most severe lockdowns of the global COVID-19 pandemic, this study was able to provide baseline findings about psychological distress and happiness amongst these communities during a pandemic situation in Bali, Indonesia (Septarini, Hendriks et al. 2021).

7.3.2 Limitations

Despite the strengths of the study, there are several limitations that should be considered when interpreting the results:

1. Non-random sampling was employed to recruit participants who have access to the Internet and can be reached by research partners (NGOs staff). Use of this recruitment method may have precluded some potential participants. The study was also conducted in Bali; hence, the findings may not be generalizable to all MSM and waria communities in Indonesia.
2. This research may be subject to recall and social desirability bias. Recall bias was reduced by anchoring the time-frame of the survey to the previous six

months, while social desirability bias was anticipated by building a non-judgmental environment between research partners and participants. This was facilitated by involving the research partners in the conceptualisation of the research and the development of measures.

3. Due to the cross-sectional nature of the survey, causal-effect relationships cannot be determined.
4. The findings of in-depth interviews from ten MSM and waria participants supported survey findings. A larger sample may have provided greater depth.
5. This project only focused on experiences of MSM and waria living in Bali and did not try to confirm their experiences with any stakeholders' perspectives which may resulting on hyperbole/ overstatement experiences from the research participants.

7.4 Recommendations

Improving sexual health is a key public health issue for MSM and waria communities in Bali. The fifth objective of this research focused on providing recommendations for the development of strategies or interventions to improve safer sex behaviours among MSM and waria in Bali. Specific and detailed recommendations are available in the Chapter 5 (in each paper). This thesis section presents a summary of recommendations specifically for policy makers, NGOs, MSM and waria communities and families, and future research.

7.4.1 For Policy Makers

Specifically for policy makers, recommendations include:

1. A focus on workplace policies to address discrimination and respect is This study found discrimination was more likely to be experienced by waria who have regular employment recommended. Disseminate information about the Employment Act (No 13 Year 2003 article 5 and article 6) which highlight opportunity to obtain employment should be afforded to all people without discrimination; and all employees are entitled to the same treatment employers without discrimination (Indonesia State Secretary Minister 2003). The Employment Act already highlighted against discrimination amongst all workers in general. However, as this study found discrimination remain occur amongst waria group, it is recommended for companies to provide more attention also for LGBT population beside other vulnerable and marginalised populations such as women and people with disability.

2. Ensuring government-led interventions focusing on safe access to healthcare settings and disclosure of MSM to healthcare providers is important reduce stigma (Risher, Adams et al. 2013), and it is recommended such interventions are implemented in Bali.

3. Same sex relationships are currently not accepted in Indonesia. From a human rights perspective, however, it is important to begin to introduce children and adolescents to sexuality education. Gradual inclusion of relationships and sexuality education should be included in school curriculum and comprehensive school-based programs implemented to encourage diversity and reduce bullying and discrimination.

4. Harassments is a common experience, especially for those who work on the street. As sex work is illegal, there is a dilemma around advocating and presenting their experiences to the police and other government departments. Policy makers may provide opportunities for waria to learn specific skills that can enhance employment opportunities. However, longer term advocacy, reduction in societal discrimination (social health promotion), and ultimately legislative change is required.

Stakeholders could work with global human rights organisations to learn from the experiences of other countries that have successfully advocated for the decriminalisation of same sex relationships and sex work. Education for the waria population is needed as many of them are unaware that by the law, waria cannot accept changing sexual identity in their ID card through sexual preference and only those who have already completely reaffirmed their sex through genital surgery can change their sex identity on their ID card.

4. Stigma around condoms remains prominent. Although results from the survey found that most MSM did not think it was difficult to access condoms in Bali, did not think it was embarrassing to buy condoms, and did not agree that condoms were expensive, in the in-depth interviews found that when NGOs do not have any condoms in stock, and cannot distribute them in the communities, MSM and waria are usually reluctant to buy them at the chemist or minimarket (as in Bali, only these places sell condoms) due to stigma from other consumers and check-out personnel. Therefeore, the government may be to commence the distribution of condoms through multiple channels and outlets, such as condom vending machines (in closed/secure areas, workplaces, youth organisations, and hostels/bars) as community-based distribution and providing condoms public health services encourages the condom retail and online condom market (commercial and social marketing)(Ramanathan, Deshpande et al. 2014, DeMaria, Ramos-Ortiz et al. 2020).

5. Enhance access to STI screening in the community, especially for high risk populations. Advocate for affordable and accessible STI screening.
6. Based on the success of PrEP programs in other countries (Zablotska, Baeten et al. 2018), the prevalence of high risk behaviours among waria and MSM in Bali, and poor rates of retention in HIV treatment amongst key populations in Bali (Januraga, Reekie et al. 2018), it is imperative that PrEP programs are need to be funded, implemented, supported, and measured using evidence based science. Currently in Indonesia, there is limited availability of PrEP (Cempaka, Wardhani et al. 2020). However some programs do exist, but can only be accessed at two cities in Bali, specifically for high risks communities such as MSM, transgender, sex workers, people who inject drugs, and partners of HIV positive persons (Cempaka, Wardhani et al. 2020). Therefore, advocacy for policymakers should focus on access and affordability of PrEP in Bali. The collaboration between policymakers and NGOs will be very important as NGOs can play an important role in promoting and encouraging waria and MSM to access PrEP.

7.4.2 For NGOs

Non-government organisations play an important role in approaching communities where stigma and dscrimination are still prominent. NGO staff often have more capacity for outreach to other communities than government staff. In addition to outreach work, some NGOs in Bali with a focus on STIs/HIV also implement sexual health clinics, providing health service access to marginalised communities, including MSM. and waria, who may be uncomfortable with government-led health service centres.

Recommendations for NGOs

1. This study found STIs knowledge positively impacted condom use attitudes, therefore improving STI knowledge may improve condom use attitudes and subsequently impact behaviours. As NGOs are more "close" to the MSM communities, compared to governmental institution, an example to improve STI knowledge can be done by giving proper and adequate information during field work and not merely ask clients to do STIs testing. Emphasising pre and post-test questions during HIV testing by giving some examples of STIs and its signs and symptoms is also an important example. All of this program can be done synergism with governmental institutions, Other example is governmental and NGOs' clinics can refreshed the STIs information in the clinic during STIs/HIV diagnoses and treatment procedures for example by giving brochures, leaflets, or verbal advice. More information to increase awareness on STIs/HIV and improve access to STIs testing/screening may also be promoted during outreach work in the field.
2. Condom distribution routinely conducted by NGOs during outreach and clinics should also emphasise other risk reduction strategies to differentiate sexual activities between regular, casual, and commercial partners (Bavinton, Mahendra et al. 2021). Promoting condom use is essential; however, several types of risk reduction practices may also be used by the MSM and waria communities, including abstinence, postponing sex, solo sex, mutual masturbation, dry kissing, and choosing manual sex compared to oral or anal sex (Mimiaga, Reisner et al. 2013).

3. In collaboration with MSM communities and families, conducting a project to develop specific strategies to engage families to reduce stigma is important as familial support was found to be a significant factor in reducing stigma amongst MSM

7.4.3 For MSM and waria communities and families

In this study some MSM and waria had disclosed their sexual identities and preferences to their family, while others had not disclosed this to family and/or friends. Some recommendations that may possibly work for MSM and waria and their families include:

1. Working to reduce stigma can include a range of strategies. Some recommendations, such as the inclusion of relationships and sexuality education at school and more inclusive workplace policies can foster positive changes. Inclusion of waria and MSM in village events (traditional, religious and general) should be facilitated. Social connections with neighbours and the broader community are likely to reduce community-based stigma.

7.4.4 For further research

This research has provided a broad account of sexual attitudes, behaviours, and experiences of MSM and waria communities and influencing factors. Recommendations for future research include:

1. Further investigation into the association between condom attitudes and religion to understand the reasons lower condom attitude scores (negative condom attitudes) are associated with non-Hindu and non-Muslim religions. Moreover, as different socio-ecological factors were also found to be associated with condom attitudes amongst MSM and waria, future research may consider focusing on different individual, interpersonal and societal factors before designing specific interventions to address attitudes.
2. In relation to mental health and the pandemic situation, future research will need to explore solutions to mitigate the exacerbation of the mental health burden due to the pandemic, which may include several modalities that can be conducted in person or online for targeted individuals. Also, research into the possibility of commencing telehealth services and/or a 24/7 helpline number that can be accessed anytime, regardless of restrictions.
3. Research focusing on potential protective factors for employment during the pandemic, or other crises, to address the impact of psychological distress and

happiness for these communities would inform better solutions and more effective policies and practices.

4. Research focusing in government's/stakeholder's intervention for MSM and waria communities and their perspectives and programs that already conducted for these communities may be beneficial to prevent/counteract the overstatement (if any) of the participants about their experiences while living in Bali.

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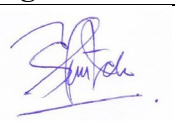
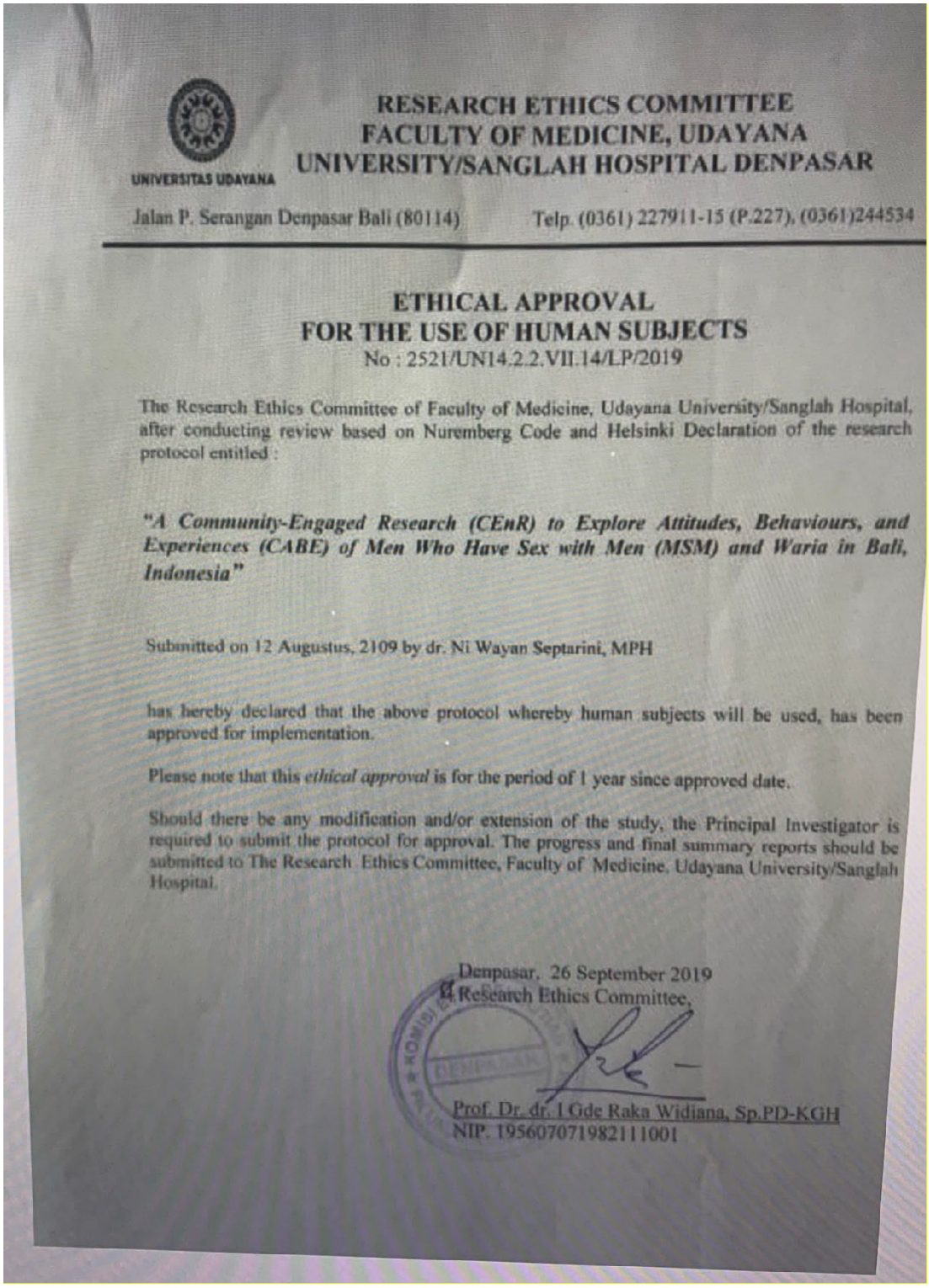
APPENDICES

Appendix A Statements of the contribution

Contributor	Statement of contribution	Signature/date
Ni Wayan Septarini (Candidate)	Conceptualisation and design methods (100%) Data collection (100%) Data cleaning and management (100%) Designed the analysis (80%) Performed data analysis (90%) Interpreted results (80%) Wrote papers and thesis (100%)	 20 Oct 2022
Professor Sharyn Burns (Supervisor)	Critically edited papers and thesis (50%) Interpreted results (20%) Statistically analysis advice (10%)	 29 Oct 2022
Dr Jacqueline Hendriks (Co-supervisor)	Critically edited papers and thesis (30%) Interpreted results (10%) Recommendation advice (10%)	 29 Oct 2022
Professor Bruce Maycock (Former supervisor)	Critically edited papers and thesis (10%) Interpreted results (20%) Recommendation advice (5%)	 29 Oct 2022
Dr. HuiJun Chih (Biostatistics lecturer)	Advised on data analysis (10%) Critically edited papers (10%) Interpreted results (10%)	J.Chih 29 Oct 2022
Dr I Nyoman Sutarsa (External collaborator from Australia National University)	Critically edited papers (10%)	 20 Oct 2022

Appendix B Ethical Clearance Letters



UNIVERSITAS UDAYANA

RESEARCH ETHICS COMMITTEE
FACULTY OF MEDICINE, UDAYANA
UNIVERSITY/SANGLAH HOSPITAL DENPASAR

Jalan P. Serangan Denpasar Bali (80114) Telp. (0361) 227911-15 (P.227), (0361)244534

ETHICAL APPROVAL
FOR THE USE OF HUMAN SUBJECTS
No : 2521/UN14.2.2.VII.14/LP/2019

The Research Ethics Committee of Faculty of Medicine, Udayana University/Sanglah Hospital, after conducting review based on Nuremberg Code and Helsinki Declaration of the research protocol entitled :

"A Community-Engaged Research (CEnR) to Explore Attitudes, Behaviours, and Experiences (CABE) of Men Who Have Sex with Men (MSM) and Waria in Bali, Indonesia"

Submitted on 12 Augustus, 2109 by dr. Ni Wayan Septarini, MPH

has hereby declared that the above protocol whereby human subjects will be used, has been approved for implementation.

Please note that this *ethical approval* is for the period of 1 year since approved date.

Should there be any modification and/or extension of the study, the Principal Investigator is required to submit the protocol for approval. The progress and final summary reports should be submitted to The Research Ethics Committee, Faculty of Medicine, Udayana University/Sanglah Hospital.

Denpasar, 26 September 2019
Research Ethics Committee,

Prof. Dr. dr. I Gde Raka Widiana, Sp.PD-KGH
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Research Office at Curtin

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Appendix C **Information for respondent and survey instruments**

Information for respondents

My name is Ni Wayan Septarini. At the moment I am conducting a survey under the guidance of Prof. Bruce Maycock, A / Prof. Sharyn Burns, and Dr. Jacqui Hendriks in order to complete my education at the Faculty of Public Health, Curtin University. You are requested to participate in this research because I believe that your opinion, as a member of the community, is very important to be heard in relation to understanding the attitudes, behaviors, and experiences of MSM and transvestites in Bali with the aim of providing information about effective strategies to improve sexual behavior safety. Since sexual health is a sensitive topic for discussion, your opinion is very important to consider.

Why am I being asked to participate and what do I need to do?
You are a candidate to participate if you have lived in Bali for at least 6 months, and will be in Bali for the next 6 months. The questions we ask will relate to your view of your attitude, behavior and experience as a MSM or transvestite living in Bali. We will also ask about the ease and difficulty you experience as MSM and transvestites living in Bali. You will not be asked about your sexual activity in detail and all the answers you give are about general things. If you decide to participate, you will be asked to fill out online surveys that are confidential and anonymous. You will be asked to answer several questions related to your demographic data. Survey questions are multiple choice and there are 4 questions asking you to write comments and suggestions.
This survey does not require any fees.
This survey takes approximately 20 minutes.

Are there any benefits for me if I get involved?
Although there is no direct benefit for you if you participate, you have contributed to knowledge by giving your feedback. Your answers will be a source of information that can be used by policy makers in Bali Indonesia to formulate better policies in the fields of Education and health.
All survey participants, including those who decide not to complete the survey have the opportunity to participate in the draw to get one of 20 vouchers / cash worth Rp. 300,000, which will be chosen randomly by the system. You will be given instructions to open a new page where you need to fill in your contacts so you can be contacted if you win the lottery. Participation in the prize draw is voluntary.

Are there risks, side effects, discomforts, or other things that I need to consider if I participate in this research?
We are very careful to make sure the questions in this survey do not interfere with your comfort. However, if you feel worried about parts of the question and don't want to answer it, you don't need to answer the question. You can decide to stop

participating in this survey at any time if you are worried about answering survey questions.

Who will have access to my information?
All information you submit will remain anonymous and will only be seen by the research team. You are free to participate or not participate in this research. You can resign / stop participating in this research whenever you want. You will not be able to be associated with your survey answers. Research results may be presented at conferences or published in professional journals. You will not be associated or identified in the results of research to be published / presented.

Do I have to participate in this research?
Participation in research is voluntary. The decision is entirely in your hands. If you feel you don't want to participate, you don't need to take part. If you decide to take part in the beginning and then change your mind, that's no problem. You can stop answering questions and exit the survey before you complete it. After you complete and send your answers, you cannot withdraw your answers because we will not be able to identify which of your answers.

What will happen next and who can I contact with regards to this research?
If you decide to take part in this research, we will ask you to check the agreement box below. By checking this box, you inform us that you understand what you have read.
For further information, please contact Ni Wayan Septarini (niwayans1@postgrad.curtin.edu.au) or WhatsApp +61451774799)

Statement from Udayana University and Curtin University regarding Research
The Ethics Commission of the Faculty of Medicine, Udayana University / Sanglah Hospital (No: 2521 / UN14.2.2.VII.14 / LP / 2019) and Curtin University's Human Ethics Committees (HREC number HRE 2019-0759) have approved this study. If you want to discuss this research with someone who is not directly involved, especially if you want to submit a complaint in secret, you can contact the Office of Ethics (Ethics Officer) at (+61) 8 9266 9223 or the research integrity manager at (+61) 8 9266 7093 or email (hrec@curtin.edu.au) or the ethics commission of the Faculty of Medicine, Udayana University at (+62) 361 244534.

The Cabe Project

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We are nviting you to participate in this research because we believe that youropriion,as a member of 1he community, is very important to be heard in relation to understanding the altitudes, behaviors, and experiences of MSM and transvestites in Bali. Wehope 1his study wil provide nformation about effective strategies to improve sexual health. Beforedecidng if you would like to participate **n** this survey, we ask 1hal you read the fcllowng information: Information for respondents .

APPROVAL. I have received and read information for respondents related to 1his survey, I understand theobjectives, limits and possible risks of mynvolvemenl in 1his research and voluntariy want lo participate

0 I agree to participate **n** 1his survey (1)

0 I do notagree to participate **n** this survey (2)

End of Block: Partiicipant"s agreemnent

Start of Block: Screening questiions

The **blowing** questions are lo determne \'llle1her you meet 1he criteria for participating **n** 1his survey.

Are you 18 years orolder?

0 Yes (1)

Q No (2)

Are you an Indonesian citizen?

0 Yes (1)

0 No (2)

Are you male, homosexual/ gay, bisexual, or waria / transgender / transpuan?

0 Yes (1)

0 No (2)

Have you had sexual activity (by hand,oralsex and/ or anal sex)in 1he last 6 mon1hs with men orwaria?

0 Yes (1)

Q No (2)

Have you lived in Bali for at least 6 months?

0 Yes (1)

0 No (2)

Do you have a plan 1D live in Bali for at least thenext 6 mon1hs?

0 Yes (1)

0 No (2)

Have you participated in this research bebre?

0 No (1)

0 Yes,I have participated in 1his survey (2)

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End of Block: Screening questions

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Inyour opinion, \llia!isyour gender?

0 **Female (1)**

Q **Male (2)**

0 **Waria/ transpuan / transgender people (3)**

0 **Do not know (4)**

0 **other (please specify) (5)** ____

According to you, you are

0 **Completely heterosexual (only attracted to opposite sex) (1)**

0 **Tends ID be heterosexual (more attracted to the opposite sex and less attracted IDthe same sex) (2)**

0 **Homosexual/ completely gay (interested in same sex only) (3)**

0 **Tend to be homosexual/ gay (attracted more to the same sex and less attracted ID 1he opposite sex) (4)**

0 **Bisexual (attracted ID opposite sex and same-sex llli1h equal portions) (5)**

0 **Do not know (6)**

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What was the last education you completed?

0 No school (1)

0 Bementary school (2)

Q Middle School (3)

Q High school (4)

0 Diploma (5)

0 University (6)

What take the most ofyourmneon most days?

0 Work (specify yourjob) (1) _____

O Go ID school / college (2)

0 Work and school/ colege (3)

0 Doesnotwork/doesnotattendschool (4)

0 House duties (6)

0 Other (please specify) (5) _____

What is your marital status noW?

0 Single (Notmarried,not livilg with lover/ girlfriend) (1)

0 Married (2)

0 Stayilg at home with a girlfriend (7)

0 Stayilg at home with a boyfriend (6)

0 Widowed/ Separated (4)

0 Other (please specify) (5) _____

What is your religion?

Q Hildu (1)

0 Islam (2)

0 Catholic Christianity (3)

0 Christian Protestant (4)

0 Buddha (5)

0 Conllcianism (6)

0 No religion (7)

What month, date and year were you born?

Month (1)	T January (1). (150)
Date (2)	T January (1) (150)
Year (3)	T January (1) ... (150)

Where you born?

0 Bali (1) _____

0 Java (2) _____

0 Sumatra (3) _____

0 Eastern Indonesia (4) _____

0 Other (please specify) (5) _____

What is your main reason for choosing to live in Bali?

0 Continuing school/ college (1)

0 For work (2)

0 Follow friends (3)

0 Join your partner (4)

0 Comfort and safety (5)

0 Not accepted by family/ expelled from home (6)

0 Other (please specify) (7) _____

What is your family's attitude regarding your status as MSM /waria?

0 My family do not know about my status as a MSM/ waria (4)

0 All family members accept (1)

0 Some family members accept. some reject (2)

0 All family members reject (5)

Where do you live now?

0 Denpasar (1)

0 Badung (2)

0 Gianyar (3)

0 Buleleng (4)

0 Tabanan (5)

0 **Bangli** (6)

0 Jembrana (7)

0 Karangasem (8)

0 Klungkung (9)

How long have you lived in the area?

01 (7)_____

O My whole **life** (8)

Inyour opinion, MSM / waria aremore combr1able to live in Bali?

0 Yes,very comfortable (1)

0 Yes,mos11y combr1able (2)

0 No,not combr1able (3)

0 Unsure (4)

In your opinion, MSM / waria are safer to**livein** Bali?

0 Yes,very safe (1)

0 Yes,mos11y safe (2)

0 No,irs not safe (3)

0 Unsure (4)

In your opinion, is there a difference in living in the cityand in the village for MSM / waria?

0 Living in 1he city is easier (1)

0 Living in 1he village is easier (2)

0 The same (3)

0 Unsure (4)

Page Break

Do you have any groups to gather with MSM / waria friends? (Before the Covid 19 / Corona virus outbreak)?

0 Yes (1)

0 No (2)

During the Covid 19 / Corona virus outbreak, did you (still) communicate with MSM / waria friends?

0 Yes, online (1)

0 Yes, seeing them in person (2)

0 Yes, online and in person (3)

0 No (4)

What did you discuss with MSM / waria friends during the Covid 19 outbreak? (Tick all that apply)

D Sexual/ reproductive health including condoms, STIs, HIV, and HIV testing (1)

D General health (3)

D Couple/relationship (4)

D Profession/job (5)

D Other (please specify) (6) _____

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End of Block: Demographic characteristics

Stao:1: of Block: Sexual relationship and partners

The following questions are about your sexual relations. We inform you once again that this survey is confidential and anonymous/ anonymous, so we will not be able to identify answers from survey participants.

During the past **year,** how many regular partners (wife / husband or girlfriend) do you have?

0 Do not have a regular partner (1)

O 1 (2)

0 2-4 (3)

0 5-10 (4)

0 More than 10 (5)

Over the past **year,** did you use a condom when having sex with a regular partner?

0 Always (1)

0 Frequently (more than 50%) (2)

0 Rarely (less than 50%) (3)

0 Never (4)

What is your regular partner (s)'s attitude about your status as MSM/waria?

0 My regular partner still does not know about my status as MSM / waria (6)

0 Accept (1)

0 Reject (2)

0 Some accept and some reject (3)

Over the pastyear,howmany non-pennanent sexual par1ners (casual/ like) do you have?

0 Do not have a casual partner (1)

O1 (2)

O 2-4 (3)

0 S-10 (4)

0 More than 10 (5)

Over the past**year**, have you used a condom du1W1g sexual intercourse with a non-pennanent par1ner (casual)?

0 Always (1)

0 Frequen11y (more than 50%) (2)

0 Rarely (less than 50%) (3)

0 Never (4)

Over the past**year,**howmany commercial partners (by giving /asking for rewards) do you have?

0 Do not have a commercial par1ner (1)

O1 (2)

O 2-4 (3)

0 S-10 (4)

0 More than 10 (5)

Page Break

Over the past year, did you use a condom du1W1g sexual intercourse witha commercial partner (by giving/ askmg fer rewards)?

0 Always (1)

0 Frequen11y (more than 50%) (2)

0 Rarely (less than 50%) (3)

0 Never (4)

Please choose an answer based on your experience.

	Yes (1)	No (2)
Have you ever had sex with a woman? (1)	0	0
Have you ever had sex with a female sex worker (PSP / WTS)?(2)	0	0
Have you everhad sex with male sex workers/"cats"? (4)	0	0

End of Block: Sexual relationship and partners

Start of Block: Affitudes fowardr healfh

The blowing questions are related ID sexual health

	Yes(1)	No (2)
The use of condoms **wil** reduce the chance of contracting HIV and STIs when havinganal iltercourse with same-sex partners (1)	0	0
The possibility of contracting HIVis very high when having anal/anal intercourse without using a condom (5)	0	0
You have complete control when decidilg ID use a condom when having sex with the same sex (6)	0	0
The **likelihood** of acquiring HIVis very high during oral contact (oral sex)without using a condom (7)	0	0
Most of the friends you know use a condom when having sex with the same sex (8)	0	0

The **blowing** statement is about condoms

	Strongly agree (1)	Agree (2)	Disagree (3)	Strongly disagree (4)
Using a condom makes you feel comfortable (1)	0	0	0	0
Using condoms elminates/ reduces sexual pleasure (2)	0	0	0	0
Buying a condom is a shame (3)	0	0	0	0
It'seasy to get condoms in Bali (4)	0	0	0	0
The price of condoms is expensive / not affordable (6)	0	0	0	0

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	Always (1)	Often (2)	Somelmes (3)	Never (4)
I drn k alcoholic drinks before or durng intercourse (1)	0	0	0	0
I use NAFZA drugs (such as ectations, ice, poppers, etc.) before havng sex (2)	0	0	0	0
I avoid direct contact with spenn / vaginal fluid from my partner (5)	0	0	0	0
I asked prospective sexual partners about the experience of taking an STI or HIV test (6)	0	0	0	0
I immediately had sexual intercourse du ring the lrst meetng with a new person (7)	0	0	0	0
I do not have sexual relations if I feel pan n my genitals (8)	0	0	0	0
If I think I will have sex with someone, I will bring a condom (9)	0	0	0	0
I insist on checking my sexual partner ID see if my partner has genital sores / infection (10)	0	0	0	0

I have oral sex (oral sex) using a condom (11)	0	0	0	0
If rm lostin passion, I have sex without using a condom. (12)	0	0	0	0
I asked my prospective sexual partner abouthis experience usinginjecting narcotics drugs (13)	0	0	0	0
Ha sexual partner insists on having unprotected sex, I reilse to have sex with them (14)	0	0	0	0
I avoid direct contact wilh my sexual partner in lhe event of injury (presence of blood) (15)	0	0	0	0
I have sexual relations wilh someone who I know is bisexual or homosexual/ gay (17)	0	0	0	0

End of Block: Sexual behaviours

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	Strongly agree (1)	Agree (2)	Disagree (3)	Strongly disagree (4)
People stopped caring about/ associating wi1h me after knowing my sexual orientation (1)	0	0	0	0
Ilost friends afler I told1hem my sexual orientation (2)	0	0	0	0
Some people avoid touching me if 1hey know my sexual orientation (14)	0	0	0	0
Teling someone about my sexual orientation is risky. (15)	0	0	0	0
I tried hard ID keep my sexual orienta1ion a secret (3)	0	0	0	0
I am very carelll when I speak **wi1h** others about my sexual **orientation** (5)	0	0	0	0
Most people believe that having a different sexual orientation (as homosexual / bisexual) in society is a dirty thing (6)	0	0	0	0

Most people (the community) are uncomfortable **n** the environment of someoneMo is homosexual / bisexual (7)	0	0	0	0
Someone who has a different sexual orientation (as homosexual / bisexual) is **usualy** treated like an outcast (8)	0	0	0	0
I feel guilty i>r havng a different sexual orientation (as homosexual / bisexual) (9)	0	0	0	0
I feelthat I am not as worthy as others because I have a different sexual orientation (as homosexual / bisexual) (10)	0	0	0	0
People/ society's altitude towards homosexual / bisexual makes me feel worse about myself (11)	0	0	0	0

Page Break

Here are questions about things that you might have experienced because of your gender identity.

	Yes (1)	No (2)	Do not know (3)
Have you ever experienced problems when applying bra job? (1)	0	0	0
Have you ever lost your job? (2)	0	0	0
Have you ever been ignored/expelled from home? (3)	0	0	0
Have you everhad a problem using health services? (4)	0	0	0
Have you ever been physicaly abused (br example beaten)? (5)	0	0	0
Have you ever been sexually abused? (6)	0	0	0
Have you ever been detained by security? (7)	0	0	0
Have you ever been expelled from / left school? (8)	0	0	0
Have you ever dropped out or change schools? (10)	0	0	0

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	L.ast1 month (after the 19th Covid oulbreak)(1)	Rarely (2)	Often (3)	Amost always (4)	Always (5)
How oflen did you feel tired for no good reason? (1)	0	0	0	0	0
How oflen did you feel nervous? (3)	0	0	0	0	0
How oflen did you feel so nervous and nothing can cam you down? (4)	0	0	0	0	0
How oflen did you feel hopeless? (5)	0	0	0	0	0
How oflen did you feel res11essor fidgety? (6)	0	0	0	0	0
How oflen did you feel so res11essand nothing can make you sit **still?** (7)	0	0	0	0	0
How oflen did you feel depressed? (8)	0	0	0	0	0
How oflen did you feelthat everything was an efl>rt? (9)	0	0	0	0	0

How often did you feel so sad and nothng can cheer you up? (11)	0	0	0	0	0
How often did you reel worthless? (14)	0	0	0	0	0

How do you feel/ the conditions that you conveyed BEFORE the Covid-19 outbreak (br example, 1 year ago)?

0 The same (1)

0 Previously my **feeing**/ condition was better (2)

0 Previously my **feeing**/ condition was worse (3)

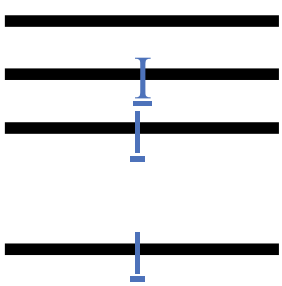
0 Do not know (4)

End of Block: Mental health

Start of Block: Happiness scale

Scroll to thenumber 1hat you 1hink is most appropriate

	1	2	3	4	5	6	7
n general, I feelmyselt 1: nota very happy person 7: very happy person ()							
When compared ID most ofmy friends, I feel that I: 1: Nothappy enough 7: Happier()							
Some people are generally very happy.They enjoy lifeno matter what happens, get the most out of everything. To what extent do these categories suit you? 1: Not suitable 7: Very suitable ()							
Some people are generally not very happy. Even 1hough they are not depressed / sad, 1hey don'tlook as happy as 1hey should. To what extent do these categories suit you? 1: Not suilable 7: Very suilable ()							



End of Block: Happiness scale

Start of Block: Informaiion about STIs and HIV

The **blowing** are some questions about sexualy transmitted nfections and HIV. We submit once again 1hat this survey is confidential and anonymous, so we **wil** not be able ID identify answers from survey participants.

Have you ever received nbrmation about sexualy transmitted nfections (STIs) incllding HIV?

0 Yes (1)

0 No (2)

Skip To· Q/0116 ff Apakah pernah memperoleh mformas, tentang mfeks1 menular seksual (IMS) termasuk H/V? = T1dak

Sources and uses of inbnnation about STIs and HIV. What do you think of the bllowing sources of infunnation?

	How is the infunnation provided?		
	Useill (1)	Useless (2)	Notapplicable (3)
Family (8)	0	0	0
School/ University (7)	0	0	0
Friend (4)	0	0	0
Health workers (hospitals, clinics, doctors, health centers) (1)	0	0	0
NGO officers/ foundations (3)	0	0	0
Intemet [.-icluding Facebook and other socialmedia) (5)	0	0	0

Have you ever experienced venereal disease / sexually transmitted infections / STIs?

0 Yes **(1)**

0 No (2)

0 Do not know (3)

If so, what venereal/ **STI** diseases have you experienced? (answers can be more than **1)**

D HIV **(1)**

D Syphilis (2)

D GO / Gonorrhea (3)

D Herpes (4)

D **HPV** (5)

D Chlamidia (7)

D Other (please specify) (6) _____

Have you ever had a rectum / anus at a health service (doctor/hospital/clinic)

0 Yes **(1)**

0 No (2)

Page Break

Are you living with HrV (PLHIV) / HIV positive?

0 Yes (1)

0 No (2)

0 Do not know/have never tested for HrV (3)

What is your family's response ID your HIV status?

0 My family doesn't know about my HIV status (6)

0 All accept (1)

0 Some accept. some not acceplng (2)

0 All reject (3)

0 Unsure (4)

End of Block: Information about STIs and HIV

Start of Block: Health services

If you want IDgel **intmnation and** checks about sexual health, sexually transmitted **infections inc:ludng** HIV you can contact one of the services below.

The Kerti Praja Foundation
Tel: (0361) n8916
Address: Jalan Raya Sesetan 270 Denpasar
Website: http://kertipraja.org/

The Gaya Dewata Foundation
Tel: 0895-236-444333
Address: Jalan Sakura rV No.8 Denpasar
Website: https://Www.gayadewata.com/

Bali Peduli Foundation
Te1: (0361> 224Sn
Address: Jalan Banteng No. 2E Denpasar
Website: https://www.balipeduli.org/

If you feel disturbed emotionaly andhealth when **filling** out this survey or when solve it. please contact thehealth worll:er where you usually check yourself, Puskesmas closest or one of the services lis1ed below.

Emergency health service contact
24-hour helpline (free): 119

Jangan Bunuh Diri/Do not **kil** yourself
Tel: (021) 9696 9293
Email: janganbunuhdiri@yahoo.com

Pulih Foundation
Tel: (021) 78842580
Email: recovert>undation@gmail.com

NGO IMAJI (Inti Mata Jiwa/Core of the Soul)
Tel: (0274) 2840227
Email:mail@maj.or.id

End of Block: Health services

Start of Block: Survey information

From whom did you get inbnnation about this survey?

0 From friends who wort atthe foundations(lliaSMS, whatsapp, email) (1)

0 From the foundation's website (2)

0 From Facebook (4)

0 Other (please specify) (3) _____

Q56 Who told you about this survey?

0 Arya (1)

0 Gung Arie (2)

0 Gino (3)

0 Tut Nik (4)

0 Choco (5)

Q Bella (6)

0 Charisma (7)

0 Kimora (8)

0 Rio (9)

0 Yudi (10)

End of Block: Survey information

Appendix D **Information for respondents, In-depth interview short survey and guideline**

Information for respondents

My name is Ni Wayan Septarini. At the moment I am conducting a survey under the guidance of, A / Prof. Sharyn Burns, Dr. Jacqui Hendriks, and Prof. Bruce Maycock in order to complete my education at the Faculty of Public Health, Curtin University. You are requested to participate in this research because I believe that your opinion, as a member of the community, is very important to be heard in relation to understanding the attitudes, behaviors, and experiences of MSM and waria in Bali with the aim of providing information about effective strategies to improve sexual behavior safety. Since sexual health is a sensitive topic for discussion, your opinion is very important to consider.

Why am I being asked to participate and what do I need to do?
You are a candidate to participate if you have lived in Bali for at least 6 months, and will be in Bali for the next 6 months. The questions on the interview mainly will relate to your view of your attitude, behavior and experience as a MSM or waria living in Bali. We will also ask about the ease and difficulty you experience as MSM and waria living in Bali. You will not be asked about your sexual activity in detail and all the answers you give are about general things.
If you decide to participate, we will conduct an online interview which will last around 45 minutes to 1 hour. You will need internet connection (Wi-Fi or from a sim card) during this interview. The interview will be voice recorded with no names will appeared in the conversations. This interview is confidential and anonymous. The record interview will be transcribed and translated into English, so the researchers may analyse them qualitatively. Firstly, you will be asked to answer several questions related to your demographic data. Please click on the link that I sent through WhatsApp.

Are there any benefits for me if I get involved?
Although there is no direct benefit for you if you participate, you have contributed to knowledge by giving your feedback. Your answers will be a source of information that can be used by policy makers in Bali Indonesia to formulate better policies in the fields of Education and health.
All interview participants, including those who decide not to complete the interview will be given 150,000 rupiahs cash for internet spending and appreciation to participate in the interview.
.

Are there risks, side effects, discomforts, or other things that I need to consider if I participate in this research?
We are very careful to make sure the questions in this interview do not interfere with your comfort. However, if you feel worried about parts of the question and don't want to answer it, you don't need to answer the question. You can decide to stop participating in this interview at any time if you are worried about answering interview questions.

Who will have access to my information?
All information you submit will remain anonymous and will only be seen by the research team. You are free to participate or not participate in this research. You can resign / stop participating in this research whenever you want. You will not be able to be associated with your survey answers. Research results may be presented at conferences or published in professional journals. You will not be associated or identified in the results of research to be published / presented.

Do I have to participate in this research?
Participation in research is voluntary. The decision is entirely in your hands. If you feel you don't want to participate, you don't need to take part. If you decide to take part in the beginning and then change your mind, that's no problem. You can stop answering questions and exit the interview before you complete it. After you complete and send your answers, you cannot withdraw your answers because we will not be able to identify which of your answers.

What will happen next and who can I contact with regards to this research?
If you decide to take part in this research, we will ask you to check the agreement box below. By checking this box, you inform us that you understand what you have read.
For further information, please contact Ni Wayan Septarini (niwayans1@postgrad.curtin.edu.au) or WhatsApp +61451774799)
Statement from Udayana University and Curtin University regarding Research
The Ethics Commission of the Faculty of Medicine, Udayana University / Sanglah Hospital (No: 2521 / UN14.2.2.VII.14 / LP / 2019) and Curtin University's Human Ethics Committees (HREC number HRE 2019-0759) have approved this study. If you want to discuss this research with someone who is not directly involved, especially if you want to submit a complaint in secret, you can contact the Office of Ethics (Ethics Officer) at (+61) 8 9266 9223 or the research integrity manager at (+61) 8 9266 7093 or email (hrec@curtin.edu.au) or the ethics commission of the Faculty of Medicine, Udayana University at (+62) 361 244534.

In-depth interview_short survey (Qualtrics®)

Start of Block: Introduction

Good morning/afternoon My name is Septa, I am currently pursuing PhD in Public Health at Curtin University, Australia. My study is about attitude, behaviours, and experienced of MSM and waria in Bali. For this purpose I would like to conduct an interview with you about your experiences as MSM or waria live in Bali. First of all, could you please read the participants consent form below. If you agree to participate in this interview. If you have questions, please feel free to ask. Thank you.

We are inviting you to participate in this research because we believe that your opinion, as a member of the community, is very important to be heard in relation to understanding the attitudes, behaviours, and experiences of MSM and transvestites in Bali. We hope this study will provide information about effective strategies to improve sexual health. This interview will last around 30-45 minutes. This interview will be also recorded for the sake of research only. There will be no name (anonymous) included in this interview. As mentioned in the form, you are free to withdraw at any time if you wish. Before deciding if you would like to participate in this interview, we ask that you read the following information: Information for respondent

APPROVAL. I have received and read information for respondents related to this interview, I understand the objectives, limits and possible risks of my involvement in this research and voluntarily want to participate

- ○ I agree to participate in this interview (1)
- ○ I do not agree to participate in this interview (2)

Thank you for your interest to participate in this interview. First of all, I would like to ask about some general questions. Please fill out this form below.

What is your age?

_____

In your opinion, what is your gender?

- ○ Male (1)
- ○ Female (2)
- ○ Waria/ transpuan / transgender people (3)
- ○ Others (4) _____

According to you, you are.....

- ○ Completely heterosexual (only attracted to opposite sex) (1) (1)
- ○ Tends to be heterosexual (more attracted to the opposite sex and less attracted to the same sex) (2)
- ○ Homosexual / completely gay (interested in same sex only) (3) (3)
- ○ Tend to be homosexual / gay (attracted more to the same sex and less attracted to the opposite sex) (4)
- ○ Bisexual (attracted to opposite sex and same-sex with equal portions) (5)
- ○ Do not know (6)

What was the last education you completed?

- ○ No school (1)
- ○ Elementary school (2)
- ○ Junior High School (3)
- ○ Senior High School (4)
- ○ Diploma (5)
- ○ University (6)

Where were you born?

- ○ Bali (1)
- ○ Outside Bali (2) _____

What is the main activity that you do in most days during the week?

- ○ Studying (1)
- ○ Working (2)
- ○ Studying and working (3)
- ○ Others (4) _____

What is your marital status now?

- ○ Single (1)
- ○ Married (2)
- ○ Living with a male partner (3)
- ○ Living with a female partner (4)
- ○ Others (5) _____

What is your religion?

_____

End of Block: Introduction

In-depth interview guideline

Good morning/afternoon
My name is Septa, I am currently pursuing PhD in Public Health at Curtin University, Australia. My study is about attitude, behaviours, and experienced of MSM and waria in Bali. For this purpose I would like to conduct an interview with you about your experiences as MSM or waria live in Bali.
First of all, could you please read the participants consent form that I sent to you and please sign if you agree to participate in this interview. If you have questions, please feel free to ask. Thank you.

Thank you for your interest to participate in this interview.
This interview will last around 30-45 minutes. As mentioned in the form, you are free to withdraw at any time if you wish.

1. May I know your age please? (what year were you born?)
2. Are you born in Bali? Are you Balinese?
3. Where are you living at the moment? For how long have you lived there?
4. What is the main activity that you do in most days during the week? Working/studying?
5. What is your marital status? Are you married or living with a partner?
6. Could you please tell when and how you first engaged with NGO that working with MSM or waria communities?
7. Have you experienced any stigma because of your gender? Could you please give an example?
8. Have you experienced any stigma because of your sexual preferences? Could you give example?
9. How about your family members/partner? Are they know about your gender or sexual preferences? How are their attitudes? Could you please explain a bit further?
10. Have you experienced any discrimination at all because your gender? Example please!
11. Have you experienced any discrimination at all because of your sexual id/ preferences? Could you provide any examples?
12. How do you feel about the situation, culture, and public/people attitudes in Bali related to acceptability on different gender and sexual preferences? Could you explain more with examples please…
13. If you compare to other places (include the place that you were born) what is the different? Could you please give some examples?
14. What about the social networking in Bali and comparing to other places? What about the sexual networking when comparing Bali and other places?
15. What are the differences before and after COVID-19 pandemic in relation to your occupation, sexual and social network?
16. What about your feeling before and after COVID-19 pandemic? Any stress? What about the happiness?
17. Tell me more about your family?
    (for those who are married or have partner: are your wife/partner know about your sexual id/preferences status? What are their attitudes and behaviours regarding this? What about your wider family members, children etc?)

18. Are there any other information that would you like to add in relation to living as MSM or waria in Bali?

Thank you for your participation. I really appreciated your involvement in this research. If you have any questions related to this interview or research, please feel free to ask.

Thank you. Have a nice day….

Appendix E Supplementary tables 1 and 2

Supplementary Table 1 Sub-domains of stigma (categorised into lower/fairly high /higher stigma#) experienced by MSM

Characteristics	Perceived stigma			p-value*	Expected count less than 5 (%)	Disclosure concerns			p-value*	Expected count less than 5 (%)	Concerns of public attitudes			p-value*	Expect count l than 5 (
	Lower	**Fairly high**	**Higher**			**Lower**	**Fairly high**	**Higher**			**Lower**	**Fairly high**	**Higher**		
Age groups, n (%)				0.898	22.2				0.492	22.2				0.18	22.2
18-25	12 (16.2)	41 (19.5)	2 (25.0)			2 (8.3)	40 (19.5)	13 (21.7)			3 (6.5)	48 (21.6)	3 (13,0)		
26-40	54 (73.0)	141 (67.1)	5 (62.5)			20 (83.3)	141 (68.8)	38 (63.3)			36 (78.3)	147 (66.2)	17 (73.9)		
41-60	8 (10.8)	28 (13.3)	1 (12.5)			2 (5.7)	24 (11.7)	9 (15.0)			7 (15.2)	27 (12.2)	3 (13.0)		
Sexual identity, n (%)				0.878	22.2				0.003	22.2				0.641	22.2
Heterosexual/tend to be heterosexual	14 (18.9)	31 (14.8)	1 (12.5)			1 (4.2)	35 (17.1)	9 (15.0)			6 (13.0)	37 (16.7)	3 (13.0)		
Homosexual/tend to be homosexual	48 (64.9)	145 (73.2)	5 (62.5)			21 (87.5)	143 (69.8)	32 (53.3)			31 (67.4)	152 (68.5)	14 (60.9)		
Bisexual	12 (16.2)	34 (16.2)	2 (25.0)			2 (8.3)	27 (13.2)	19 (31.7)			9 (19.6)	33 (14.9)	6 (26.1)		
Education level, n (%)				0.466	41.7				0.865	25.0				0.822	25
No or elementary school	3 (4.1)	9 (4.3)	1 (12.5)			1 (4.2)	9 (4.4)	3 (5.0)			2 (4.3)	10 (4.5)	1 (4.3)		
Junior high school	5 (6.8)	30 (14.3)	2 (25.0)			1 (4.2)	27 (13.2)	8 (13.3)			4 (8.7)	29 (13.1)	4 (17.4)		
Senior high school	46 (62.2)	120 (57.1)	4 (50.0)			14 (58.3)	122 (59.5)	34 (56.7)			25 (54.3)	133 (59.9)	13 (56.5)		
Diploma or higher	20 (27.8)	51 (24.3)	1 (12.5)			8 (33.3)	47 (22.9)	15 (25.0)			15 (32.6)	50 (22.5)	5 (21,7)		
Marital status, n (%)				0.127	16.7				0.067	0.0				0.077	0.0
Single (not married, widow)	48 (64.9)	147 (70.0)	3 (37.5)			11 (45.8)	142 (69.3)	41 (68.3)			25 (54.3)	157 (70.7)	14 (60.9)		
Married/living with a partner	26 (35.1)	63 (30.0)	5 (62.5)			13 (54.2)	63 (30.7)	19 (31.7)			21 (45.7)	65 (29.3)	9 (39.1)		
Daily activities / Employment status, n (%)				0.058	33.3				0.415	11.1				0.147	11.1
Regular/full time job	38 (51.4)	119 (56.7)	2 (25.0)			15 (62.5)	112 (54.6)	29 (48.3)			27 (58.7)	122 (55.0)	10 (43.5)		

School/college	14 (29.8)	33 (15.7)	0 (0.0)			4 (16.7)	29 (14.1)	14 (23.3)			3 (6.5)	41 (18.5)	3 (13.0)		
No job/ no school/home duties	22 (29.7)	58 (27.6)	6 (75.0)			5 (20.8)	64 (31.2)	17 (28.3)			16 (34.8)	59 (26.6)	10 (43.5)		
Religion, n (%)				0.145	16.7				0.794	0.0				0.489	0.0
Hindu	18 (24.3)	72 (34.3)	1 (12.5)			6 (25.0)	65 (31.7)	19 (31.7)			11 (23.9)	72 (32.4)	8 (34.8)		
Others	56 (75.7)	138 (65.7)	7 (87.5)			18 (75.0)	140 (68.3)	41 (68.3)			35 976.1)	150 (67.6)	15 (65.2)		
Place of birth, n (%)				0.605	33.3				0.756	0.0				0.385	0.0
Bali	27 (36.5)	87 (41.4)	2 (25.0)			10 (41.7)	78 (38.0)	27 (45.0)			13 (28.3)	92 (41.4)	11 (47.8)		
Java	29 (39.2)	76 (36.2)	5 (62.5)			9 (37.5)	81 (39.5)	18 (30.0)			21 (45.7)	82 (36.9)	6 (26.1)		
Others	18 (24.3)	47 (22.4)	1 (12.5)			5 (20.8)	46 (22.4)	15 (25.0)			12 (26.1)	48 (21.6)	6 (26.1)		
Current living area, n (%)				0.152	16.7				0.477	16.7				0.19	16.7
Urban	70 (94.6)	181 (86.2)	7 (87.5)			23 (95.8)	181 (88.3)	52 (86.7)			44 (95.7)	192 (86.5)	21 (91.3)		
Rural	4 (5.4)	29 (13.8)	1 (12.5)			1 (4.2)	24 (11.7)	8 (13.3)			2 (4.3)	30 (13.5)	2 (8.7)		
HIV+ status, n (%)				0.008	16.7				0.000	0.0				0.001	0.0
Yes	34 (45.9)	58 (27.8)	1 (12.5)			17 (70.8)	63 (30.9)	12 (20.0)			24 (52.2)	67 (30.3)	2 (8.7)		
No/do not know	40 (54.1)	151 (72.2)	7 (87.5)			7 (29.2)	141 (71.9)	48 (80.0)			22 (47.8)	154 (69.7)	21 (91.3)		

Supplementary Table 2

Sub-domains of stigma (categorised into lower/fairly high /higher stigma#) experienced by Waria

Characteristics	Perceived stigma				Expected count less than 5 (%)	Disclosure concerns				Expected count less than 5	Concerns of public attitudes			
	Lower	**Fairly high**	**Higher**	p-value*		**Lower**	**Fairly high**	**Higher**	p-value*		**Lower**	**Fairly high**	**Higher**	p-value*
Age groups, n (%)				0.607	44.4				0.637	44.4				0.023
18-25	2 (7.7)	11 (12.5)	1 (14.3)			2 (11.1)	12 (13.2)	0 (0.0)			0 (0.0)	12 (14.0)	2 (20.0)	
26-40	16 (61.5)	62 (70.5)	5 (71.4)			11 (61.1)	62 (68.1)	9 (81.8)			14 (58.3)	61 (70.9)	7 (70.0)	
41-60	8 (30.8)	15 (17.0)	1 (14.3)			5 (27.8)	17 (18.7)	2 (18.2)			10 (41.7)	13 (15.1)	1 (10.0)	
Sexual identity, n (%)				0.772	55.6				0.813	55.6				0.921
Heterosexual/tend to be heterosexual	4 (15.4)	16 (18.2)	1 (14.3)			4 (22.2)	15 (16.5)	2 (18.2)			5 (20.8)	13 (15.1)	2 (20.0)	
Homosexual/tend to be homosexual	22 (84.6)	68 (77.3)	6 (85.7)			14 (77.8)	72 (79.1)	9 (81.8)			18 (75.0)	70 (81.4)	8 (80.0)	
Bisexual	0 (0,0)	4 (4.5)	0 (0.0)			0 (0.0)	4 (4.4)	0 (0.0)			1 (4.2)	3 (3.5)	0 (0.0)	
Education level, n (%)				0.444	41.7				0.633	58.3				0.041
No or elementary school	10 (38.5)	23 (26.1)	1 (14.3)			7 (38.9)	22 (24.2)	4 (36.4)			12 (50.0)	16 (18.6)	3 (30.0)	
Junior high school	5 (19.2)	23 (26.1)	4 (57.1)			5 (27.8)	24 (26.4)	3 (27.3)			6 (25.0)\	27 (31.4)	1 (10.0)	
Senior high school	10 (38.5)	35 (39.8)	2 (28.6)			6 (33.3)	37 (40.7)	4 (36.4)			4 (16.7)	38 (44.2)	5 (50.0)	
Diploma or higher	1 (3.8)	7 (8.0)	0 (0.0)			0 (0.0)	8 (8.8)	0 (0.0)			2 (8.3)	5 (5.8)	1 (10.0)	
Marital status, n (%)				0.076	16.7				0.336	33.3				0.120
Single (not married, widow)	22 (84.6)	66 (75.0)	3 (42.9)			16 (88.9)	66 (72.5)	8 (72.7)			20 (83.3)	65 (75.6)	5 (50.0)	
Married/living with a partner	4 (15.4)	22 (25.0)	4 (57.1)			2 (11.1)	25 (27.5)	3 (27.3)			4 (16.7)	21 (24.4)	5 (50.0)	
Daily activities / Employment status, n (%)				0.389	44.4				0.118	33.3				0.541
Regular/full time job	15 (57.7)	43 (48.9)_	5 (71.4)			14 (77.8)	42 (46.2)	7 (63.6)			15 (62.5)	43 (50.0)	7 (70.0)	
School/college	0 (0.0)	8 (9.1)	0 (0.0)			0 (0.0)	6 (6.6)	1 (9.1)			1 (4.2)	5 (5.8)	1 (10.0)	
No job/ no school/home duties	11 (42.3)	37 (42.0)	2 (28.6)			4 (22.2)	43 (47.3)	3 (27.3)			8 (33.3)	38 (44.2)	2 (20.0)	
Religion, n (%)				0.697	33.3				0.501	16.7				0.738
Hindu	7 (26.9)	25 (28.4)	3 (42.9)			4 (22.2)	29 (31.9)	2 (18.2)			8 (33.3)	25 (29.1)	2 (20.0)	

Others	19 (73.1)	63 (71.6)	4 (57.1)			14 (77.8)	62 (68.1)	9 (81.8)			16 (66.7)	61 (70.9)	8 (80.0)	
Place of birth, n (%)				0.137	33.3				0.462	44.4				0.868
Bali	7 (26.9)	34 (38.6)	5 (71.4)			4 (22.2)	39 (42.9)	3 (27.3)			9 (37.5)	34 (39.5)	3 (30.0)	
Java	14 (53.8)	37 (42.0)	0 (0.0)			10 (55.6)	35 (38.5)	6 (54.5)			12 (50.0)	35 (40.7)	5 (50.0)	
Others	5 (19.2)	17 (19.3)	2 (28.6)			4 (22.2)	17 (18.7)	2 (18.2)			3 (12.5)	17 (19.8)	2 (20.0)	
Current living area, n (%)				0.633	33.3				0.758	33.3				0.941
Urban	20 (76.9)	73 (83.0)	5 (71.4)			15 (83.3)	74 (81.3)	8 (72.7)			20 (83.3)	69 (80.2)	8 (80.0)	
Rural	6 (23.1)	15 (17.0)	2 (28.6)			3 (16.7)	17 (18.7)	3 (27.3)			4 (16.7)	17 (19.8)	2 (20.0)	
HIV+ status, n (%)				0.864	33.3				0.011	16.7				0.001
Yes	12 (46.2)	35 (40.2)	3 (42.9)			10 (55.6)	32 (35.2)	8 (80.0)			16 (66.7)	28 (32.6)	7 (77.8)	
No/do not know	14 (53.8)	52 (59.8)	4 (57.1)			8 (44.4)	59 (64.8)	2 (20.0)			8 (33.3)	58 (67.4)	2 (22.2)	

Appendix F **Dissemination leaflet**

Summary of the research findings and recommendations to research partners, and related stakeholders (Bahasa Indonesia).

Ringkasan penelitian

'THE CABE PROJECT'
A COMMUNITY-ENGAGED RESEARCH (CENR) TO EXPLORE ATTITUDES, BEHAVIOURS, AND EXPERIENCES (CABE) OF MEN WHO HAVE SEX WITH MEN (MSM) AND TRANSGENDER WOMEN (WARIA) IN BALI, INDONESIA.

'The Cabe Project'
Sebuah penelitian dengan komunitas untuk mengeksplorasi sikap, perilaku, dan pengalaman dari lelaki yang melakukan hubungan seks dengan lelaki (LSL) dan waria di Bali, Indonesia

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Latar belakang

Bali dikenal sebagai salah satu tujuan wisata terpopuler di dunia, sementara itu, Bali juga dikenal sebagai salah satu pulau yang terbuka dan menerima gay dengan bersahabat (gay-friendly island). Kementrian Kesehatan tahun 2012 memperkirakan jumlah lelaki melakukan

hubungan seksual dengan lelaki (LSL) sebanyak 1.2 juta dan lebih dari 14.000 menetap di Bali. Komisi AIDS Bali juga memperkirakan 650 waria tinggal di Bali. Penelitian sebelumnya melaporkan prevalensi HIV pada LSL di Bali adalah 18.7% dan pada transgender sebanyak 40.9%.

Survey terbaru pada komunitas LSL dan waria (Indonesia Sexual Health Survey (SekSI) study 2018) pada tahun 2018 mendapatkan peningkatan transmisi IMS dan HIV dikarenakan mempunyai banyak pasangan seksual dan hubungan seksual tanpa kondom. LSL yang berpartisipasi dalam penelitian ini melaporkan bahwa mereka berhubungan seksual dengan pasangan perempuan, pasangan tidak tetap dan pekerja seks komersil, memebrikan penekanan bahwa adanya risiko pada kesehatan di luar komunitas LSL juga (Bavinton, Mahendra et al. 2019). Sementara pada penelitian ini tidak diteliti tentang sikap dan pengalaman dari LSL yang menetap di Bali sehingga diperlukan penelitian yang bertujuan untuk mengeri tentang sikap, perilaku, dan pengalaman unik pada komunitas LSL dan waria di Bali.

Tujuan penelitian

Tujuan umum penelitian ini adalah untuk mengetahui sikap, perilaku dan pengalaman dari LSL dan waria di Bali sehingga bisa memberikan informasi untuk promosi kesehatan dan pelaksaanannya serta memberikan rekomendasi tentang peraturan terkait.

Tujuan spesifik dari penelitian ini adalah:

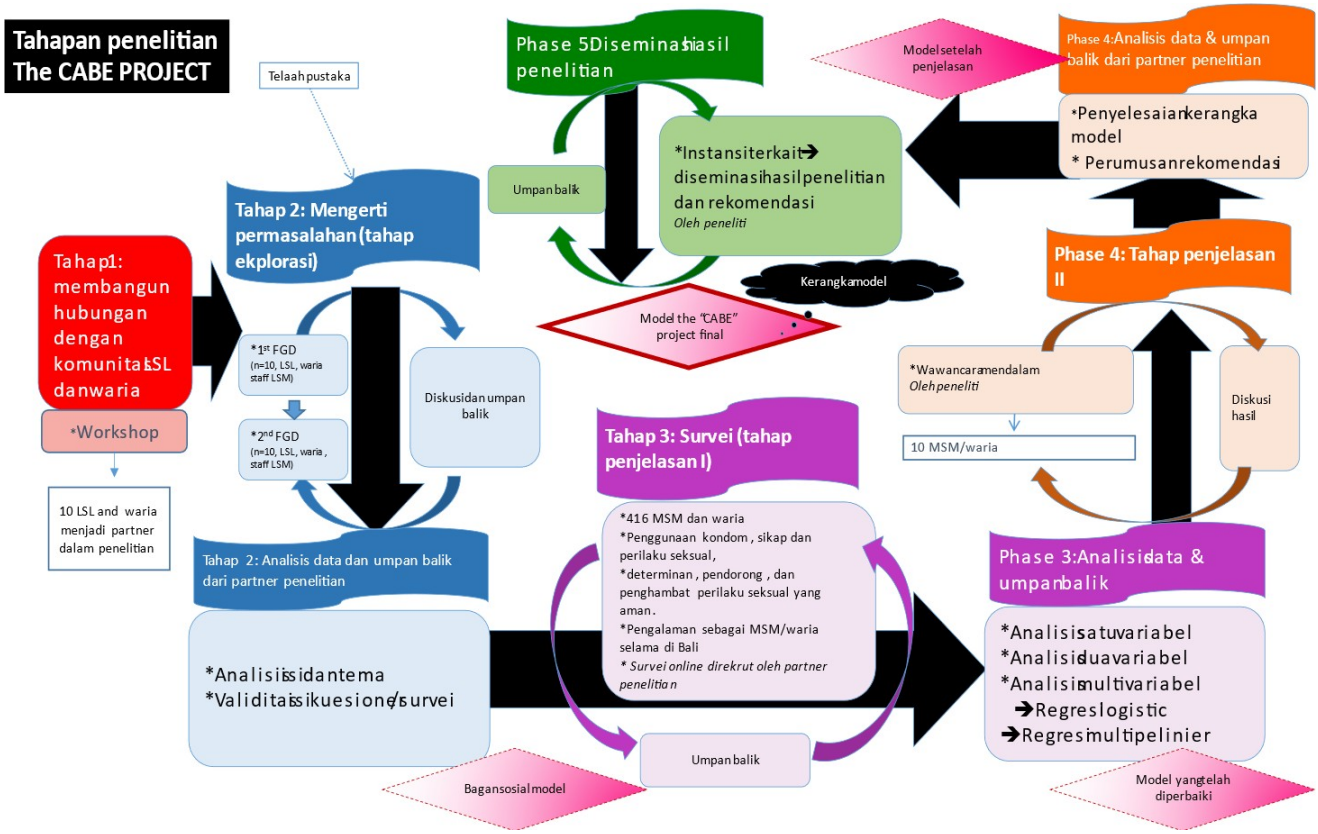
1. Menganalisis faktor-faktor yang mempengaruhi sikap dan perilaku terkait kesehatan seksual pada LSL dan waria di Bali
2. Mengidentifikasi faktor pendorong dan penghambat yang mempengaruhi perilaku seksual yang aman pada LSL dan waria di Bali.
3. Untuk membuat sebuah model sosial yang dapat memberikan konsep tentang sikap dan perilaku kesehatan seksual secara detail pada komunitas ini

4. Untuk menggali pengalaman LSL dan waria di Bali, termasuk hal-hal terkait aspek sosial budaya, stigma, diskriminasi, dan kesehatan mental (stress psikologis dan kebahagiaan).
5. Untuk memberikan rekomendasi intervensi atau strategi untuk meningkatkan perilaku seksual yang aman pada komunitas LSL dan waria di Bali.

Metode penelitian

Penelitian ini menggunakan community-engaged research (CEnR) (penelitian dengan melibatkan komunitas) sebagai partner dalam penelitian (10 orang partner penelitian) dan menggunakan design kuantitatif dan kualitatif secara bergantian yang terdiri dari 5 tahapan. Dua tahap pertama dan kedua adalah membangun hubungan dengan pertner penelitian dan diskusi grup terfokus (FGD) dengan anggota komunitas. Tahap ketiga merupakan survei yang berhasil merekrut 416 LSL dan waria asi Indonesia yang tinggal di Bali. Tahap keempat dan kelima wawancara mendalam dengan anggota LSL dan waria serta tahap diseminasi hasil penelitian. Gambaran singkat dari tahapan penelitian dapat dilihat pada Gambar 1.

Setelah data terkumpul, data survey dianalisis secara deskripsi dan inferensial (dengan logistik regresi dan regresi linier), serta analisis tematik digunakan untuk menganalisis data hasil FGD dan wawancara mendalam.



Gambar 1. Alur penelitian 'The Cabe Project

Hasil penelitian

Tahap 1

Tahap pertama penelitian adalah membangun hubungan dengan komunitas LSL dan waria dengan mengadakan workshop/pertemuan dengan 10 calon partner penelitian yang merupakan staff dari Lembaga swadaya masyarakat (LSM) yang dilaksanakan pada tanggal 6 Desember 2019. Dalam diskusi tersebut juga dilaksanakn brain storming (penampungan ide-ide) tentang masalah sosial dan kesehatan yang dihadapi oleh komunitas yang perlu ditanyakan saat survei.

Tahap 2

Dua kali FGD dengan komunitas LSL dan waria juga dilaksanakan setelah workshop dengan partner penelitian untuk lebih mengerti tentang permasalahan di komunitas. Beberapa tema baru didapatkan dari FGD ini seperti hambatan budaya, kehidupan di desa dan kota yang berbeda, pengetahuan komunitas tentang HIV, serta pekerjaan yang berisiko pada waria.

Tema-tema tersebut kemudian ditambahkan pada survei, kemudian survei yang sudah direvisi diberikan kepada semua peserta FGD untuk dilakukan validitas terhadap isi dan urutan pertanyaan dari survei tersebut. Setelah itu perbaikan terhadap survei/kuesioner kembali dilakukan.

Setlah FGD, pertemuan dengan 3 ahli kesehatan masyarakat dilakukan dengan pertemuan tatap muka ataupun secara daring bertujuan untuk mendapatkan masukan terkait data tambahan apa yang harus dikumpulan dalam survei yang akan bermanfaat bagi kesehatan masyarakat utamanya bagi komunitas LSL dan waria. Kemudian versi terakhir dari survey/kuesioner dihasilkan dan diujicobakan pada 10 partner penelitian sebelum disebarkan pada responden penelitian.

Tahap 3

Tahap in adalah tahapan survei secara daring dimana partner penelitian berhasil merekrut 416 LSL dan waria. Survei ini berlangsung dari bulan Juli sampai September 2020. Data hasil survei kemudian dianalisis menggunakan perangkat lunak SPSS dan dikirimkan serta dipublikasikan pada jurnal yang bereputasi. Beberapa hasil yang penting dari surevi ini adalah:

1. Tujuan 1a: untuk mengetahui faktor yang mempengaruhi sikap terhadap kesehatan seksual (dalam hal ini ditekankan pada sikap terhadap penggunaan kondom).
    a. Pada responden LSL, LSL yang bukan Hindu melaporkan lebih tidak mendukung pada skor sikap terhadap penggunaan kondom, sementara pengetahuan yang baik tentang kondom berhubungan secara bermakna dengan sikap lebih positif/mendukung terhadap penggunaan kondom. Stigma yang dialami oleh responden berhubungan dengan sikap negative/tidak mendukung terhadap penggunaan kondom serta responden yang merasa tidak yakin dengan keamanan hidup di Bali melaporkan sikap yang lebih positif/mendukung terhadap penggunaan kondom.
    b. Pada responden waria, mempunyai banyak pasangan seks komesial berhubungan secara signifikan dengan sikap negatif terhadap penggunaan kondom. Artinya semakin banyak pasangan komersial, semakin mempunyai sikap yang tidak mendukung dengan penggunaan kondom.
2. Tujuan 1b and 3: untuk mengetahui faktor-faktor yang berhubungan dengan perilaku terhadap kesehatan seksual (penggunaan kondom) serta membentuk suatu model sosial yang menggambarkan sikap dan perilaku terhadap kesehatan seksual pada komunitas LSL dan waria di Bali.

a. Sebagian besar LSL dan waria termasuk dalam kategori risiko sedang dalam perilaku penggunaan kondom (53.9% dan 49.6%).
b. Pada LSL, skor penggunaan kondom secara signifikan berhubungan dengan sikap terhadap penggunaan kondom, pengalaman terinfeksi IMS, status pernikahan, status pekerjaan, jumlah pasangan sekual tetap, pasangan tidak tetap/kasual dan pasangan komersial, serta pengalaman diskriminasi.
c. Pada waria, status HIV, status pernikahan, jumlah pasangan seksual tetap, tidak tetap dan komersial berhubungan secara bermakna dengan skor perilaku penggunaan kondom.
d. Sedangkan beberapa variable aktivitas seksual yang berhubungan dengan penggunaan kondom pada LSL diantaranya penggunaan alcohol dan obat-obatan terlarang, serta menanyakan calon pasangan tentang riwayat penggunaan narkotika suntik. Sedangkan pada waria, penggunaan narkoba, penggunaan kondom serta berhubungan seks segera setelah bertemu pasangan baru merupakan faktor yang berhubungan dengan penggunaan kondom.
e. Berbagai respon yang mendukung data survei juga ditemukan saat wawancara mendalam dengan komunitas LSL dan waria.

3. Tujuan 4: untuk mengetahui pengalaman LSL dan waria yang menetap di Bali termasuk aspek sosial budaya, stigma, diskriminasi, serta kesehatan mental (strees dan kebahagiaan) mereka.
   a. Level stigma yang tinggi dialami oleh 50.5% LSL dan 62.7% waria. Diskriminasi dilaporkan oleh 35.5% LSL dan 72.4% waria. LSL yang tidak diterima oleh keluarga atau keluarga tidak tahu tentang status mereka

sebagai LSL mempunyai level stigma yang lebih tinggi. LSL yang memiliki keluarga/pasangan 2 kali lebih besar mengalami diskriminasi dibandingkan mereka yang masih sendiri/single. LSL yang tidak beragama Hindu melaporkan 3 kali lebih besar untuk mengalami diskriminasi. Homoseksual and biseksual waria melaporkan lebih sedikit mengalami stigma. Kemungkinan mengalami diskriminasi dialami oleh waria yang berstatus sebagai pelajar.

b. Faktor-faktor yang berhubungan dengan stress psikologis pada komunitas LSL dan waria diantaranya berstatus sebagai pelajar, melaporkan level stigma yang tinggi, pernah mengalami diskriminasi, merasakan bahwa keadaan lebih baik saat belum adanya pandemic COVID-19, serta merasakan lebih tidak bahagia dari kebanyakan orang. Responden yang merasakan bahwa diri mereka lebih tidak bahagia daripada kebanyakan orang adalah mereka yang tinggal dengan pacar/pasangan, serta mereka yang mengalami stress psikologis yang tinggi.

Tahap 4

Tahap ini adalah unutk menjawab tujuan penelitian yang ke 2 dan ke 4, yaitu mengidentifikasi faktor pendorong dan penghambat perilaku seksual yang aman serta tambahan informasi terkait pengalaman LSL dan waria yang menetap di Bali. Tahap ini dilaksanakan dengan video-call dengan Whatsapp aplikasi pada bulan Maret 2021 dengan 10 MSM dan waria. Responden dipilih berdasarkan gender, pekerjaa, dan status pernikahan sehingga mendapatkan hasil yang bervariasi.

Tujuh tema diperoleh terkait pengalaman dari responden diantaranya pengalaman bullying dan tindak kekerasan, stigma dan diskriminasi, kesulitan dalam hidup sehari-hari, masalah tentang kondisi pekerjaan, masalah kesehatan mental dan

kebahagiaan, serta masalah terkait kehidupan seksual. Sementara terkait faktor pendorong dalam melakukan hubungan seksual yang aman, tema yang muncul diantaranya kesadaran akan risiko terinfeksi IMS dan HIV, kemampuan untuk melakukan negosiasi seksual yang aman, keterbukaan lingkungan sosial Bali terhadap LSL dan waria, ketersediaan dan terjangkaunya kondom, serta kesadaran akan dampak hubungan seksual yang tidak aman pada kesehatan di masa yang akan datang. Sedangkan beberapa faktor penhambat hubungan seksual yang aman diantarnya harga kondom yang tinggi dan ketersediaan kondom di beberapa tempat, stigma terhadap kondom dan orang yang membeli kondom, kesenangan dan kenikmatan tanpa menggunakan kondom, serta dalam pengaruh minuman beralkohol saat berhubungan seksual.

Kesimpulan dan rekomendasi

Penelitian ini berhasil merekrut responden dengan jumlah yang cukup bermakana dalam situasi pandemic COVID-19 melalui koordinasi dengan 10 partner penelitian secara daring. Banyak faktor yang ditemukan mempengaruhi sikap dan perilaku terhadap penggunaan kondom seperti agama, penegtahuan tentang IMS, status pernikahan, status pekerjaan, jumlah pasangan, dan stigma. Sedang faktor pendorong MSM dan waria melaksanakan perilaku seksual yang aman meliputi adanya perasaan mudah tertular IMS, kemampuan bernegosiasi seks yang aman, ketersediaan dan keterjangkauan haraga kondom, dan kewaspadaan terhadap dampak perilaku seks yang tidak aman terhadap Kesehatan. Sedangkan penghambat perilaku seks yang aman pada komunitas ini meliputi ketidaktersediaan kondom dan harga kondom, adanya

stigma terhadap kondom, kesenangan seksual tanpa menggunakan kondom, serta penggunaan alcohol. Pengalaman LSL dan waria selama menetap di Bali juga sangat bervariasi mulai dari di bulli saat di sekolah, mendapatkan kekerasan fisik saat bekerja sebagai pekerja seksual, stigma dan diskriminasi, perngaruh agama, budaya, dan keinginan dari keluarga sebagai seorang "laki-laki" dalaam keluarga dan masyarakat, kesulitan dalam kehidupan sehari-hari dan di lingkunngan pekerjaan yang memicu stress psikologi dan berkurangnya kebahagiaan, serta kehidupan seksual yang rumit. Beberapa rekomendasi yang bisa diberikan terkait hasil penelitian ini.

1. ***Untuk pemegang kebijakan***
    a. Menurunkan diskriminasi dengan membuat peraturan tentang pencegahan diskriminasi di sector industry/perusahaan sehingga semua karyawan saling menghormati satu sama lain tidak tergantung dari identitas seksual dan gender mereka sebagai salah satu cara menghormati hak asasi manusia.
    b. Stakeholder juga bisa bekerja sama dengan organisasi international tentang hak asasi manusia untuk bisa belajar dari negara lain yang telah berhasil mengadvokasi untuk mendekriminalisasi hubungan seksual sesama jenis dan pekerja seks komersial.
    c. Intervensi pemerintah terkait akses yang aman dan bersahabat pada pusat kesehatan masyarakat serta keterbukaan terhadap komunitas LSL dan waria untuk mengurangi stigma dan diskriminasi
    d. Pertimbangan kurikulum tentang kesehatan seksual dan reproduksi serta tentang hubungan secara komprehensif meliputi pengetahuan tentang keberagaman gender dan identitas seksual pada jenjang pendidikan yang lebih awal untuk mencegah intimidasi, kekerasan fisik, stigma dan diskriminasi di sekolah dan di kehidupan bermasyarakat.

e. Memberikan kesempatan pelatihan pada komunitas waria untuk mempelajari ketrampilan baru seperti tata niaga, tata boga, dan tata rias sehingga menurunkan tingkat kekerasan di kalangan ini karena mereka tidak lagi harus bekerja sebagai pekerja seks komersial di jalanan.
f. Advokasi agar waria memiliki identitas mereka di KTP dan kartu kesehatan sebagai gender ketiga/waria (bukan laki-laki atau perempuan).

2. Untuk LSM terkait

a. Pengetahuan terkait IMS bisa ditekankan kembali saat memberikan pre dan pos test HIV dengan memberikan beberapa contoh. Hal ini juga dapat dilakukan di klinik IMS saat diagnosis dan pengobatan IMS dan HIV atau saat melakukan penjangkauan di lapangan.
b. Distribusi kondom yang biasanya dilakukan saat penjangkauan di lapangan juga dapat diberikan dengan mempromosikan cara penurunan risiko terinfeksi IMS/HIV dengan cara-cara lain seperti membedakan aktivitas seksual dengan pasangan seksual tetap, tidak tetap atau pasangan komersial. Semakin banyak pasangan, sikap dan penggunaan kondom agar semakin baik. Beberapa contoh pengurangan risiko penularan IMS/HIV diantaranya tidak melakukan hubungan sexual, mansturbas sendiri atau dengan pasangan, berciuman dengan bibir dalam keadaan tertutup (dry kissing), lebih memilih manual sex (dengan tangan) dibandingkan oral atau anal sex) (Mimiaga, Reisner et al. 2013).
c. Menggagas sebuah program untuk mendapatkan strategi mendekatkan LSL dan waria dengan keluarga karena dukungan keluarga merupakan salah satu faktor yang bermakna dalam pengurangan stigma di komunitas ini.

3. ***Untuk komunitas LSL dan waria dan keluarga***

   a. Mengurangi stigma yang berhubungan dengan budaya dan lingkungan bisa dilakukan dengan mempunyai hubungan yang baik dengan tetangga, dan berpartisipasi aktif dalam kegiatan sosial di lingkungan tempat tinggal serta mempunyai pekerjaan yang tetap dan sesuai dengan ketrampilan (bukan sebagai pekerja seks komersial).

4. ***Untuk penelitian selanjutnya***

   a. Penelitian tentang hubungan agama dengan sikap terhadap penggunaan kondom dapat dilakukan dengan lebih menekankan pad faktor individual (ras, etnik), interpersonal (hubungan sosial dan sexual), dan faktor komunitas/sosial (hukum dan kebijaksanaan) sehingga dapat memberikan rekomendasi yang lebih spesifik.
   b. Menggali beberapa solusi untuk mengurangi timbulnya masalah kesehatan mental pada masa kritis dengan berbagai cara dengan spesifik sasaran. Seperti memulai adanya 24 jam layanan telepon bantuan yang bisa diakses tanpa mengenal restriksi.
   c. Penelitian tentang faktor yang potensial dalam bidang pekerjaaan juga dapat dilakukan pada komunitas ini sebagai solusi pada saat krisis untuk dapat memberikan solusi yang lebih baik yang berpengaruh terhadap kebijakan dan pelaksanaanya.

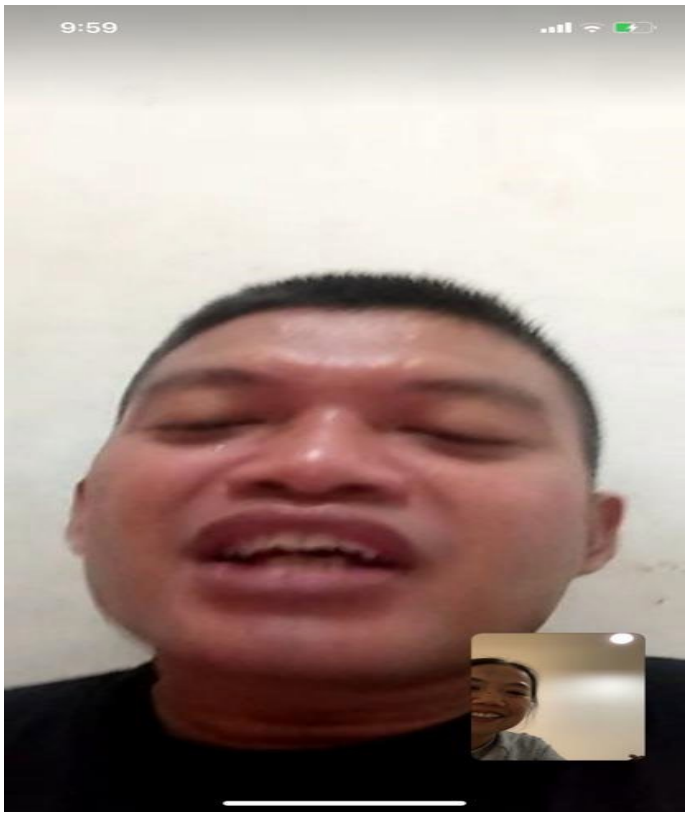
==========Terima kasih=========

Appendix G Project in pictures

Picture 1. Research partners

Picture 2. Phase 1 Partnership building

Picture 3. Meeting with public health expert



Picture 4. Online in-depth interview

Picture 5. Online in-depth interview

Appendix F Copyright permissions

1. Septarini NW, Hendriks J, Maycock B, Burns S. Methodologies of stigma-related research amongst men who have sex with men (MSM) and transgender people in Asia and the Pacific low/middle income countries (LMICs): A scoping review. Frontiers in Reproductive Health. (2021):73

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3. Septarini, N. W., Hendriks, J., Maycock, B., & Burns, S. (2021). Psychological Distress and Happiness of Men Who Have Sex with Men and Transgender People During the Coronavirus Disease-19 Pandemic: Is There a Need for Public Health Policy Intervention? Frontiers in Public Health, 1350