

Experiences of conflict, non-acceptance and discrimination are associated with poor mental well-being amongst LGBTQ-identified individuals in Singapore

Mental wellbeing of LGBTQ people in Singapore

625

Gerard W. Toh, Wee Ling Koh, Jack Ho, Jackson Chia, Ad Maulod, Irene Tirtajana, Peter Yang and Mathia Lee
Independent, Singapore, Singapore

Received 15 October 2021
Revised 6 June 2022
10 August 2022
17 September 2022
Accepted 7 November 2022

Abstract

Purpose – Health disparities affecting lesbian, gay, bisexual, transgender and queer (LGBTQ) populations have been reported in many countries. For Singapore, no large quantitative studies on mental health and well-being in the local LGBTQ community have been published. The authors conducted a community-based survey (National LGBT Census Singapore, 2013; NLCS2013) that covered a comprehensive set of demographic, social and health indicators. Here, the authors investigated mental health status and its correlates in 2,350 LGBTQ individuals within the NLCS2013 sample.

Design/methodology/approach – The NLCS2013 was an anonymous online survey conducted amongst self-identified LGBTQ adults (aged ≥ 21 years) residing in Singapore. The survey included the World Health Organisation Well-being Index (WHO-5) as a measure of mental well-being, with low WHO 5 scores ($<13/25$) indicating poor mental well-being. The authors analysed relationships between low WHO-5 score and a range of respondent characteristics using multivariate logistic regression.

Findings – Strikingly, 40.9% of 2,350 respondents analysed had low WHO-5 scores, indicating poor mental well-being. Parental non-acceptance, experience of conflict at home and bullying/discrimination in the workplace or educational environments were all significantly associated with poor mental well-being. Conversely, community participation appeared protective for mental well-being, as respondents who participated in LGBTQ community organisations or events were less likely to have poor mental well-being than non-participants.

Originality/value – The NLCS2013 represents one of the first broad-based efforts to comprehensively and quantitatively capture the sociodemographic and health profile, including mental health status, within Singapore's resident LGBTQ population. These findings affirm the need to address the mental health needs of LGBTQ individuals in Singapore and to foster safe spaces and allyship.

Keywords Health disparity, Mental health, Personal health, WHO-5, Sexual and gender minorities, Resilience, Family conflict, Singapore

Paper type Research paper

© Gerard W. Toh, Wee Ling Koh, Jack Ho, Jackson Chia, Ad Maulod, Irene Tirtajana, Peter Yang and Mathia Lee. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>

The authors would like to thank all the individuals who participated in the research; Pink Dot SG, OogaChaga, Sayoni and all others who helped to promote the survey; and The Greenhouse and Brahm Centre for supporting open access for this publication.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.



Equality, Diversity and Inclusion:
An International Journal
Vol. 42 No. 5, 2023
pp. 625-655
Emerald Publishing Limited
2040-7149
DOI 10.1108/EDI-10-2021-0270

Introduction

Mental health and mental well-being are widely recognised as integral to public health and sustainable development, being inextricably linked with physical and overall health outcomes (Prince *et al.*, 2007). In recognition of this, the United Nations 2030 Agenda for Sustainable Development includes a commitment to promoting both “*physical and mental health and well-being . . .*” (United Nations Development Programme, 2015). Yet, poor mental health remains a leading cause of morbidity and disability worldwide and was one of the top 10 causes of disability-adjusted life-years for people aged 10–49 years in 2019 (GBD Diseases and Injuries Collaborators, 2020). Moreover, since the start of the coronavirus disease 2019 (COVID-19) pandemic in 2020, studies have documented worsened mental well-being in populations worldwide (Buspavanich *et al.*, 2021; Covid-19 Mental Disorders Collaborators, 2021).

Mental and physical health disparities affecting lesbian, gay, bisexual, transgender and queer (LGBTQ) minority populations have been widely documented. Notably, LGBTQ individuals may be at higher risk of depression and poor mental well-being than the general population (Baptiste-Roberts *et al.*, 2017; Moagi *et al.*, 2021; Valentine and Shipherd, 2018). It is recognised that these mental health disparities are closely linked to experiences of stress across multiple life domains, including the family, educational and workplace environments, wherever an individual’s identity as a member of a sexual or gender minority comes into conflict with the dominant social environment. The majority of the extant research on minority stress and its consequences for impact on LGBTQ mental health has come from studies in North America and Europe. Little or no published data are available for many Asian countries, including Singapore. This lack of quantitative information makes it challenging for local LGBTQ communities to comprehensively articulate their unmet health needs and hinders health advocacy efforts.

The National LGBT Census Singapore [NLCS2013 (NLCS Research Network, 2016)] was an exploratory study conducted in 2013 to address the dearth of quantitative information about Singapore’s LGBT population. The NLCS2013 sought to survey the needs and status of self-identified LGBT Singapore citizens and residents in the domains of health, housing, education, employment and family. To the best of our knowledge, the NLCS2013 was then the first effort to investigate a comprehensive range of health indicators and sociodemographic factors in multiple subgroups within the LGBTQ community in a developed Asian country. The NLCS2013 data thus provided a quantitative and comprehensive description of health status, including mental health, amongst LGBT-identified individuals in Singapore. In the present work, we address one key sub-domain within the NLCS2013, that of mental health and well-being. We characterised the mental health status of individuals in the community using the WHO-5, a brief, well-validated questionnaire that measures subjective well-being and risk of depression (Topp *et al.*, 2015; World Health Organization, 1998). We then analysed this status with respect to sociodemographic, psychosocial and relational characteristics to better understand determinants of mental health and well-being amongst LGBT-identified individuals in our local setting.

Literature review

Minority stress and mental health disparities

The minority stress model and related conceptual frameworks (Goldbach and Gibbs, 2017; Hendricks and Testa, 2012; Meyer, 2003) represent a prominent theoretical orientation that formulates how stigma, prejudice and discrimination related to an individual’s minority group status may become a stressor that contributes to poor mental health. These frameworks broadly characterise stressors as external and internal, or distal and proximal, with experiences of prejudice and discrimination being examples of the former and identity concealment/non-disclosure and internalised homophobia being examples of the latter. Numerous studies have linked experiences of discrimination, stigma, bullying, abuse and

internalised homophobia with higher levels of psychological distress and morbidity in LGBTQ individuals (Alvarez-Galvez and Salvador-Carulla, 2013; Hatzenbuehler *et al.*, 2009; Hatzenbuehler *et al.*, 2010; Hatzenbuehler and Pachankis, 2016; Lea *et al.*, 2014; Mays and Cochran, 2001; McConnell *et al.*, 2018; Tan *et al.*, 2021c). The minority stress frameworks also encompass stress-ameliorating factors such as social support, community engagement and sense of belonging, which are understood as critical mechanisms that help protect against poor mental health outcomes (Meyer, 2003). A range of studies point to the roles of social interaction, peer support and participation in community groups in promoting mental health and resilience, reducing depression risk and moderating the effects of stigma and other negative experiences (Bockting *et al.*, 2013; Fish *et al.*, 2019; Fredriksen-Goldsen *et al.*, 2013; Garcia *et al.*, 2020; McLaren *et al.*, 2013; Roberts and Christens, 2021).

Being LGBTQ in Singapore: sociocultural context and lived experiences

Singapore is a densely-populated multi-ethnic city-state in Southeast Asia with a total population of 5.45 million and a land area of 733 km² (Singapore Department of Statistics, 2021). With respect to the racial/ethnic group categories customarily used in Singapore, around three-quarters of the resident population are Chinese, with Malay (14%) and Indian (9%) and other (3%) ethnic groups accounting for the remainder. In terms of attitudes towards LGBTQ issues, Singapore civil society is generally regarded as conservative. A 2018 survey on religion, morality and conservatism in Singapore reported that 64% of respondents viewed same-sex relationships as “always”/“almost always” wrong, down from 80% of respondents in an earlier 2013 wave of the survey (Mathews *et al.*, 2019). These and earlier studies (Detenber *et al.*, 2013; Lim, 2002) suggest gradual shifts in attitudes on LGBTQ issues over the last few decades, although the overall outlook remains conservative. Results from a 2022 survey indicate further shifts in public attitudes on LGBTQ issues but also reveal increasing polarisation of views, notably across age groups (Ipsos, 2022a, b).

In August 2022, amid these shifts, Singapore’s Prime Minister, Lee Hsien Loong, announced the government’s intention to repeal Section 377A of the Penal Code, a law criminalising homosexual relations between consenting adult males (Lee, 2022). At the same time, the government clarified its intention to preserve heteronormative policies relating to marriage, public housing, education, media and potentially other domains (Tham, 2022). LGBTQ groups expressed relief at the proposed move to eliminate the potential for criminal prosecution of LGBTQ persons who decide to come out in order to access LGBTQ-focussed services or to seek acceptance within their families, social circles, workplaces or schools (Iau, 2022a). Leaders from the major religious communities in Singapore, including the Christian, Muslim, Buddhist, Hindu and other communities, voiced their support for preserving heterosexual marriage laws and raised concerns about the repeal of Section 377A, but called for compassion and tolerance amongst their respective communities (Iau, 2022a, b). On the other hand, Singapore’s Association of Small and Medium Enterprises affirmed that the business community welcomed and supported the repeal of Section 377A (Iau, 2022a). This mix of responses to the proposed legislative change illustrates the wide range of views and the variability in acceptance that LGBTQ individuals in Singapore may experience, depending on the communities or organisations to which they belong.

LGBTQ individuals in Singapore commonly encounter negative reactions from sources ranging from family members or friends/acquaintances to members of the general public (Oogachaga Counselling and Support, 2012; Sayoni, 2011, 2018, 2019; TransgenderSG *et al.*, 2020a). For example, in a 2012 survey on the impact of homophobia and transphobia on LGBTQ individuals in Singapore, 60% of respondents reported experiencing one or more forms of discrimination or abuse related to their sexual orientation or gender identity (SOGI) (Oogachaga Counselling and Support, 2012). Although this most often took the form of verbal abuse, some respondents (especially transgender individuals) also reported experiences of threats, physical

aggression and sexual attacks or harassment. LGBTQ individuals in Singapore encounter SOGI-related discrimination in a range of social spaces, including workplaces, schools and other public or private institutions (Oogachaga Counselling and Support, 2012; Sayoni, 2011, 2018, 2019; Tan *et al.*, 2021a; TransgenderSG *et al.*, 2020a). These reports illustrate common sources of minority stress within the immediate environment, which in turn is shaped by the wider social environment. Research has shown that the effects of individual-level minority stressors may be compounded by those of structural or institutional stigma and discrimination (Hatzembuehler *et al.*, 2009, 2010). The lack of SOGI-specific anti-discrimination legislation, the legal status of same-sex partnerships, barriers to gender marker change for transgender persons and restrictive media content guidelines, are widely cited as examples of these structural or institutional issues in the Singapore context. The impact of these issues on LGBTQ individuals has been detailed in civil society stakeholder reports submitted for the most recent cycle of the United Nations Human Rights Council Universal Periodic Review on Singapore (IndigNation *et al.*, 2020; Pink Dot SG and Oogachaga, 2020; TransgenderSG *et al.*, 2020b).

Taken together, published and unpublished research shows that LGBTQ minority individuals in Singapore encounter stressors related to their SOGI that their non-LGBTQ peers do not (IndigNation *et al.*, 2020; Oogachaga Counselling and Support, 2012; Pink Dot SG and Oogachaga, 2020; Sayoni, 2011, 2018; Tan, 2019; Tan *et al.*, 2020; TransgenderSG *et al.*, 2020a; TransgenderSG *et al.*, 2020b). Although there is a growing body of published research addressing LGBTQ issues in Singapore from sociocultural, behavioural, legal, political, economic, human resource management, social work and media studies perspectives, for example (bin Ibrahim and Barlas, 2021; Chua, 2014; Detenber *et al.*, 2014; Detenber *et al.*, 2013; Goh, 2008; Lim *et al.*, 2018; Lim and Ang, 2021; Maulod, 2021; Oswin, 2010; Radics, 2015; Ramdas, 2020; Tan, 2015; Tan, 2011; Tan and Lee, 2007; Teh *et al.*, 2015; Yue, 2007), there is surprisingly little published research on issues related to LGBTQ health, particularly mental health. Consequently, the impact of SOGI-related stressors on mental, physical or other dimensions of health in the local LGBTQ population is not well characterised, at least within the published literature. Older research publications focussed on the developmental and psychological profiling of homosexual and transsexual individuals in Singapore (Kok *et al.*, 1991; Tsoi, 1990, 1992). Recent published health research remains relatively scarce and much of it has focussed on sexual health or alcohol/substance use amongst gay, bisexual and other men who have sex with men (Choong *et al.*, 2012; Chua *et al.*, 2013; Ong *et al.*, 2021; Tan *et al.*, 2021a, b, c; Wong *et al.*, 2011). Outside of academia, surveys and interview-based studies conducted by regional and local LGBTQ organisations have highlighted some of the health challenges faced by LGBTQ individuals in Singapore (Fridae, 2010; Oogachaga Counselling and Support, 2012; Sayoni, 2011, 2018; TransgenderSG *et al.*, 2020a).

Mental health and well-being in Singapore

Published research on correlates and determinants of mental well-being as well as mental health and morbidity in Singapore has largely focussed on the general population (Chong *et al.*, 2012b; Ho, 2015; Picco *et al.*, 2017; Subramaniam *et al.*, 2014, 2019; Vaingankar *et al.*, 2013, 2018). A 2013 survey of Singapore youth (defined as those aged 16–35 years) reported that well-being in this population was significantly correlated with self-rated health, marital/relationship status, educational attainment and personal or combined parental income (Ho, 2015). Within adult community samples studied, ethnic group and age were reported to be correlated with positive mental health (Vaingankar *et al.*, 2013, 2018). Periodic national-level health survey programmes include selected mental health measures and provide limited trend data by age, gender and ethnic group. However, these datasets do not include information on respondents' SOGI, precluding use of these data to address similar research questions in LGBTQ minority populations. Some local LGBT-focussed mental health research has been published in recent

years, analysing associations between mental health outcomes (depression severity, suicidal ideation) and factors such as experiences of stigma or homophobia in gay, bisexual and queer men (Ong *et al.*, 2021; Tan *et al.*, 2021a, b, c). However, published data on other groups remain scarce or absent. Our knowledge of the physical and mental health status and needs of the LGBTQ population in Singapore thus remains highly fragmented. This exacerbates the challenges of needs assessment and resource planning that local community organisations face.

Methods

Study design, survey population and data collection

The NLCS2013 was a cross-sectional, anonymous online survey conducted between May and August 2013. An informal community-based participatory approach was adopted through consultation with community groups and service organisations. The design and delivery of the survey questionnaire was informed by consultation with the three largest LGBT non-profit organisations in Singapore at the time (Pink Dot SG, Sayoni and Oogachaga). Prior to dissemination, the questionnaire was reviewed by these organisations.

The survey was publicised by various LGBT organisations through their websites, social media platforms and email newsletters, which provided the link to the survey website. Survey respondents were informed of the nature of the survey, its objectives, intended uses and the partner organisations on the landing page of the survey. No financial incentive was provided for either attempting or completing the online survey. Before beginning the survey, respondents provided informed consent for their responses to be analysed and published in an aggregate, non-identifiable manner. Survey responses were anonymised from the point of collection as respondents' Internet Protocol address (IP address) were not collected and no tracking links were used.

Respondents answered up to 54 questions with conditional branching based on their responses. The questionnaire included questions used in recent national-level population health surveys, as well as custom questions developed in consultation with local community organisations and drawing on the published literature. As a broad-ranging survey covering diverse areas of life, it was not feasible to include detailed instruments for every possible research question. We sought to limit respondent burden by prioritising questions that would support comparisons with earlier national-level health surveys, including a clinically validated index of mental well-being. Based on a pre-survey pilot, the questionnaire was estimated to take 20–40 min to complete.

For the present analysis, we included respondents who met three criteria: Singapore Citizens/permanent residents or non-residents living in Singapore, self-identified as LGBT and aged 21 years or older. Non-residents of Singapore, individuals who identified as cisgender and heterosexual and individuals aged below 21 were excluded.

Measures

Demographic and socioeconomic characteristics. Respondents provided information on their age, ethnicity, gender identity, sexual orientation, relationship status and current employment. Three indicators of socioeconomic status (SES) were used: personal monthly income, highest education level attained and current housing type.

Gender identity categories included male, female, transgender (male-to-female), transgender (female-to-male), intersex and "Others". A six-category measure of sexual orientation was used (homosexual, mostly homosexual, bisexual, mostly heterosexual, heterosexual, unsure/other).

Psychosocial and relational characteristics. Respondents were asked about the extent to which they revealed their gender and sexual identity to family and/or friends. We used Likert scales for ordinal responses and included "unsure" and "not applicable" response options.

Three indicators were used to characterise common stressors in the home environment: Parental non-acceptance of LGBT identity (5-point Likert scale); recent conflict at home, investigated using the question “*In the past 6 months, have you experienced conflict, harassment, threats or felt unsafe at home?*”; homelessness related to conflict at home was investigated using 2 questions, “*Have you ever been homeless (e.g. stayed in a public space, temporarily sheltered by others, etc.)?*” and “*Have you ever left home due to conflict, harassment, threats or feeling unsafe? – Yes, by my own choice; Yes, I was made/asked to leave; No*”.

Stressors in workplace and educational institutions were explored by asking respondents whether they had experienced or witnessed bullying or discrimination related to LGBT identity in the workplace (working respondents) or in educational institutions (full-time students) within the previous 12 months. Bullying/discrimination was defined as “*verbal abuse, non-verbal bullying (e.g. being gossiped about or ostracised), physical or sexual assault, being asked to change appearance or behaviour, being excluded from job opportunities or dismissed from employment*”.

Social participation was investigated by asking about the types of LGBT-oriented groups, events or businesses the respondent had ever participated in or patronised.

WHO-5 well-being index. The World Health Organisation Well-being Index (WHO-5), a widely used brief standard measure in public health, is a self-report global rating scale that measures subjective positive well-being related to quality of life (Bech *et al.*, 2003; Topp *et al.*, 2015; World Health Organization, 1998). Lack of positive well-being is an indicator of possible depression and the WHO-5 has been validated as a population screening tool for depression in a range of general adult, adolescent and paediatric populations, as well as an outcome measure for health interventions (Henkel *et al.*, 2003; Krieger *et al.*, 2014; Lowe *et al.*, 2004; Sischka *et al.*, 2020; Topp *et al.*, 2015). The WHO-5 is considered to have high clinometric validity (Hall *et al.*, 2011), as it can be used in many different settings, irrespective of the presence or absence of comorbid conditions.

The WHO-5 is a simple, non-invasive tool comprising five positively-worded statements: “I have felt cheerful and in good spirits”, “I have felt calm and relaxed”, “I have felt active and vigorous”, “I woke up feeling fresh and rested” and “My daily life has been filled with things that interest me”. Responses are scored on a 5-point Likert scale: “All of the time”; “Most of the time”; “More than half of the time”; “Less than half of the time”; “Some of the time”; “At no time”. The recall period is two weeks. The range of scores is 0–25 (worst to best possible well-being), with higher scores indicating better well-being. A score of <13 of 25 (<50%) indicates impairment of well-being severe enough to warrant diagnostic follow-up, including clinical screening for depression (Krieger *et al.*, 2014; Topp *et al.*, 2015). The WHO-5 has high sensitivity (>80%) and specificity (>80%) for population screening of depression using the cut-off score of 50% (Topp *et al.*, 2015). The use of the WHO-5 in our survey also permitted some comparisons with data from the general population, since earlier national population health surveys included this tool and analysed the data with respect to the same cut-off. In this sample, the WHO-5 index showed excellent internal consistency (Cronbach’s alpha >0.9) and a one-factor structure was verified by confirmatory factor analysis.

Data handling and statistical analysis. Prior to analysis, the raw dataset was inspected and cleaned to resolve quality issues, such as duplicate responses. Sociodemographic and psychosocial characteristics within the sample were analysed descriptively. Categorical variables were summarised using counts and percentages. The percentage of respondents with low WHO-5 (<13 of 25) was determined for the overall sample and by subgroups defined by sociodemographic and psychosocial characteristics. Associations between categorical variables were identified using the chi-squared test or Fisher’s exact test. Multivariable logistic regression was used to evaluate relationships between low WHO-5 and sociodemographic or other factors. Odds ratios adjusted for age (AORs) were presented,

along with the corresponding 95% confidence intervals (CIs). There was no imputation of missing data. All analyses were performed using IBM SPSS Statistics version 20 (IBM, Armonk, New York, USA) and R version 2.15.3 (R Core Team, 2013).

Results

Sample sociodemographic characteristics

A total of 3,119 respondents completed the online questionnaire and were screened for eligibility based on the following criteria: Singapore Citizens/Permanent Residents or non-residents living in Singapore; self-identified as LGBT; aged 21 years or older. The present analysis included 2,350 valid responses from individuals who met all these inclusion criteria.

Table 1 presents the sociodemographic characteristics of the 2,350 respondents included in this analysis. Mean age was 30.7 (SD = 8.1) years; 85.9% ($n = 2017$) of respondents were below 40 years of age. There was a higher proportion of male (61.1%, $n = 1,435$) than female (36.3%, $n = 854$) respondents. A small percentage identified as transgender, intersex or of other genders (2.6%, $n = 61$). Most respondents were Chinese (80.0%, $n = 1881$); the remainder were Malay (6.3%, $n = 148$), Indian (4.5%, $n = 105$) or of other ethnic groups (9.2%, $n = 216$).

Most respondents had received tertiary education (69.6%, $n = 1,194$); 26.4% ($n = 453$) had at least post-secondary education and 4.0% ($n = 68$) received secondary level education or below. Close to half of the respondents (45.6%, $n = 1,072$) were in a same-gender relationship or established partnership (e.g. civil union or marriage). The remainder were single (44.7%, $n = 1,051$), in a relationship or marriage with another gender (4.1%, $n = 96$) or in other types of relationships (5.6%, $n = 131$). When asked about social participation, 95.4% ($n = 2,242$) of respondents reported participating in at least 1 type of LGBT-oriented group, activity or business, with LGBT-oriented online networking platforms being most common (65.6%, $n = 1,542$).

With respect to the national population profile from the Singapore Census of Population 2010 (Department of Statistics, 2010), survey respondents on average were younger, of higher SES and higher education levels. The proportion of males was higher than the national average, whereas the proportions of Malay- and Indian-identified individuals were lower. It should be noted that because basic quantitative data for Singapore's LGBT-identified resident population (e.g. population size and characteristics) are lacking, it is unknown whether these differences reflect true differences in population proportions or are related to other factors.

Association of WHO-5 scores with demographic and socioeconomic characteristics

Within this sample, the mean WHO-5 score was 13.5 (SD 5.4), very close to the threshold (<13 of 25) that indicates impaired mental well-being warranting clinical screening for depression. Strikingly, 40.9% ($n = 961$) of NLCS2013 respondents reported a WHO-5 score of <13 out of 25 (Table 1), indicating poor mental well-being. Table 2 shows the breakdown of percentages of respondents with low WHO-5 (<13) by sociodemographic subgroups. Age was strongly associated with WHO-5 score ($p = 0.0016$), with the percentage of those with low WHO-5 being highest amongst the youngest respondents. Low WHO-5 score was also more common amongst respondents who were transgender/intersex/of other genders (54.1%, $n = 33$), in relationships or established partnerships with another gender (49.0%, $n = 47$), single (46.3%, $n = 487$) and those who identified as "Bisexual" (48.3%, $n = 113$) or "Mostly heterosexual" (50.0%, $n = 37$). Consistent across all three socioeconomic indicators (housing type, education level and monthly income), low WHO-5 was more common amongst individuals with lower SES.

Variable	Total analysed (N = 2,350)
<i>Age (years)</i>	
Mean (SD)	30.7 (8.1)
Median (Q1, Q3)	29 (24, 35)
21–29	1,268 (54.0)
30–39	749 (31.9)
40–49	254 (10.8)
>50	79 (3.4)
<i>Gender identity</i>	
Male	1,435 (61.1)
Female	854 (36.3)
Transgender, intersex, other gender	61 (2.6)
<i>Sexual orientation</i>	
Homosexual	1,555 (66.2)
Mostly homosexual	398 (16.9)
Bisexual	234 (10.0)
Mostly heterosexual	74 (3.1)
Other or unsure	89 (3.8)
<i>Ethnic identity</i>	
Chinese	1881 (80.0)
Malay	148 (6.3)
Indian	105 (4.5)
Other	216 (9.2)
<i>Relationship status</i>	
Single	1,051 (44.7)
Same-gender relationship or civil union/marriage	1,072 (45.6)
Opposite-gender relationship or civil union/marriage	96 (4.1)
Other ²	131 (5.6)
<i>Housing type</i>	
Public housing 1–3 room	366 (15.7)
Public housing (4–5 room)	1,179 (50.7)
Private property	706 (30.4)
Other	75 (3.2)
<i>Education level</i>	
Tertiary (university and post-graduate)	1,194 (69.6)
Post-secondary	453 (26.4)
Secondary or below	68 (4.0)
<i>Monthly income (Singapore dollars)</i>	
<2000	290 (17.0)
2001–4,000	640 (37.5)
4,001–6,000	367 (21.5)
>6,000	410 (24.0)
<i>Current employment status</i>	
Local organisation employee	846 (48.2)
Multinational organisation employee	484 (27.5)
Self-employed or business owner	238 (13.5)
Seeking employment	147 (8.4)
Retired, homemaker, or intentionally not working ²	42 (2.4)

Table 1.
Characteristics of the
survey
respondents
(N = 2,350)

(continued)

Table 1.

Variable	Total analysed (N = 2,350)
<i>Social participation</i>	
Community groups	556 (23.7)
Community events	1,293 (55.0)
Parties, clubs, bars (LGBT-oriented)	1,475 (62.8)
Saunas or spas (LGBT-oriented)	605 (25.7)
Online networking platforms (LGBT-oriented)	1,542 (65.6)
Only online networking platforms (LGBT-oriented)	247 (10.5)
At least 1 type of LGBT-oriented group, activity, or business	2,242 (95.4)
<i>WHO-5 score (range: 0 to 25)</i>	
Mean (SD)	13.5 (5.4)
Median (Q1, Q3)	14 (10, 18)
WHO-5 score <13 of 25	961 (40.9)
WHO 5 score ≥13 of 25	1,389 (59.1)

Note(s): ¹ Includes individuals in open or multiple relationships, separated/divorced/widowed from a marriage/civil union, other

² Includes retirees, homemakers and those intentionally not working

Association of WHO-5 scores with non-acceptance of LGBT identity and conflict in the home and workplace

Experience of non-acceptance and conflict in home/family environment. Less than a quarter (22.2%, $n = 513$) of respondents had revealed their LGBT identity to “most/all friends and family”. Around one-third (38.2%, $n = 883$) had revealed their LGBT identity to “some friends but no family”, 34.9% ($n = 807$) to “some friends and family” and 4.8% ($n = 110$) to neither friends nor family (Supplementary Table S1). The extent to which respondents revealed their LGBT identity showed an inverse relationship with low WHO-5.

Respondents who had not revealed their LGBT identity to any friends or family were more than twice as likely to have a low WHO-5 score than respondents who had revealed their LGBT identity to most or all friends and family (AOR 2.739 [95% CI: 1.798 – 4.172], $p < 0.0001$) (Figure 1). Relative to respondents who had revealed their identity to only some friends or family, or to some friends but not family, respondents who had not revealed their identity to friends or family had higher odds of low WHO-5 (AOR 1.597 [95% CI: 1.261 – 2.022] and AOR 1.771 [95% CI: 1.402 – 2.237], respectively, $p < 0.0001$ for both).

We asked respondents about the degree of acceptance their parents had towards their LGBT identity. A substantial proportion of respondents (40.4%, $n = 949$) reported that they were unsure about the degree of parental acceptance, and 3.9% ($n = 92$) indicated this was not applicable. Of the remaining 1,039 respondents, half (53.2%, $n = 697$) had parents who were “Accepting” or “Neutral”. Lack of parental acceptance was strongly associated with low WHO-5 scores ($p < 0.001$). Compared with respondents who had accepting parents, those with non-accepting parents had significantly greater odds of low WHO-5 (AOR 1.744 [95% CI: 1.355 – 2.244], $p < 0.0001$) (Figure 1).

Recent conflict at home (experiencing conflict, harassments, threats or feeling unsafe at home in the previous 6 months) was reported by 8.5% ($n = 200$) of respondents (Supplementary Table S1). Lifetime homelessness related to such conflict at home was reported by 17.8% ($n = 418$) of respondents. Specifically, 5.5% ($n = 130$) of respondents had “ever been homeless”, whilst 13.0% ($n = 305$) had ever chosen to leave home and 3.4% ($n = 79$) had “ever been asked to leave”. Both recent conflict ($p < 0.0001$) and lifetime homelessness related to conflict ($p = 0.001$) were highly significantly associated with the degree of parental acceptance of respondents’ LGBT identity (Supplementary Table S3).

Variable	WHO-5 ≤13 N (%)	p-value ¹	Age-adjusted OR (95% CI) ²	p-value ³
<i>Age (years)</i>		0.0016		
21–29 years	534 (42.1)		1	
30–39 years	312 (41.7)		1.077 (0.904, 1.283)	0.408
40–49 years	99 (39.0)		1.730 (1.032, 2.898)	0.038
>50 years	16 (20.3)			
<i>Gender identity</i>		0.0399		
Male	566 (39.4)		1	
Female	362 (42.4)		1.077 (0.904, 1.283)	0.408
Transgender, intersex, other gender	33 (54.1)		1.730 (1.032, 2.898)	0.038
<i>Sexual orientation</i>		0.0079		
Homosexual	598 (38.5)		1	
Mostly homosexual	171 (43.0)		1.146 (0.914, 1.438)	0.238
Bisexual	113 (48.3)		1.419 (1.073, 1.875)	0.014
Mostly heterosexual	37 (50.0)		1.519 (0.950, 2.429)	0.081
Other/unsure	42 (47.2)		1.339 (0.870, 2.062)	0.185
<i>Ethnic identity</i>		0.0018		
Chinese	786 (41.8)		1	
Malay	65 (43.9)		1.058 (0.704, 1.590)	0.787
Indian	47 (44.8)		0.825 (0.496, 1.372)	0.459
Other	63 (29.2)		0.578 (0.402, 0.833)	0.003
<i>Relationship status</i>		<0.0001		
Single	487 (46.3)		1	
Same gender relationship or established partnership	373 (34.8)		0.639 (0.535, 0.762)	<0.0001
Opposite gender relationship or established partnership	47 (49.0)		1.135 (0.746, 1.726)	0.554
Other ⁴	54 (41.2)		0.883 (0.607, 1.284)	0.514
<i>Housing type</i>		0.0066		
Public housing (1–3 room)	160 (43.7)		1	
Public housing (4–5 room)	505 (42.8)		0.921 (0.725, 1.169)	0.498
Private property	249 (35.3)		0.706 (0.545, 0.915)	0.008
Other	31 (41.3)		0.878 (0.530, 1.456)	0.615
<i>Education level</i>		0.0001		
Tertiary	457 (38.3)		1	
Post-secondary	220 (48.6)		1.425 (1.141, 1.779)	0.002
Secondary or below	36 (52.9)		1.929 (1.177, 3.162)	0.009
<i>Monthly income (Singapore dollars)</i>		<0.0001		
<2000	157 (54.1)		1	
2001–4,000	286 (44.7)		0.694 (0.525, 0.918)	0.010
4,001–6,000	132 (36.0)		0.496 (0.360, 0.684)	<0.0001
>6,000	135 (32.9)		0.459 (0.325, 0.648)	<0.0001
<i>Current employment status</i>		0.0003		
Local organisation employee	365 (43.1)		1	
Multinational organisation employee	189 (39.0)		0.872 (0.694, 1.097)	0.243
Self-employed or business owner	75 (31.5)		0.649 (0.476, 0.885)	0.006
Seeking employment	78 (53.1)		1.438 (1.010, 2.047)	0.044
Not working ⁵	14 (33.3)		0.814 (0.414, 1.601)	0.550

Note(s): ¹ p-value from chi-squared (χ^2) test

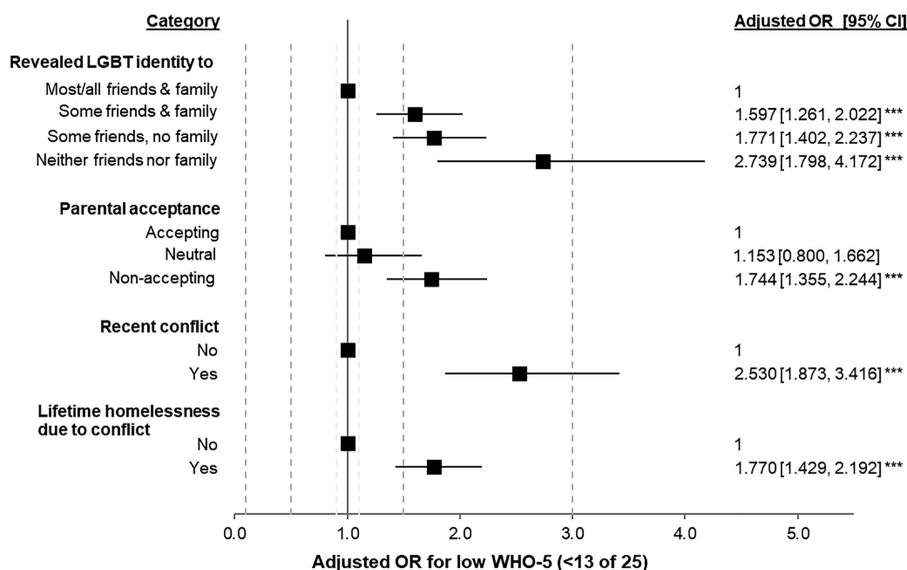
²Multivariable logistic regression was used to estimate the odds ratio of low WHO-5 (<13 of 25), adjusted for age

³ p-value from Wald test

⁴Other includes individuals in open or multiple relationships, separated/divorced/widowed from a marriage/civil union

⁵Includes retirees, homemakers and those intentionally not working

Table 2.
Demographic and socioeconomic factors associated with low WHO-5 (<13 of 25)



Note(s): Adjusted OR - Odds ratio of low WHO-5 (< 13 of 25), adjusted for age. *** indicates $p < 0.0001$. Parental acceptance refers to parental acceptance of respondents' LGBT identity. Recent conflict refers to those who experienced conflict, harassment, threats, or felt unsafe at home in the past 6 months. Lifetime homelessness due to conflict refers to those who were ever made homeless or ever left home due to conflict, harassment, threats, or feeling unsafe at home

Figure 1. Home/family setting factors associated with poor mental well-being (WHO-5 <13 of 25)

Importantly, recent conflict and lifetime homelessness due to conflict were also each associated with significantly greater odds of low WHO-5 (Figure 1; Supplementary Table S1). Respondents with recent experience of conflict were more than twice as likely to have low WHO-5 than respondents who had not (AOR 2.53, 95% CI: 1.873 – 3.416, $p < 0.0001$). For those who experienced lifetime homelessness due to conflict, the AOR of low WHO-5 was 1.77 (95% CI: 1.429 – 2.192, $p < 0.0001$).

Experience of bullying and discrimination in the workplace and school environment. More than a quarter of working respondents (27.9%, $n = 545$) reported that they had not revealed their LGBT identity to anyone at the workplace, 46.3% ($n = 904$) had revealed their identity to some colleagues and 25.8% ($n = 503$) had revealed their identity to many or all colleagues. Mirroring the observations in the domain of home and family life, the extent to which respondents revealed their LGBT identity in the workplace was inversely associated with WHO-5 scores. Respondents who had not revealed their identity to any colleagues were twice as likely to have a low WHO-5 score (AOR 2.084 [95% CI: 1.614 – 2.692], $p < 0.0001$) than those who revealed their identity to many/all colleagues (Figure 2a).

One in eight (12.5%, $n = 211$) working respondents reported that they had experienced at least one form of LGBT-related workplace bullying/discrimination in the previous 12 months (Supplementary Table S1). Experiencing bullying/discrimination was strongly associated with low WHO-5 ($p < 0.0001$). Respondents who had experienced at least one form of workplace bullying/discrimination in the previous 12 months had significantly higher odds of low WHO-5 compared to respondents who had neither experienced nor witnessed such bullying/discrimination (AOR 1.846 [95% CI: 1.373 – 2.481], $p < 0.0001$) (Figure 2a).

Responses from full-time students showed that over half (57.7%, $n = 211$) had experienced bullying/discrimination within their educational institutions. We observed similar relationships between bullying/discrimination in educational institutions and low WHO-5 score as those for workplace bullying/discrimination. Specifically, those who had experienced bullying/discrimination were significantly more likely to have a low WHO-5 score (AOR 2.115 [95% CI: 1.174– 3.813], $p = 0.013$) as compared to respondents who had neither experienced nor witnessed bullying/discrimination (Figure 2b).

Association of WHO-5 scores with social support and community participation

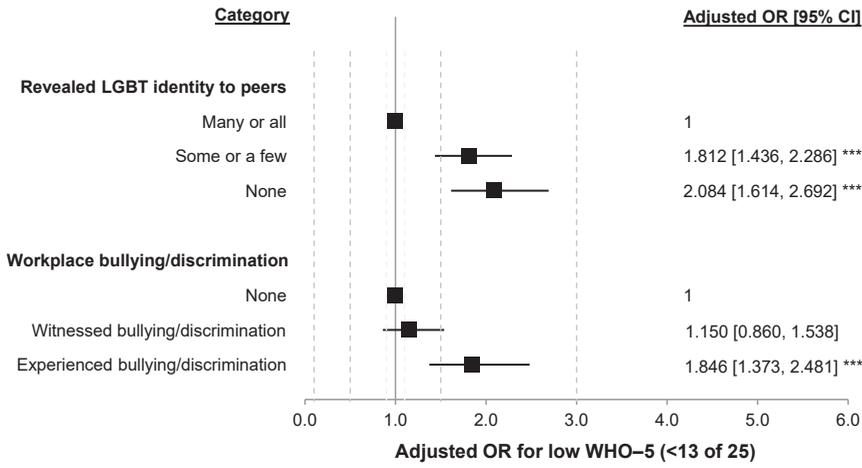
Our analysis revealed potentially protective effects of community participation and social support. Low WHO-5 was significantly less common amongst those who participated in LGBT community organisations ($p < 0.0001$), community events ($p < 0.0001$), or patronised LGBT-oriented parties, clubs and bars ($p = 0.004$), compared with their respective reference groups (Supplementary Table S2). The largest reductions in odds of low WHO-5 were seen amongst those who participated in community organisations (AOR 0.635 [95% CI: 0.538 – 0.750], $p < 0.0001$), community events (AOR 0.635 [95% CI: 0.538–0.750], $p < 0.0001$), or clubs/bars/parties (AOR 0.792 [95% CI: 0.668 – 0.938], $p = 0.007$) (Figure 3). Interestingly, amongst the “online-only” group who participated in internet-based LGBT-oriented networking platforms but no other LGBT-oriented groups, events or businesses, almost half (49.0%) reported low WHO-5. This “online-only” group was also more likely to have a low WHO-5 score as compared with respondents who participated in both in-person and online communities (AOR 1.423 [95% CI: 1.092–1.855], $p = 0.009$).

Discussion

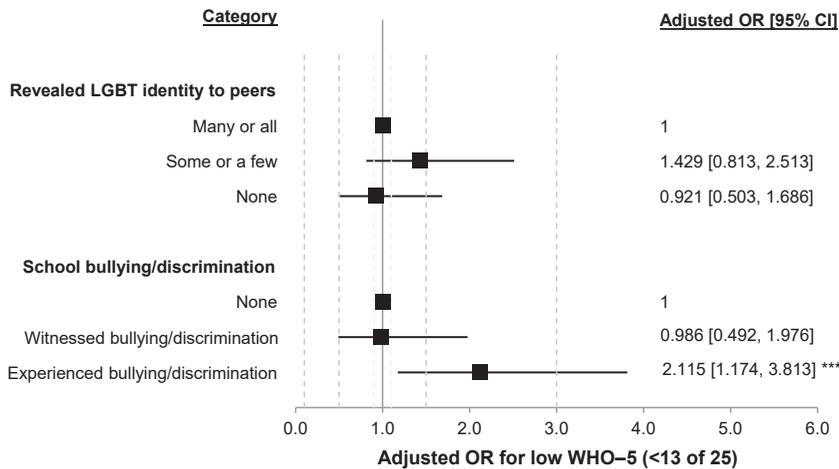
High prevalence of poor mental well-being amongst LGBT-identified individuals in Singapore

In this analysis of a subset of the NLCS Singapore 2013 data, we investigated positive mental well-being and quality of life (WHO-5 Well-being Index) and its relationships with sociodemographic and relational factors in a large community sample of over 2000 LGBT-identified individuals. Building upon earlier surveys that concentrated on defined communities/groups (Fridae, 2010; Sayoni, 2011) or on specific topics (Fridae, 2010; Oogachaga Counselling and Support, 2012), the NLCS was the first large local study to sample individuals across the entire spectrum of sexual orientation and gender identity in Singapore. This was achieved by publicising the survey through partnership with the largest non-profit organisations that served various segments within the community. In addition, the NLCS retrieved comprehensive data on self-reported physical and mental health, health-related behaviours and quality of life of LGBTQ individuals in Singapore, to help address important and long-standing data gaps in these areas. The present analysis of positive mental well-being used the WHO-5 Well-being Index, a validated instrument included in earlier national health survey programmes, thereby allowing some comparisons with available national-level data.

A WHO-5 score of < 13 of 25 indicates poor mental well-being, warranting clinical follow-up for depression screening. In this sample, the mean score was 13.5, just above this clinically meaningful threshold. Out of 2,350 respondents analysed, 40.9% had a WHO-5 score of < 13 . Strikingly, this percentage of respondents with an at-risk WHO-5 score was nearly four times the general-population estimate (11.7%) in a nationally-representative periodic health survey, the 2007 National Health Surveillance Survey (NHSS2007) (Ministry of Health Singapore (Epidemiology and Disease Control Division), 2007). Within every age-group category, the proportion of individuals with poor mental well-being was much higher in the NLCS sample



(a)



(b)

Note(s): A. Workplace setting. B. Educational institution setting. Adjusted OR - Odds ratio of low WHO-5 (< 13 of 25), adjusted for age. *** indicates $p < 0.0001$. Witnessed bullying/discrimination refers to those who witnessed at least one form of bullying/discrimination directed against another person related to their LGBT identity (including verbal abuse, bullying, being asked to change appearance or behaviour, physically or sexually assaulted, discriminated against or excluded from job assignments/promotions, dismissed from employment). Experienced bullying/discrimination refers to those who experienced at least one form of bullying/discrimination related to their LGBT identity (including verbal abuse, bullying, being asked to change appearance or behaviour, physically or sexually assaulted, discriminated against or excluded from job assignments/promotions, dismissed from employment)

Figure 2. Workplace and educational setting: factors associated with poor mental well-being (WHO-5 <13 of 25)

than that reported in the NHSS2007, particularly for those aged 18–29 (NLCS: 42.1%; NHSS2007: 9.2%). We noted similar trends across other sociodemographic variables where

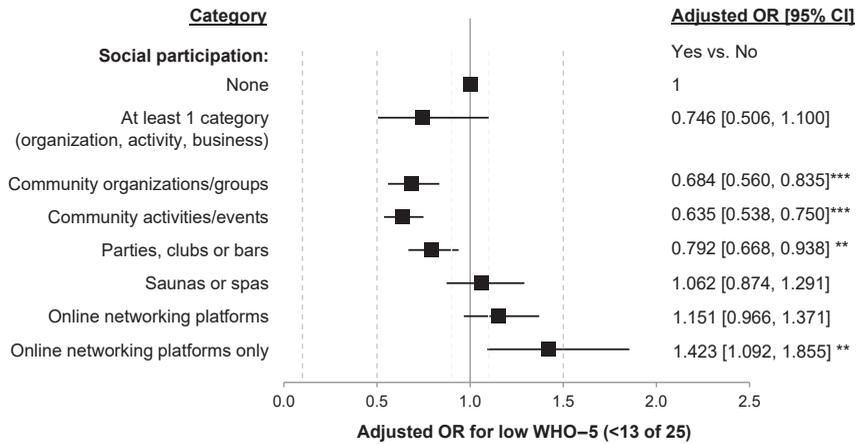


Figure 3. Protective effect of community and social participation on mental well-being

Note(s): Adjusted OR-Odds ratio of low WHO-5 (< 13 of 25), adjusted for age.
** indicates $p < 0.001$, *** indicates $p < 0.0001$

comparable categories were used. These included three major race/ethnicity categories customarily used in Singapore (Chinese, Malay and Indian) and Male/Female categories. Since the NHSS2007 did not survey respondents' gender identity, direct comparisons are not possible for gender identity categories. Despite differences in sampling methodology, we believe that these strikingly large differences may reflect true disparities and are a cause for concern.

We observed associations between mental well-being and relationship/partnership status, educational attainment and income level that were consistent with correlates of well-being identified in a 2013 survey of a general-population sample of young adults (15–34 years) in Singapore in a similar time period (Ho, 2015). Apart from socioeconomic factors such as low income and unemployment (Chong *et al.*, 2012a), that were associated with poorer mental health in adult community samples, a number of other proximal and distal risk factors related to the home and workplace environment emerged in our analyses. Specifically, poor mental well-being was strongly associated with respondents' experience of limited or non-disclosure of their SOGI, parental non-acceptance of their SOGI, conflict at home and lifetime homelessness due to conflict. Poor mental well-being was also strongly associated with experience of bullying/discrimination in other major social spaces, namely workplaces and educational institutions. Our analyses also revealed potentially protective factors, notably social participation in LGBT-focussed community groups and activities. Taken together, these findings emphasise the relevance of minority stress as an additional social determinant of health for LGBT individuals in the local context.

Parental non-acceptance and family conflict are strongly associated with poor mental well-being

The strong relationships identified between home/family-related stressors and poor mental well-being in our sample are highly consistent with the processes described in minority stress frameworks (Goldbach and Gibbs, 2017; Hendricks and Testa, 2012; Meyer, 2003). The framework also posits interdependency amongst a number of stress processes and, indeed, our results suggest a similar inter-relatedness amongst the factors that we explored. For

example, parental non-acceptance of respondents' SOGI was strongly associated with limited or lack of identity disclosure and with experiencing conflict at home, and all three factors were strongly associated with poor mental well-being. Parental non-acceptance can manifest as psychological or physical conflict, ranging from verbalised disapproval of a child's SOGI, to harassment or threats of physical violence, leading individuals to feel unsafe at home, as explored in our study. Our findings are corroborated by existing literature, which suggests that parents' objection to the child's identity and their attempts to influence or alter their children's SOGI have a strong negative impact, such as increasing emotional stress, negativity towards their identity, suicidality and substance use amongst LGBTQ youths (D'Amico and Julien, 2012; D'Amico *et al.*, 2015). Conversely, more accepting parental attitudes towards the child's sexual orientation were associated with protective effects, specifically against proximal stressors (Feinstein *et al.*, 2014).

In our analysis, less extensive disclosure of respondents' SOGI to peers and family was associated with poorer mental well-being. Although this survey did not distinguish between non-disclosure and concealment of identity, the two concepts are related and share similar psychosocial components (Beals *et al.*, 2009; Pachankis *et al.*, 2020), with recent research specifically identifying concealment behaviour as a negative predictor of psychological well-being and self-identity (Jackson and Mohr, 2016). Consistent with the minority stress model, concealment or non-disclosure of SOGI status may be a significant source of proximal stress, whilst at the same time it can be a protective coping strategy, reducing victimisation and discrimination in some circumstances (Meyer, 2003).

Apart from psychological distress and poor mental health outcomes, our analysis suggests that SOGI-related conflict at home may have further potentially serious consequences. Close to one in five respondents (17.8%) reported lifetime homelessness related to conflict at home. Studies have consistently found higher rates of homelessness amongst LGBT youth than amongst their peers, which is cause for concern, since homelessness exposes LGBTQ individuals to complex health risks, as well as additional barriers to healthcare due to economic instability (Corliss *et al.*, 2011; Rew *et al.*, 2005; Whitbeck *et al.*, 2004).

Experience of discrimination/bullying in workplaces and educational institutions is strongly associated with poor mental well-being

Experiences of discrimination, bullying, harassment and abuse, whether based on race, gender, sexuality, disability or other attributes, are associated with poorer health status and greater functional limitation (Burgess *et al.*, 2007; Mays and Cochran, 2001; Okechukwu *et al.*, 2014). In our sample, respondents who had recently experienced LGBT-related bullying/discrimination in the workplace were significantly more likely to have poor mental well-being than respondents without such experiences. In the workplace, organisation-wide adoption of inclusive, non-discriminatory policies, backed by strong support from management, would help promote psychological security and well-being amongst all employees, including LGBT individuals (Boekhorst, 2015; Webster *et al.*, 2018). Additionally, numerous studies have reported the practical benefits of inclusive policies in creating economic value for both businesses and societies as a whole (Hossain *et al.*, 2019; Lee Badgett *et al.*, 2013, 2019), demonstrating that workplace inclusivity does indeed make good business sense.

In the educational setting, we found that full-time students who had experienced bullying/discrimination were more than twice as likely to have poorer mental well-being as compared to students who had not experienced bullying/discrimination. Bullying/discrimination, regardless of its basis, is well-known to be detrimental to mental health (Karanikola *et al.*, 2018) and has also been linked to poorer academic performance (Samara *et al.*, 2021).

Protective effects of community participation on mental health outcomes

Our study also adds to existing evidence on the protective effects of community participation and social support within the LGBTQ community (Frost and Meyer, 2012; McConnell *et al.*, 2015, 2018), corresponding to the ameliorating factors and coping mechanisms described in the minority stress framework. Respondents who participated in community organisations or events had significantly lower odds of poor mental well-being compared with non-participants. This reinforces the potential importance of community connectedness and relationships with other LGBTQ individuals for social support and empowerment (Garcia *et al.*, 2020), especially for those without supportive families. While we did not measure these specific attributes in this survey, we note with interest that various self-protective mechanisms, including in-group comparisons and selective devaluing, may provide a buffering or self-protective effect against the negative impacts of social stigma (Crocker and Major, 1989). Overcoming isolation, connecting with a community and sharing similar lived experiences can help individuals normalise their identities in a healthy and empowering way.

Interestingly, amongst respondents who participated only in online LGBT-oriented networking platforms, a significantly higher proportion (49.0%) had WHO-5 scores indicating poor mental well-being than those who participated in in-person community organisations/groups (33.6%) or community activities/events (36.0%). Although existing research points to the benefits of virtual communities in providing social support to LGBTQ individuals (Garcia *et al.*, 2020; Wilson and Cariola, 2019), our results add an extra dimension, suggesting that in-person interactions still matter. We acknowledge that the differences between those reporting exclusively-online participation versus a mixture of in-person and online participation could be attributed to factors such as fear of negative consequences and/or internalised homophobia. This could result in bias favouring community participation amongst individuals with greater resilience to these factors.

Limitations and future research

A number of limitations should be noted. Given the one-time cross-sectional nature of the survey, no formal causal inferences can be made based solely on these data. In view of the conservative social climate and practical resource constraints, the NLCS2013 was conducted as a single online anonymous survey, using snowball sampling and leveraging on the social reach of the largest LGBTQ community organisations in Singapore. If resources permit, future surveys should be designed to allow ongoing data collection and analysis, which could help to mitigate the limitations of a single-administration design. Although we readily acknowledge the inherent limitations of the non-probability sampling method employed, under the circumstances we consider it a reasonable and practical alternative to traditional population-based methods, especially for reaching sufficient numbers of individuals within the target population (Hidaka and Operario, 2006). In the presence of social stigma and the retention of anti-homosexuality laws, attempting to use traditional methods such as interview-based surveys and random household sampling would create practical challenges and introduce other sources of selection and non-response bias that are equally challenging to account for.

As with any self-report survey involving voluntary participation, the potential influence of selection and non-response bias must be considered. However, we note that the lack of accurate knowledge of the sociodemographic profile and other characteristics of the underlying target population presents practical difficulties for estimating the impact of such bias. The majority of respondents were Chinese, relatively young (<40 years), well-educated and identified as homosexual/mostly homosexual. The numbers of transgender or other-gender identity respondents and non-Chinese respondents were relatively small, limiting interpretation of the data for these groups. Given the online-only nature of the survey and the

survey language (English only), there could also have been a bias towards individuals who were English-literate and comfortable with the use of the internet and online media. This could have contributed to an underrepresentation of older individuals, those with lower income or education levels, as well as other groups with limited access to online media. Considering the negative influence of factors such as low SES or education levels on mental health and well-being (Alegria *et al.*, 2018; Ng *et al.*, 2014; Wee *et al.*, 2014, 2017), the proportion of individuals with poor mental well-being within the LGBT-identified population as a whole could have been even higher than we have reported here.

The main limitations are shared with many studies on LGBT health conducted in earlier decades in North America and Europe (Coyle, 1993; King *et al.*, 2003; Lock and Steiner, 1999; Meyer, 1995), as well as more contemporary studies in other Asian countries where anti-LGBT stigma remains prevalent (Feng *et al.*, 2012; Hidaka and Operario, 2006; Patel *et al.*, 2013; Sivasubramanian *et al.*, 2011). Such research has historically relied on internet-based or other non-random convenience samples, such as attendees at medical clinics, LGBT events or patrons of LGBT-oriented businesses. Despite such constraints, it is noteworthy that early studies on community samples were often able to identify trends consistent with those from population samples in later and more broadly representative surveys (Gonzales *et al.*, 2016; Sandfort *et al.*, 2006). This was possible because these later surveys included questions pertaining to respondents' sexual orientation and/or gender identity, which are demographic dimensions that may be as keenly relevant to health as race/ethnicity (Cahill and Makadon, 2014; Streed *et al.*, 2020). We recommend that all health-related surveys, particularly those that seek to achieve population-level coverage, offer respondents the option to provide SOGI information alongside other demographic data. Collection of accurate and meaningful SOGI data, with appropriate safeguards in place, is a crucial first step towards understanding and addressing health disparities in sexual and gender minority populations.

In Asia, published research on the health needs of LGBT individuals, especially at a nationally representative level, remains relatively scarce. Our results point to a disproportionately high prevalence of poor mental well-being and possible risk of depression amongst LGBT-identified people in Singapore, similar to what has been described for sexual and gender minorities in a number of other developed Asian societies (Chan *et al.*, 2020; Hidaka and Operario, 2006; Yi *et al.*, 2017). The cross-sectional study by Hidaka *et al.* in 2006 illustrates the challenges faced in early-phase research on mental health in sexual minority populations. Although focussing on correlates of attempted suicide in gay/bisexual/queer Japanese men, this study identified common and persistent themes in LGBTQ mental health research, including high levels of depression, verbal harassment and bullying related to sexual orientation (Hidaka and Operario, 2006). A decade later, in South Korea, Yi *et al.* estimated a 5–7-fold higher prevalence of depressive symptoms amongst LGB individuals relative to the general population (Yi *et al.*, 2017). Of note, their paper discusses the challenges involved in making comparisons between the LGB and general population, related to the lack of measures to capture SOGI in nationally-representative surveys on adults. A 2019 survey of LGBT adults in Hong Kong reported that 29.8% of respondents met criteria for probable clinical depression, which was double the proportion estimated for the general population in a separate population-level survey that covered a similar time-frame (Chan *et al.*, 2020).

To move beyond the limitations of earlier studies, a number of challenges need to be overcome, most notably that of obtaining suitable population-based samples. As discussed above, inclusion of appropriate SOGI variables in population-level surveys would facilitate the identification of individuals from the group(s) of interest and would also support analyses that use appropriate non-LGBTQ comparison groups to contextualise findings. To date, the number of countries where this has been implemented is relatively small. In the meantime, one priority for local research is to improve basic estimates of the size, sociodemographic profile and other characteristics of the LGBTQ-identified resident population in Singapore.

This would help researchers to understand and estimate the impact of various types of bias in local samples. The findings could also inform aspects of research design for future studies, such as meaningful category definitions for certain variables or identifying certain population subgroups that may need to be over-sampled, depending on the specific study objectives.

Within this context, the present study of a large community sample is best understood as early-phase work in this population, primarily descriptive and hypothesis-generating. This comprehensive dataset documented multiple aspects of health (self-reported physical and mental health, health-related behaviours and quality of life) amongst LGBTQ individuals, providing a valuable reference point for this time period in the community's history. Despite the limitations, the implications of the findings still appear relevant, as a number of the observed trends emerged in later research studies as well. Our analysis identified both risk and protective factors, showing parallels with research on LGBTQ populations elsewhere and indicating important areas of unmet need in our local setting. In particular, steps to improve the home and workplace climate are still urgently needed.

Implications for stakeholders and society

Despite indications of gradual shifts in societal attitudes on LGBT issues, recent studies show that LGBTQ individuals in Singapore remain vulnerable to violence and discrimination in the home/family environment (Sayoni, 2018; TransgenderSG *et al.*, 2020a). In summing up observations from interviews of 40 LBTQ individuals, researchers have reported that the threat of or actual violence and abuse very often comes from immediate family members or relatives who “believe that homosexuality is wrong and that LBTQ individuals must be punished or ‘cured’ of their homosexual tendencies” (Sayoni, 2018). Arguably, the greatest impact is on younger individuals who are not financially independent and lack the means to move out of the family home. Of more than 200 trans/non-binary individuals surveyed in 2020, nearly a quarter reported that they had experienced violence from a family member or intimate partner (TransgenderSG *et al.*, 2020a). In view of the above, our findings on mental well-being and conflict at home and “lifetime” homelessness due to such conflict serve to emphasise the importance of the family environment as a safe space, physically and psychologically. Access to safe and adequate housing remains a major concern for LGBTQ individuals, due to a combination of factors such as the high cost of housing and public housing subsidy policies that favour heteronormative family units, which have been examined in detail elsewhere (Oswin, 2010, 2019).

Similarly, studies show that continued efforts are needed to address discrimination against LGBTQ individuals in the workplace. A 2017 audit in four South-East Asian countries reported high levels of pre-employment discrimination against transgender people in Singapore, finding that cisgender job applicants were 80% more likely to get a positive response to their applications and 100% more likely to be invited for job interviews than transgender applicants with equivalent qualifications and experience (Winter *et al.*, 2018). Apart from barriers in seeking employment, about a quarter of transgender individuals surveyed reported negative workplace experiences such as repeated or intentional mis-gendering, being gossiped about or asked to change their behaviour/appearance or “lifestyle” (TransgenderSG *et al.*, 2020a). A Singapore study found evidence of discrimination by hiring personnel against gay and lesbian job applicants for task-interdependent occupations, which require greater interaction with co-workers. Countering assumptions that workers would be uncomfortable working closely with gay or lesbian colleagues, the study found that gay men and lesbians in high-task-interdependent jobs were actually more—not less—likely to be invited by co-workers to socialise outside of work (Lim *et al.*, 2018). Such research provides encouraging evidence that normalising interactions and interpersonal

contact with LGBTQ individuals in the workplace, such as working closely with a gay or lesbian co-worker, can help reduce prejudice and enhance social interactions within and outside of the workplace.

As for educational settings, no official data on SOGI-related discrimination or bullying in Singapore schools or higher education institutions are available. However, our findings and those of others indicate that SOGI-related bullying/discrimination in educational institutions has been and remains common (Oogachaga Counselling and Support, 2012; Sayoni, 2018, 2019; TransgenderSG *et al.*, 2020a), leading many students to feel that they lack safety and support in these spaces. In response to the identified needs of LGBTQ students in Singapore's higher education institutions, student-run volunteer organisations have developed sexual health and mental health resources, signalling that these are still significant areas of concern (Inter University LGBT Network, n.d.).

Both empirical and theoretical research underscore the importance of support and acceptance from parents, families and society at large, as these factors are strongly protective against poor mental health and well-being in LGBTQ individuals (Garcia *et al.*, 2020; Hatzenbuehler *et al.*, 2011; Simons *et al.*, 2013). We would expect these factors to be just as relevant in the Singapore context, where it has been shown that well-being in young adults is strongly correlated with family support (Ho, 2015). Given that many LGBTQ individuals remain vulnerable to factors within the family/home environment that adversely affect their mental health, our findings remain relevant and highlight the importance of mitigating the negative impact of family non-acceptance and managing conflict situations, particularly for younger individuals. Enhanced access to LGBTQ-friendly and culturally-sensitive mental health and social services could benefit LGBTQ individuals of all ages as well as their families. The findings also emphasise the need to improve the handling of incidents of SOGI-related bullying and harassment in educational institutions, which would ultimately help improve the well-being of LGBTQ students. Implementation of anti-bullying guidelines and policies with SOGI-specific clauses, could empower educators and other staff to support students who report SOGI-related bullying or discrimination and promote a greater sense of safety within educational institutions.

The recent announcement of the intention to repeal Section 377A in Singapore (Lee, 2022) raises interesting questions about what this change might mean for LGBTQ individuals in everyday life. In other Asian jurisdictions, such as Hong Kong and India, there was increased demand for mental health support and social services in LGBTQ communities following the repeal of anti-homosexuality laws. A similar trend is likely to be observed following Singapore's repeal of Section 377A, once LGBTQ individuals can be assured of not facing prosecution if they seek access to LGBTQ-focussed services and support (Oogachaga Counselling and Support, personal communication to the authors). This trend is likely to be compounded by the effects of the Covid-19 pandemic, which has greatly increased awareness of mental well-being and its importance in Singapore. In August 2021, the Singapore government announced the formation of the Inter-Agency Taskforce on Mental Health and Well-being. In July 2022, following a public consultation exercise, the Taskforce announced three focus areas, namely “(a) *improve accessibility, coordination and quality of mental health services; (b) strengthening of services and support for youth mental well-being; (c) improve workplace well-being measures and employment support*” (Ministry of Health Singapore, 2022).

These shifts towards promoting individual and community mental health and towards greater acceptance of LGBTQ individuals, coupled with the high prevalence of poor mental well-being in the LGBTQ community, signal the urgency of capacity- and capability-building for mental health and social work professionals and their accompanying support systems. Studies of family physicians and social workers in Singapore have revealed considerable needs in terms of training and preparedness to serve LGBTQ clients (Lim and Ang, 2021; Teh *et al.*, 2015) and such needs are likely to exist within other medical and social service disciplines as well. Our research provides empirical knowledge of factors that contribute to

poor mental well-being amongst LGBTQ individuals in Singapore, which will be useful for planning of mental well-being community interventions and individual treatment plans and for the training of service providers. Attitudes and beliefs associated with parental non-acceptance, or bullying and discrimination in schools or the workplace, may be slow to shift, even with the repeal of Section 377A, so are likely to remain relevant. In the long term, broad-based efforts to reduce stigmatisation at all levels may be the most effective and sustainable way of mitigating health disparities amongst stigmatised groups (Hatzenbuehler *et al.*, 2013; Lim *et al.*, 2014; Mule *et al.*, 2009).

Conclusions

Our study of mental well-being in LGBTQ individuals in Singapore adds to the body of evidence on the health status of this population. Together with prior and subsequent research, our findings highlight a number of unmet health needs in this population, including but not limited to mental well-being. Our findings illustrate different ways in which SOGI minority status may contribute to disparities in mental well-being and thus point to the relevance of this social determinant of health and well-being in the local context. The overall well-being of our society as a whole depends on the well-being of all its communities and individuals. The success of broad-based efforts to improve health in the population as a whole thus depends upon understanding and addressing the full range of applicable social determinants of health.

Further targeted research to capture information on the LGBTQ population's overall health status and unmet physical and mental health needs is essential to guide interventions that are effective and sustainable in the long term. Over the period since this research was conducted, dedicated community groups have continued their efforts to document and address the immediate mental health and related needs of the communities they serve, whilst also engaging with a range of stakeholders within the wider community in Singapore. In the long term, what will ultimately be needed to address such health disparities is concerted and continued commitment to education, destigmatisation and promoting acceptance across the multiple social spaces that LGBTQ individuals must navigate, including families, educational institutions and workplaces.

References

- Alegria, M., NeMoyer, A., Falgas Bague, I., Wang, Y. and Alvarez, K. (2018), "Social determinants of mental health: where we are and where we need to go", *Current Psychiatry Reports*, Vol. 20 No. 11, p. 95, doi: [10.1007/s11920-018-0969-9](https://doi.org/10.1007/s11920-018-0969-9).
- Alvarez-Galvez, J. and Salvador-Carulla, L. (2013), "Perceived discrimination and self-rated health in Europe: evidence from the European Social Survey (2010)", *PLoS One*, Vol. 8 No. 9, p. e74252, doi: [10.1371/journal.pone.0074252](https://doi.org/10.1371/journal.pone.0074252).
- Baptiste-Roberts, K., Oranuba, E., Werts, N. and Edwards, L.V. (2017), "Addressing health care disparities among sexual minorities", *Obstetrics and Gynecology Clinics of North America*, Vol. 44 No. 1, pp. 71-80, doi: [10.1016/j.ogc.2016.11.003](https://doi.org/10.1016/j.ogc.2016.11.003).
- Beals, K.P., Peplau, L.A. and Gable, S.L. (2009), "Stigma management and well-being: the role of perceived social support, emotional processing, and suppression", *Personality and Social Psychology Bulletin*, Vol. 35 No. 7, pp. 867-879, doi: [10.1177/0146167209334783](https://doi.org/10.1177/0146167209334783).
- Bech, P., Olsen, L.R., Kjoller, M. and Rasmussen, N.K. (2003), "Measuring well-being rather than the absence of distress symptoms: a comparison of the SF-36 mental health subscale and the WHO-five well-being scale", *International Journal of Methods in Psychiatric Research*, Vol. 12 No. 2, pp. 85-91, doi: [10.1002/mpr.145](https://doi.org/10.1002/mpr.145).
- bin Ibrahim, M.A. and Barlas, J. (2021), "Making do with things we cannot change': an interpretive phenomenological analysis of relationship resilience among gay men in Singapore", *Journal*

- of *Social and Personal Relationships*, Vol. 38 No. 9, pp. 2630-2652, doi: [10.1177/02654075211017988](https://doi.org/10.1177/02654075211017988).
- Bockting, W.O., Miner, M.H., Swinburne Romine, R.E., Hamilton, A. and Coleman, E. (2013), "Stigma, mental health, and resilience in an online sample of the US transgender population", *American Journal of Public Health*, Vol. 103 No. 5, pp. 943-951, doi: [10.2105/AJPH.2013.301241](https://doi.org/10.2105/AJPH.2013.301241).
- Boekhorst, J.A. (2015), "The role of authentic leadership in fostering workplace inclusion: a social information processing perspective", *Human Resource Management*, Vol. 54 No. 2, pp. 241-264, doi: [10.1002/hrm.21669](https://doi.org/10.1002/hrm.21669).
- Burgess, D., Tran, A., Lee, R. and van Ryn, M. (2007), "Effects of perceived discrimination on mental health and mental health services utilization among gay, lesbian, bisexual and transgender persons", *Journal of LGBT Health Research*, Vol. 3 No. 4, pp. 1-14, doi: [10.1080/15574090802226626](https://doi.org/10.1080/15574090802226626).
- Buspavanich, P., Lech, S., Lerner, E., Fischer, M., Berger, M., Vilsmaier, T., Kaltofen, T., Keckstein, S., Mahner, S., Behr, J., Thaler, C.J. and Batz, F. (2021), "Well-being during COVID-19 pandemic: a comparison of individuals with minoritized sexual and gender identities and cis-heterosexual individuals", *PLoS One*, Vol. 16 No. 6, e0252356, doi: [10.1371/journal.pone.0252356](https://doi.org/10.1371/journal.pone.0252356).
- Cahill, S. and Makadon, H. (2014), "Sexual orientation and gender identity data collection in clinical settings and in electronic health records: a key to ending LGBT health disparities", *LGBT Health*, Vol. 1 No. 1, pp. 34-41, doi: [10.1089/lgbt.2013.0001](https://doi.org/10.1089/lgbt.2013.0001).
- Chan, R.C.H., Operario, D. and Mak, W.W.S. (2020), "Bisexual individuals are at greater risk of poor mental health than lesbians and gay men: the mediating role of sexual identity stress at multiple levels", *Journal of Affective Disorders*, Vol. 260, pp. 292-301, doi: [10.1016/j.jad.2019.09.020](https://doi.org/10.1016/j.jad.2019.09.020).
- Chong, S.A., Abdin, E., Nan, L., Vaingankar, J.A. and Subramaniam, M. (2012a), "Prevalence and impact of mental and physical comorbidity in the adult Singapore population", *Annals Academy of Medicine Singapore*, Vol. 41 No. 3, pp. 105-114, available at: <https://www.ncbi.nlm.nih.gov/pubmed/22538737>
- Chong, S.A., Abdin, E., Vaingankar, J.A., Heng, D., Sherbourne, C., Yap, M., Lim, Y. W., Wong, H.B., Ghosh-Dastidar, B., Kwok, K.W. and Subramaniam, M. (2012b), "A population-based survey of mental disorders in Singapore", *Annals Academy of Medicine Singapore*, Vol. 41 No. 2, pp. 49-66, available at: <https://www.ncbi.nlm.nih.gov/pubmed/22498852>
- Choong, B.C., Suthendran, S. and Chio, M.T. (2012), "The role of lesbian, gay, bisexual, transgender and questioning-focused psychosocial approaches as part of human immunodeficiency virus (HIV) prevention efforts in Singapore", *Annals Academy of Medicine Singapore*, Vol. 41 No. 12, pp. 610-614, available at: <https://www.ncbi.nlm.nih.gov/pubmed/23303120>
- Chua, L.J. (2014), *Mobilizing Gay Singapore: Rights and Resistance in an Authoritarian State*, Temple University Press, Philadelphia, pp. 1-215.
- Chua, A.C., Chen, M.L., Cavailler, P., Jiang, L., Abdullah, M.R., Ng, O.T., Chio, M., Koe, S., Tay, J., Wong, M.L. and Chan, R. (2013), "Challenges of respondent driven sampling to assess sexual behaviour and estimate the prevalence of human immunodeficiency virus (HIV) and syphilis in men who have sex with men (MSM) in Singapore", *Annals Academy of Medicine Singapore*, Vol. 42 No. 7, pp. 350-353, available at: <https://www.ncbi.nlm.nih.gov/pubmed/23949264>
- Corliss, H.L., Goodenow, C.S., Nichols, L. and Austin, S.B. (2011), "High burden of homelessness among sexual-minority adolescents: findings from a representative Massachusetts high school sample", *American Journal of Public Health*, Vol. 101 No. 9, pp. 1683-1689, doi: [10.2105/AJPH.2011.300155](https://doi.org/10.2105/AJPH.2011.300155).
- Covid-19 Mental Disorders Collaborators (2021), "Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic", *Lancet*, Vol. 398 No. 10312, pp. 1700-1712, doi: [10.1016/S0140-6736\(21\)02143-7](https://doi.org/10.1016/S0140-6736(21)02143-7).
- Coyle, A. (1993), "A study of psychological well-being among gay men using the GHQ-30", *British Journal of Clinical Psychology*, Vol. 32 No. 2, pp. 218-220, doi: [10.1111/j.2044-8260.1993.tb01047.x](https://doi.org/10.1111/j.2044-8260.1993.tb01047.x).
- Crocker, J. and Major, B. (1989), "Social stigma and self-esteem: the self-protective properties of stigma", *Psychological Review*, Vol. 96 No. 4, pp. 608-630, doi: [10.1037/0033-295x.96.4.608](https://doi.org/10.1037/0033-295x.96.4.608).

- D'Amico, E. and Julien, D. (2012), "Disclosure of sexual orientation and gay, lesbian, and bisexual youths' adjustment: associations with past and current parental acceptance and rejection", *Journal of GLBT Family Studies*, Vol. 8 No. 3, pp. 215-242, doi: [10.1080/1550428x.2012.677232](https://doi.org/10.1080/1550428x.2012.677232).
- Department of Statistics (2010), "Singapore Census of population 2010", available at: http://www.singstat.gov.sg/docs/default-source/default-document-library/publications/publications_and_papers/cop2010/ssnsep09-pg23-28.pdf
- Detenber, B.H., Ho, S.S., Neo, R.L., Malik, S. and Cenite, M. (2013), "Influence of value predispositions, interpersonal contact, and mediated exposure on public attitudes toward homosexuals in Singapore", *Asian Journal of Social Psychology*, Vol. 16 No. 3, pp. 181-196, doi: [10.1111/ajsp.12006](https://doi.org/10.1111/ajsp.12006).
- Detenber, B.H., Cenite, M., Zhou, S., Malik, S. and Neo, R.L. (2014), "Rights versus morality: online debate about decriminalization of gay sex in Singapore", *Journal of Homosexuality*, Vol. 61 No. 9, pp. 1313-1333, doi: [10.1080/00918369.2014.926769](https://doi.org/10.1080/00918369.2014.926769).
- D'Amico, E., Julien, D., Tremblay, N. and Chartrand, E. (2015), "Gay, lesbian, and bisexual youths coming out to their parents: parental reactions and youths' outcomes", *Journal of GLBT Family Studies*, Vol. 11 No. 5, pp. 411-437, doi: [10.1080/1550428x.2014.981627](https://doi.org/10.1080/1550428x.2014.981627).
- Feinstein, B.A., Wadsworth, L.P., Davila, J. and Goldfried, M.R. (2014), "Do parental acceptance and family support moderate associations between dimensions of minority stress and depressive symptoms among lesbians and gay men?", *Professional Psychology: Research and Practice*, Vol. 45 No. 4, pp. 239-246, doi: [10.1037/a0035393](https://doi.org/10.1037/a0035393).
- Feng, Y., Lou, C., Gao, E., Tu, X., Cheng, Y., Emerson, M.R. and Zabin, L.S. (2012), "Adolescents' and young adults' perception of homosexuality and related factors in three Asian cities", *Journal of Adolescent Health*, Vol. 50 3 Suppl, pp. S52-S60, doi: [10.1016/j.jadohealth.2011.12.008](https://doi.org/10.1016/j.jadohealth.2011.12.008).
- Fish, J.N., Moody, R.L., Grossman, A.H. and Russell, S.T. (2019), "LGBTQ youth-serving community-based organizations: who participates and what difference does it make?", *Journal of Youth and Adolescence*, Vol. 48 No. 12, pp. 2418-2431, doi: [10.1007/s10964-019-01129-5](https://doi.org/10.1007/s10964-019-01129-5).
- Fredriksen-Goldsen, K.I., Emlet, C.A., Kim, H.J., Muraco, A., Erosheva, E.A., Goldsen, J. and Hoy-Ellis, C.P. (2013), "The physical and mental health of lesbian, gay male, and bisexual (LGB) older adults: the role of key health indicators and risk and protective factors", *Gerontologist*, Vol. 53 No. 4, pp. 664-675, doi: [10.1093/geront/gns123](https://doi.org/10.1093/geront/gns123).
- Fridae (2010), "Asia internet MSM sex survey 2010 preliminary report", available at: <https://www.fridae.asia/gay-news/2010/07/23/10164.asia-internet-msm-sex-survey-2010-preliminary-report>
- Frost, D.M. and Meyer, I.H. (2012), "Measuring community connectedness among diverse sexual minority populations", *The Journal of Sex Research*, Vol. 49 No. 1, pp. 36-49, doi: [10.1080/00224499.2011.565427](https://doi.org/10.1080/00224499.2011.565427).
- Garcia, J., Vargas, N., Clark, J.L., Magana-Alvarez, M., Nelons, D.A. and Parker, R.G. (2020), "Social isolation and connectedness as determinants of well-being: global evidence mapping focused on LGBTQ youth", *Global Public Health*, Vol. 15 No. 4, pp. 497-519, doi: [10.1080/17441692.2019.1682028](https://doi.org/10.1080/17441692.2019.1682028).
- GBD Diseases and Injuries Collaborators (2020), "Global burden of 369 diseases and injuries in 204 countries and territories, 1990-2019: a systematic analysis for the global burden of disease study 2019", *Lancet*, Vol. 396 No. 10258, pp. 1204-1222, doi: [10.1016/S0140-6736\(20\)30925-9](https://doi.org/10.1016/S0140-6736(20)30925-9).
- Goh, D. (2008), "It's the gays' fault", *Journal of Communication Inquiry*, Vol. 32 No. 4, pp. 383-399, doi: [10.1177/0196859908320295](https://doi.org/10.1177/0196859908320295).
- Goldbach, J.T. and Gibbs, J.J. (2017), "A developmentally informed adaptation of minority stress for sexual minority adolescents", *Journal of Adolescence*, Vol. 55, pp. 36-50, doi: [10.1016/j.adolescence.2016.12.007](https://doi.org/10.1016/j.adolescence.2016.12.007).
- Gonzales, G., Przedworski, J. and Henning-Smith, C. (2016), "Comparison of health and health risk factors between lesbian, gay, and bisexual adults and heterosexual adults in the United States: results from the national health interview survey", *JAMA Internal Medicine*, Vol. 176 No. 9, pp. 1344-1351, doi: [10.1001/jamainternmed.2016.3432](https://doi.org/10.1001/jamainternmed.2016.3432).

-
- Hall, T., Krahn, G.L., Horner-Johnson, W. and Lamb, G. (2011), "Examining functional content in widely used Health-Related Quality of Life scales", *Rehabilitation Psychology*, Vol. 56 No. 2, pp. 94-99, doi: [10.1037/a0023054](https://doi.org/10.1037/a0023054).
- Hatzenbuehler, M.L. and Pachankis, J.E. (2016), "Stigma and minority stress as social determinants of health among lesbian, gay, bisexual, and transgender youth: research evidence and clinical implications", *Pediatric Clinics of North America*, Vol. 63 No. 6, pp. 985-997, doi: [10.1016/j.pcl.2016.07.003](https://doi.org/10.1016/j.pcl.2016.07.003).
- Hatzenbuehler, M.L., Keyes, K.M. and Hasin, D.S. (2009), "State-level policies and psychiatric morbidity in lesbian, gay, and bisexual populations", *American Journal of Public Health*, Vol. 99 No. 12, pp. 2275-2281, doi: [10.2105/AJPH.2008.153510](https://doi.org/10.2105/AJPH.2008.153510).
- Hatzenbuehler, M.L., McLaughlin, K.A., Keyes, K.M. and Hasin, D.S. (2010), "The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: a prospective study", *American Journal of Public Health*, Vol. 100 No. 3, pp. 452-459, doi: [10.2105/AJPH.2009.168815](https://doi.org/10.2105/AJPH.2009.168815).
- Hatzenbuehler, M.L., Keyes, K.M. and McLaughlin, K.A. (2011), "The protective effects of social/contextual factors on psychiatric morbidity in LGB populations", *International Journal of Epidemiology*, Vol. 40 No. 4, pp. 1071-1080, doi: [10.1093/ije/dyr019](https://doi.org/10.1093/ije/dyr019).
- Hatzenbuehler, M.L., Phelan, J.C. and Link, B.G. (2013), "Stigma as a fundamental cause of population health inequalities", *American Journal of Public Health*, Vol. 103 No. 5, pp. 813-821, doi: [10.2105/AJPH.2012.301069](https://doi.org/10.2105/AJPH.2012.301069).
- Hendricks, M.L. and Testa, R.J. (2012), "A conceptual framework for clinical work with transgender and gender nonconforming clients: an adaptation of the Minority Stress Model", *Professional Psychology: Research and Practice*, Vol. 43 No. 5, pp. 460-467, doi: [10.1037/a0029597](https://doi.org/10.1037/a0029597).
- Henkel, V., Mergl, R., Kohlen, R., Maier, W., Moller, H.J. and Hegerl, U. (2003), "Identifying depression in primary care: a comparison of different methods in a prospective cohort study", *BMJ*, Vol. 326 No. 7382, pp. 200-201, doi: [10.1136/bmj.326.7382.200](https://doi.org/10.1136/bmj.326.7382.200).
- Hidaka, Y. and Operario, D. (2006), "Attempted suicide, psychological health and exposure to harassment among Japanese homosexual, bisexual or other men questioning their sexual orientation recruited via the internet", *Journal of Epidemiology and Community Health*, Vol. 60 No. 11, pp. 962-967, doi: [10.1136/jech.2005.045336](https://doi.org/10.1136/jech.2005.045336).
- Ho, W.K. (2015), "Well-being of Singapore's youths (2015). The state of youth in Singapore 2014", *Research Collection School Of Economics*, pp. 105-122, available at: https://ink.library.smu.edu.sg/soe_research/2092
- Hossain, M., Atif, M., Ahmed, A. and Mia, L. (2019), "Do LGBT workplace diversity policies create value for firms?", *Journal of Business Ethics*, Vol. 167 No. 4, pp. 775-791, doi: [10.1007/s10551-019-04158-z](https://doi.org/10.1007/s10551-019-04158-z).
- Iau, J. (2022a), "NDR 2022: LGBTQ community expresses relief at repeal of Section 377A; religious groups voice concerns", *The Straits Times*, available at: <https://www.straitstimes.com/singapore/politics/ndr-2022-lgbtq-community-express-relief-at-repeal-of-section-377a-religious-groups-voice-concerns>
- Iau, J. (2022b), "Section 377A: religious groups call for unity; poll finds 43% support repeal, double those against", *The Straits Times*, available at: <https://www.straitstimes.com/singapore/politics/section-377a-religious-groups-call-for-unity-poll-finds-43-per-cent-support-repeal-double-those-against>
- IndigNation, Prout, Sayoni, The Healing Circle, TransgenderSG and Young Out Here (2020), "Joint submission (JS2) for the 38th session of the UPR working group - review of Singapore", available at: <https://uprdoc.ohchr.org/uprweb/downloadfile.aspx?filename=8473andfile=CoverPage>
- Inter University LGBT Network (n.d.), "Resource compilations", available at: <https://interunilgbt.com/resource-compilations/>
- Ipsos (2022a), "Cautious tones over implications of support of same-sex relationships", available at: <https://www.ipsos.com/en-sg/cautious-tones-over-implications-support-same-sex-relationships>

- Ipsos (2022b), "Press release: attitudes towards same-sex relationships shift towards greater inclusivity in Singapore", available at: https://www.ipsos.com/sites/default/files/ct/news/documents/2022-06/Ipsos-Report_Attitudes-towards-same-sex-relationships-in-SG_June-2022.pdf
- Jackson, S.D. and Mohr, J.J. (2016), "Conceptualizing the closet: differentiating stigma concealment and nondisclosure processes", *Psychology of Sexual Orientation and Gender Diversity*, Vol. 3 No. 1, pp. 80-92, doi: [10.1037/sgd0000147](https://doi.org/10.1037/sgd0000147).
- Karanikola, M.N.K., Lyberg, A., Holm, A.L. and Severinsson, E. (2018), "The association between deliberate self-harm and school bullying victimization and the mediating effect of depressive symptoms and self-stigma: a systematic review", *BioMed Research International*, Vol. 2018, p. 4745791, doi: [10.1155/2018/4745791](https://doi.org/10.1155/2018/4745791).
- King, M., McKeown, E., Warner, J., Ramsay, A., Johnson, K., Cort, C., Wright, L., Blizard, R. and Davidson, O. (2003), "Mental health and quality of life of gay men and lesbians in England and Wales: controlled, cross-sectional study", *British Journal of Psychiatry*, Vol. 183, pp. 552-558, doi: [10.1192/bjp.183.6.552](https://doi.org/10.1192/bjp.183.6.552).
- Kok, L.P., Ang, Y.G., Fong, Y.H. and Siew, S.H. (1991), "Profile of a homosexual in Singapore", *Singapore Medical Journal*, Vol. 32 No. 6, pp. 403-408, available at: <https://www.ncbi.nlm.nih.gov/pubmed/1788597>
- Krieger, T., Zimmermann, J., Huffziger, S., Uhl, B., Diener, C., Kuehner, C. and Grosse Holtforth, M. (2014), "Measuring depression with a well-being index: further evidence for the validity of the WHO well-being index (WHO-5) as a measure of the severity of depression", *Journal of Affective Disorders*, Vol. 156, pp. 240-244, doi: [10.1016/j.jad.2013.12.015](https://doi.org/10.1016/j.jad.2013.12.015).
- Lea, T., de Wit, J. and Reynolds, R. (2014), "Minority stress in lesbian, gay, and bisexual young adults in Australia: associations with psychological distress, suicidality, and substance use", *Archives of Sexual Behavior*, Vol. 43 No. 8, pp. 1571-1578, doi: [10.1007/s10508-014-0266-6](https://doi.org/10.1007/s10508-014-0266-6).
- Lee, H.L. (2022), "National day rally speech, 21 August 2022", available at: <https://www.pmo.gov.sg/Newsroom/National-Day-Rally-2022-English>
- Lee Badgett, M.V., Durso, L.E., Kastanis, A. and Mallory, C. (2013), "The business impact of LGBT-supportive workplace policies".
- Lee Badgett, M.V., Waaldijk, K. and Rodgers, Y. (2019), "The relationship between LGBT inclusion and economic development: macro-level evidence", *World Development*, Vol. 120, pp. 1-14, doi: [10.1016/j.worlddev.2019.03.011](https://doi.org/10.1016/j.worlddev.2019.03.011).
- Lim, V.K. (2002), "Gender differences and attitudes towards homosexuality", *Journal of Homosexuality*, Vol. 43 No. 1, pp. 85-97, doi: [10.1300/J082v43n01_05](https://doi.org/10.1300/J082v43n01_05).
- Lim, D. and Ang, S.B. (2021), "Primary care physicians' knowledge, attitude and perception towards homosexuality in Singapore", *Global Health Journal*, Vol. 5 No. 4, pp. 209-214, doi: [10.1016/j.glohj.2021.11.002](https://doi.org/10.1016/j.glohj.2021.11.002).
- Lim, F.A., Brown, D.V.J. and Kim, J.S.M. (2014), "Addressing health care disparities in the lesbian, gay, bisexual, and transgender population: a review of best practices", *American Journal of Nursing*, Vol. 114 No. 6, pp. 24-34, quiz 35, 45, doi: [10.1097/01.NAJ.0000450423.89759.36](https://doi.org/10.1097/01.NAJ.0000450423.89759.36).
- Lim, A.C., Trau, R.N.C. and Foo, M.-D. (2018), "Task interdependence and the discrimination of gay men and lesbians in the workplace", *Human Resource Management*, Vol. 57 No. 6, pp. 1385-1397, doi: [10.1002/hrm.21912](https://doi.org/10.1002/hrm.21912).
- Lock, J. and Steiner, H. (1999), "Gay, lesbian, and bisexual youth risks for emotional, physical, and social problems: results from a community-based survey", *Journal of the American Academy of Child and Adolescent Psychiatry*, Vol. 38 No. 3, pp. 297-304, doi: [10.1097/00004583-199903000-00017](https://doi.org/10.1097/00004583-199903000-00017).
- Lowe, B., Spitzer, R.L., Grafe, K., Kroenke, K., Quenter, A., Zipfel, S., Buchholz, C., Witte, S. and Herzog, W. (2004), "Comparative validity of three screening questionnaires for DSM-IV depressive disorders and physicians' diagnoses", *Journal of Affective Disorders*, Vol. 78 No. 2, pp. 131-140, doi: [10.1016/s0165-0327\(02\)00237-9](https://doi.org/10.1016/s0165-0327(02)00237-9).

- Mathews, M., Lim, L. and Selvarajan, S. (2019), "IPS Working Papers No. 34-Religion, morality and conservatism in Singapore", available at: <https://lkyspp.nus.edu.sg/docs/default-source/ips/ips-working-paper-34--religion-morality-and-conservatism-in-singapore.pdf>
- Maulod, A. (2021), "Coming home to one's self: butch Muslim masculinities and negotiations of piety, sex, and parenthood in Singapore", *Journal of Homosexuality*, Vol. 68 No. 7, pp. 1106-1143, doi: [10.1080/00918369.2021.1888584](https://doi.org/10.1080/00918369.2021.1888584).
- Mays, V.M. and Cochran, S.D. (2001), "Mental health correlates of perceived discrimination among lesbian, gay, and bisexual adults in the United States", *American Journal of Public Health*, Vol. 91 No. 11, pp. 1869-1876, doi: [10.2105/ajph.91.11.1869](https://doi.org/10.2105/ajph.91.11.1869).
- McConnell, E.A., Birkett, M.A. and Mustanski, B. (2015), "Typologies of social support and associations with mental health outcomes among LGBT youth", *LGBT Health*, Vol. 2 No. 1, pp. 55-61, doi: [10.1089/lgbt.2014.0051](https://doi.org/10.1089/lgbt.2014.0051).
- McConnell, E.A., Janulis, P., Phillips, G. 2nd, Truong, R. and Birkett, M. (2018), "Multiple minority stress and LGBT community resilience among sexual minority men", *Psychology of Sexual Orientation and Gender*, Vol. 5 No. 1, pp. 1-12, doi: [10.1037/sgd0000265](https://doi.org/10.1037/sgd0000265).
- McLaren, S., Gibbs, P.M. and Watts, E. (2013), "The interrelations between age, sense of belonging, and depressive symptoms among Australian gay men and lesbians", *Journal of Homosexuality*, Vol. 60 No. 1, pp. 1-15, doi: [10.1080/00918369.2013.735933](https://doi.org/10.1080/00918369.2013.735933).
- Meyer, I.H. (1995), "Minority stress and mental health in gay men", *Journal of Health and Social Behavior*, Vol. 36 No. 1, pp. 38-56, doi: [10.2307/2137286](https://doi.org/10.2307/2137286).
- Meyer, I.H. (2003), "Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence", *Psychological Bulletin*, Vol. 129 No. 5, pp. 674-697, doi: [10.1037/0033-2909.129.5.674](https://doi.org/10.1037/0033-2909.129.5.674).
- Ministry of Health Singapore (Epidemiology and Disease Control Division) (2007), "National health surveillance survey 2007", available at: <https://www.moh.gov.sg/resources-statistics/reports/national-health-surveillance-survey-2007>
- Ministry of Health Singapore (2022), "Update on the inter-agency Taskforce on mental health and well-being, 5th jul 2022", available at: <https://www.moh.gov.sg/news-highlights/details/update-on-the-inter-agency-taskforce-on-mental-health-and-well-being>
- Moagi, M.M., van Der Wath, A.E., Jiyane, P.M. and Rikhotso, R.S. (2021), "Mental health challenges of lesbian, gay, bisexual and transgender people: an integrated literature review", *Health SA = SA Gesondheid*, Vol. 26, p. 1487, doi: [10.4102/hsag.v26i0.1487](https://doi.org/10.4102/hsag.v26i0.1487).
- Mule, N.J., Ross, L.E., Deeprose, B., Jackson, B.E., Daley, A., Travers, A. and Moore, D. (2009), "Promoting LGBT health and wellbeing through inclusive policy development", *International Journal for Equity in Health*, Vol. 8, p. 18, doi: [10.1186/1475-9276-8-18](https://doi.org/10.1186/1475-9276-8-18).
- Ng, C.W., Tan, W.S., Gunapal, P.P., Wong, L.Y. and Heng, B.H. (2014), "Association of socioeconomic status (SES) and social support with depressive symptoms among the elderly in Singapore", *Annals Academy of Medicine Singapore*, Vol. 43 No. 12, pp. 576-587, available at: <http://www.ncbi.nlm.nih.gov/pubmed/25588916>
- NLCS Research Network. (2016), "The National LGBT census 2013 in Singapore – information for community needs assessment", *8th International Conference on Social Work in Health and Mental Health, Singapore*.
- Okechukwu, C.A., Souza, K., Davis, K.D. and de Castro, A.B. (2014), "Discrimination, harassment, abuse, and bullying in the workplace: contribution of workplace injustice to occupational health disparities", *American Journal of Industrial Medicine*, Vol. 57 No. 5, pp. 573-586, doi: [10.1002/ajim.22221](https://doi.org/10.1002/ajim.22221).
- Ong, C., Tan, R.K.J., Le, D., Tan, A., Tyler, A., Tan, C., Kwok, C., Banerjee, S. and Wong, M.L. (2021), "Association between sexual orientation acceptance and suicidal ideation, substance use, and internalised homophobia amongst the Pink Carpet Y cohort study of young gay, bisexual, and queer men in Singapore", *BMC Public Health*, Vol. 21 No. 1, p. 971, doi: [10.1186/s12889-021-10992-6](https://doi.org/10.1186/s12889-021-10992-6).

- Oogachaga Counselling and Support (2012), "Impact of homophobia and transphobia on LGBTQ individuals in Singapore: summary report", available at: <https://oogachaga.com/impact-of-homophobia-transphobia>
- Oswin, N. (2010), "The modern model family at home in Singapore: a queer geography", *Transactions of the Institute of British Geographers*, Vol. 35 No. 2, pp. 256-268, doi: [10.1111/j.1475-5661.2009.00379.x](https://doi.org/10.1111/j.1475-5661.2009.00379.x).
- Oswin, N. (2019), *Global City Futures: Desire and Development in Singapore*, University of Georgia Press, Athens, GA, Vol. 44.
- Pachankis, J.E., Mahon, C.P., Jackson, S.D., Fetzner, B.K. and Branstrom, R. (2020), "Sexual orientation concealment and mental health: a conceptual and meta-analytic review", *Psychological Bulletin*, Vol. 146 No. 10, pp. 831-871, doi: [10.1037/bul0000271](https://doi.org/10.1037/bul0000271).
- Patel, S.A., Bangorn, S., Aramrattana, A., Limaye, R., Celentano, D.D., Lee, J. and Sherman, S.G. (2013), "Elevated alcohol and sexual risk behaviors among young Thai lesbian/bisexual women", *Drug and Alcohol Dependence*, Vol. 127 Nos 1-3, pp. 53-58, doi: [10.1016/j.drugalcdep.2012.06.010](https://doi.org/10.1016/j.drugalcdep.2012.06.010).
- Picco, L., Subramaniam, M., Abdin, E., Vaingankar, J.A. and Chong, S.A. (2017), "Gender differences in major depressive disorder: findings from the Singapore Mental Health Study", *Singapore Medical Journal*, Vol. 58 No. 11, pp. 649-655, doi: [10.11622/medj.2016144](https://doi.org/10.11622/medj.2016144).
- Pink Dot, S.G. and Oogachaga (2020), "Joint submission (JS3) for the 38th session of the UPR working group - review of Singapore", available at: <https://oogachaga.com/upr-report-2021>
- Prince, M., Patel, V., Saxena, S., Maj, M., Maselko, J., Phillips, M.R. and Rahman, A. (2007), "No health without mental health", *The Lancet*, Vol. 370 No. 9590, pp. 859-877, doi: [10.1016/s0140-6736\(07\)61238-0](https://doi.org/10.1016/s0140-6736(07)61238-0).
- Radics, G. (2015), "Section 377A in Singapore and the (de)criminalization of homosexuality", *Reconstruction: Studies in Contemporary Culture*, Vol. 15 No. 2, available at: <http://reconstruction.eserver.org/Issues/152/Radics.shtml>
- Ramdas, K. (2020), "Negotiating LGBTQ rights in Singapore: the margin as a place of refusal", *Urban Studies*, Vol. 58 No. 7, pp. 1448-1462, doi: [10.1177/0042098020962936](https://doi.org/10.1177/0042098020962936).
- Rew, L., Whittaker, T.A., Taylor-Seehafer, M.A. and Smith, L.R. (2005), "Sexual health risks and protective resources in gay, lesbian, bisexual, and heterosexual homeless youth", *Journal for Specialists in Pediatric Nursing*, Vol. 10 No. 1, pp. 11-19, doi: [10.1111/j.1088-145x.2005.00003.x](https://doi.org/10.1111/j.1088-145x.2005.00003.x).
- Roberts, L.M. and Christens, B.D. (2021), "Pathways to well-being among LGBT adults: sociopolitical involvement, family support, outness, and community connectedness with race/ethnicity as a moderator", *American Journal of Community Psychology*, Vol. 67 Nos 3-4, pp. 405-418, doi: [10.1002/ajcp.12482](https://doi.org/10.1002/ajcp.12482).
- Samara, M., Da Silva Nascimento, B., El-Asam, A., Hammuda, S. and Khattab, N. (2021), "How can bullying victimisation lead to lower academic achievement? A systematic review and meta-analysis of the mediating role of cognitive-motivational factors", *International Journal of Environmental Research and Public Health*, Vol. 18 No. 5, doi: [10.3390/ijerph18052209](https://doi.org/10.3390/ijerph18052209).
- Sandfort, T.G., Bakker, F., Schellevis, F.G. and Vanwesenbeeck, I. (2006), "Sexual orientation and mental and physical health status: findings from a Dutch population survey", *American Journal of Public Health*, Vol. 96 No. 6, pp. 1119-1125, doi: [10.2105/AJPH.2004.058891](https://doi.org/10.2105/AJPH.2004.058891).
- Sayoni (2011), "Sayoni queer women survey 2010 report for queer women living in Singapore", available at: <https://www.sayoni.com/research-and-advocacy/publications/send/2-surveys/5-sayoni-survey-2010>
- Sayoni. (2018), "Violence and discrimination against LBTQ women in Singapore", ISBN 9789811402272.
- Sayoni (2019), "NGO report on violence and discrimination against LGBTQ children in Singapore: additional submission to the Committee on the Rights of the Child for the 81st session", available at: <https://www.sayoni.com/research-and-advocacy/publications/send/4-shadow-reports/14-child-rights-shadow-report-2018>

- Simons, L., Schrager, S.M., Clark, L.F., Belzer, M. and Olson, J. (2013), "Parental support and mental health among transgender adolescents", *Journal of Adolescent Health*, Vol. 53 No. 6, pp. 791-793, doi: [10.1016/j.jadohealth.2013.07.019](https://doi.org/10.1016/j.jadohealth.2013.07.019).
- Singapore Department of Statistics (2021), "Population trends 2021", available at: <https://www.singstat.gov.sg/-/media/files/publications/population/population2021.pdf>
- Sischka, P.E., Costa, A.P., Steffgen, G. and Schmidt, A.F. (2020), "The WHO-5 well-being index – validation based on item response theory and the analysis of measurement invariance across 35 countries", *Journal of Affective Disorders Reports*, Vol. 1, doi: [10.1016/j.jadr.2020.100020](https://doi.org/10.1016/j.jadr.2020.100020).
- Sivasubramanian, M., Mimiaga, M.J., Mayer, K.H., Anand, V.R., Johnson, C.V., Prabhugate, P. and Safren, S.A. (2011), "Suicidality, clinical depression, and anxiety disorders are highly prevalent in men who have sex with men in Mumbai, India: findings from a community-recruited sample", *Psychology Health and Medicine*, Vol. 16 No. 4, pp. 450-462, doi: [10.1080/13548506.2011.554645](https://doi.org/10.1080/13548506.2011.554645).
- Streed, C.G., Grasso, C., Reisner, S.L. and Mayer, K.H. (2020), "Sexual orientation and gender identity data collection: clinical and public health importance", *American Journal of Public Health*, Vol. 110 No. 7, pp. 991-993, doi: [10.2105/ajph.2020.305722](https://doi.org/10.2105/ajph.2020.305722).
- Subramaniam, M., Abdin, E., Picco, L., Vaingankar, J.A. and Chong, S.A. (2014), "Multiple chronic medical conditions: prevalence and risk factors—results from the Singapore Mental Health Study", *General Hospital Psychiatry*, Vol. 36 No. 4, pp. 375-381, doi: [10.1016/j.genhosppsych.2014.03.002](https://doi.org/10.1016/j.genhosppsych.2014.03.002).
- Subramaniam, M., Abdin, E., Vaingankar, J.A., Shafie, S., Chua, B.Y., Sambasivam, R., Zhang, Y.J., Shahwan, S., Chang, S., Chua, H.C., Verma, S., James, L., Kwok, K.W., Heng, D. and Chong, S.A. (2019), "Tracking the mental health of a nation: prevalence and correlates of mental disorders in the second Singapore mental health study", *Epidemiology and Psychiatric Sciences*, Vol. 29, e29, doi: [10.1017/S2045796019000179](https://doi.org/10.1017/S2045796019000179).
- Tan, C.K.K. (2011), "Go home, gay boy! Or, why do Singaporean gay men prefer to 'go home' and not 'come out'?", *Journal of Homosexuality*, Vol. 58 Nos 6-7, pp. 865-882, doi: [10.1080/00918369.2011.581930](https://doi.org/10.1080/00918369.2011.581930).
- Tan, C. (2015), "Pink Dot: cultural and sexual citizenship in gay Singapore", *Anthropological Quarterly*, pp. 969-996, doi: [10.1353/anq.2015.0058](https://doi.org/10.1353/anq.2015.0058).
- Tan, R.K.J. (2019), "Internalized homophobia, HIV knowledge, and HIV/AIDS personal responsibility beliefs: correlates of HIV/AIDS discrimination among MSM in the context of institutionalized stigma", *Journal of Homosexuality*, Vol. 66 No. 8, pp. 1082-1103, doi: [10.1080/00918369.2018.1491249](https://doi.org/10.1080/00918369.2018.1491249).
- Tan, K.P. and Lee, G.J.J. (2007), "Imagining the gay community in Singapore", *Critical Asian Studies*, Vol. 39 No. 2, pp. 179-204, doi: [10.1080/14672710701339311](https://doi.org/10.1080/14672710701339311).
- Tan, R.K.J., Kaur, N., Kumar, P.A., Tay, E. Leong, A., Chen, M.I.C. and Wong, C.S. (2020), "Clinics as spaces of costly disclosure: HIV/STI testing and anticipated stigma among gay, bisexual and queer men", *Culture, Health and Sexuality*, Vol. 22 No. 3, pp. 307-320, doi: [10.1080/13691058.2019.1596313](https://doi.org/10.1080/13691058.2019.1596313).
- Tan, R.K.J., Low, T.Q.Y., Le, D., Tan, A., Tyler, A., Tan, C., Kwok, C., Banerjee, S., Cook, A.R. and Wong, M.L. (2021a), "Experienced homophobia and suicide among young gay, bisexual, transgender, and queer men in Singapore: exploring the mediating role of depression severity, self-esteem, and outness in the Pink carpet Y cohort study", *LGBT Health*, Vol. 8 No. 5, pp. 349-358, doi: [10.1089/lgbt.2020.0323](https://doi.org/10.1089/lgbt.2020.0323).
- Tan, R.K.J., O'Hara, C.A., Koh, W.L., Le, D., Tan, A., Tyler, A., Tan, C., Kwok, C., Banerjee, S. and Wong, M.L. (2021b), "Delineating patterns of sexualized substance use and its association with sexual and mental health outcomes among young gay, bisexual and other men who have sex with men in Singapore: a latent class analysis", *BMC Public Health*, Vol. 21 No. 1, p. 1026, doi: [10.1186/s12889-021-11056-5](https://doi.org/10.1186/s12889-021-11056-5).

- Tan, R.K.J., Yang, D.W.J., Le, D., Tan, A., Tyler, A., Tan, C., Kwok, C., Banerjee, S. and Wong, M.L. (2021c), "Minority statuses and mental health outcomes among young gay, bisexual and queer men in Singapore", *Journal of LGBT Youth*, pp. 1-18, doi: [10.1080/19361653.2021.1940414](https://doi.org/10.1080/19361653.2021.1940414).
- Teh, Y.Y., Munisamy, Y., Wong, P.Y.J., Tan, K., Huang, J. and Au Yong, J. (2015), "Singapore social work practice with lesbian, gay, and bisexual clients", *International Social Work*, Vol. 61 No. 1, pp. 51-65, doi: [10.1177/0020872815603785](https://doi.org/10.1177/0020872815603785).
- Tham, Y.-C. (2022), "Section 377A: constitution will be amended to protect Parliament's right to define marriage, says Shanmugam", *The Straits Times*, available at: <https://www.straitstimes.com/singapore/politics/constitution-will-be-amended-to-protect-parliaments-right-to-define-marriage-shanmugam>
- Topp, C.W., Ostergaard, S.D., Sondergaard, S. and Bech, P. (2015), "The WHO-5 Well-Being Index: a systematic review of the literature", *Psychotherapy and Psychosomatics*, Vol. 84 No. 3, pp. 167-176, doi: [10.1159/000376585](https://doi.org/10.1159/000376585).
- TransgenderSG, Asia Pacific Transgender Network/Transgender Health Research Lab (2020a), "Challenges facing Singapore's transgender community – a qualitative review", available at: <https://transendersg.com/singapore-transgender-survey.pdf>
- TransgenderSG/Sayoni, and Asia Pacific Transgender Network (APTN) (2020b), "Joint submission (JS4) for the 38th session of the UPR working group - review of Singapore", available at: <https://transendersg.com/upr-report.pdf>
- Tsoi, W.F. (1990), "Developmental profile of 200 male and 100 female transsexuals in Singapore", *Archives of Sexual Behavior*, Vol. 19 No. 6, pp. 595-605, doi: [10.1007/BF01542468](https://doi.org/10.1007/BF01542468).
- Tsoi, W.F. (1992), "Male and female transsexuals: a comparison", *Singapore Medical Journal*, Vol. 33 No. 2, pp. 182-185, available at: <https://www.ncbi.nlm.nih.gov/pubmed/1621125>
- United Nations Development Programme (2015), "Sustainable development goals. Goal 3: good health and well-being", available at: <https://sustainabledevelopment.un.org/sdg3>
- Vaingankar, J.A., Subramaniam, M., Abdin, E., Picco, L., Phua, A., Chua, B.Y. and Chong, S.A. (2013), "Socio-demographic correlates of positive mental health and differences by depression and anxiety in an asian community sample", *Annals Academy of Medicine Singapore*, Vol. 42 No. 10, pp. 514-523, available at: <https://annals.edu.sg/socio-demographic-correlates-of-positive-mental-health-and-differences-by-depression-and-anxiety-in-an-asian-community-sample/>
- Vaingankar, J.A., Subramaniam, M., Tan, L.W.L., Abdin, E., Lim, W.Y., Wee, H.L., Chong, S.A. and van Dam, R.M. (2018), "Psychometric properties and population norms of the positive mental health instrument in a representative multi-ethnic Asian population", *BMC Medical Research Methodology*, Vol. 18 No. 1, p. 29, doi: [10.1186/s12874-018-0487-9](https://doi.org/10.1186/s12874-018-0487-9).
- Valentine, S.E. and Shipherd, J.C. (2018), "A systematic review of social stress and mental health among transgender and gender non-conforming people in the United States", *Clinical Psychology Review*, Vol. 66, pp. 24-38, doi: [10.1016/j.cpr.2018.03.003](https://doi.org/10.1016/j.cpr.2018.03.003).
- Webster, J.R., Adams, G.A., Maranto, C.L., Sawyer, K. and Thoroughgood, C. (2018), "Workplace contextual supports for LGBT employees: a review, meta-analysis, and agenda for future research", *Human Resource Management*, Vol. 57 No. 1, pp. 193-210, doi: [10.1002/hrm.21873](https://doi.org/10.1002/hrm.21873).
- Wee, L.E., Daniel, P., Sim, A., Lee, R., Tay, S.M., Luo, N. and Koh, G.C.H. (2017), "Health-related quality of life in a low-socioeconomic status public rental-flat population in Singapore", *Applied Research in Quality of Life*, Vol. 13 No. 1, pp. 179-195, doi: [10.1007/s11482-017-9519-6](https://doi.org/10.1007/s11482-017-9519-6).
- Wee, L.E., Yong, Y.Z., Chng, M.W., Chew, S.H., Cheng, L., Chua, Q.H., Yek, J.J., Lau, L.J., Anand, P., Hoe, J.T., Shen, H.M. and Koh, G.C. (2014), "Individual and area-level socioeconomic status and their association with depression amongst community-dwelling elderly in Singapore", *Ageing and Mental Health*, Vol. 18 No. 5, pp. 628-641, doi: [10.1080/13607863.2013.866632](https://doi.org/10.1080/13607863.2013.866632).
- Whitbeck, L.B., Chen, X., Hoyt, D.R., Tyler, K.A. and Johnson, K.D. (2004), "Mental disorder, subsistence strategies, and victimization among gay, lesbian, and bisexual homeless and runaway adolescents", *The Journal of Sex Research*, Vol. 41 No. 4, pp. 329-342, doi: [10.1080/0022449040952240](https://doi.org/10.1080/0022449040952240).

- Wilson, C. and Cariola, L.A. (2019), "LGBTQI+ youth and mental health: a systematic review of qualitative research", *Adolescent Research Review*, Vol. 5 No. 2, pp. 187-211, doi: [10.1007/s40894-019-00118-w](https://doi.org/10.1007/s40894-019-00118-w).
- Winter, S., Davis-McCabe, C., Russell, C., Wilde, D., Chu, T., Suparak, P. and Wong, J. (2018), "Denied Work: an audit of employment discrimination on the basis of gender identity in South-East Asia", available at: https://www.asia-pacific.undp.org/content/rbap/en/home/library/democratic_governance/hiv_aids/denied-work.html
- Wong, C.S., Lye, D.C., Lee, C.C. and Leo, Y.S. (2011), "Acute HIV infection in Singapore: predominance of men who have sex with men", *Singapore Medical Journal*, Vol. 52 No. 12, pp. 860-863, available at: <https://www.ncbi.nlm.nih.gov/pubmed/22159926>
- World Health Organization (1998), "Well-being measures in primary health care/the DEPCARE project: report on a WHO meeting, Stockholm, Sweden 12-13 February 1998", *Paper presented at the Well-being measures in primary health care/the DEPCARE project: report on a WHO meeting*, Stockholm, Sweden 12-13 February 1998.
- Yi, H., Lee, H., Park, J., Choi, B. and Kim, S. (2017), "Health disparities between lesbian, gay, and bisexual adults and the general population in South Korea: rainbow connection project I", *Epidemiology and Health*, e2017046, doi: [10.4178/epih.e2017046](https://doi.org/10.4178/epih.e2017046).
- Yue, A. (2007), "Creative queer Singapore: the illiberal pragmatics of cultural production", *Gay and Lesbian Issues and Psychology Review*, Vol. 3 No. 3, pp. 149-160.

(The Appendix follows overleaf)

Appendix

654

Variable	Total N (%)	WHO-5 < 13 N (%)	p-value ¹	Adjusted OR (95% CI) ²	p-value ³
<i>Home and family setting</i>					
<i>Revealed LGBT identity to</i>					
Most or all friends and family	513 (22.2)	155 (30.2)	<0.0001	1	
At least some friends or some family	807 (34.9)	337 (41.8)		1.597 (1.261, 2.022)	<0.0001
At least some friends but not any family	883 (38.2)	395 (44.7)		1.771 (1.402, 2.237)	<0.0001
Neither friends nor family	110 (4.8)	60 (54.5)		2.739 (1.798, 4.172)	<0.0001
<i>Parental acceptance of LGBT identity⁴</i>					
Accepting	524 (40.0)	162 (30.9)		1	
Neutral	173 (13.2)	60 (34.7)		1.153 (0.800, 1.662)	0.446
Non-accepting	612 (46.8)	276 (45.1)		1.744 (1.355, 2.244)	<0.0001
<i>Recent conflict at home (past 6 months)⁵</i>					
No	2,150 (91.5)	836 (38.9)		1	
Yes	200 (8.5)	125 (62.5)		2.530 (1.873, 3.416)	<0.0001
<i>Lifetime homelessness related to conflict at home⁶</i>					
No	1932 (82.2)	744 (38.5)			
Yes	418 (17.8)	217 (51.9)	<0.0001	1.770 (1.429, 2.192)	<0.0001
<i>Workplace setting</i>					
<i>Revealed LGBT identity to peers</i>					
Many or all	503 (25.8)	151 (30.0)	<0.0001	1	
Some or a few	904 (46.3)	398 (44.0)		1.812 (1.436, 2.286)	<0.0001
None	545 (27.9)	254 (46.6)		2.084 (1.614, 2.692)	<0.0001
<i>Bullying/discrimination related to LGBT identity (past 12 months)⁷</i>					
Neither experienced nor witnessed bullying/discrimination	1,251 (74.3)	486 (38.8)	<0.0001		
Witnessed bullying/discrimination only	222 (13.2)	94 (42.3)		1.150 (0.860, 1.538)	0.345
Experienced bullying/discrimination	211 (12.5)	116 (55.0)		1.846 (1.373, 2.481)	<0.0001
<i>Educational setting</i>					
<i>Revealed LGBT identity to peers</i>					
Many or all	74 (20.4)	27 (36.5)	0.1562	1	
Some or a few	168 (46.3)	76 (45.2)		1.429 (0.813, 2.513)	0.215
None	121 (33.3)	42 (34.7)		0.921 (0.503, 1.686)	0.790
<i>Bullying/discrimination related to LGBT identity (past 12 months)⁷</i>					
Neither experienced nor witnessed bullying/discrimination	67 (18.3)	20 (29.9)	0.0029		
Witnessed bullying/discrimination only	88 (24.0)	26 (29.5)		0.986 (0.492, 1.976)	0.968
Experienced bullying/discrimination	211 (57.7)	100 (47.4)		2.115 (1.174, 3.813)	0.013

Note(s):¹ p-value from chi-squared (χ^2) test

²Multivariable logistic regression was used to estimate the odds ratio of low WHO-5 (<13 of 25), adjusted for age

³p-value from Wald test

⁴Excludes "Not applicable", "unsure" responses (n = 1,401)

⁵Experienced conflict, harassment, threats, or felt unsafe at home in the past 6 months

⁶Ever made homeless or ever left home due to conflict, harassment, threats or feeling unsafe at home

⁷Experienced or witnessed at least one form of bullying/discrimination related to LGBT identity (including verbal abuse, bullying, being asked to change appearance or behaviour, physically or sexually assaulted, discriminated against or excluded from job assignments/promotions or dismissed from employment)

Table S1.

Psychosocial and relational factors associated with poor mental well-being (WHO-5 <13 of 25)

Social participation ¹	Participated: Yes	Low WHO-5 (<13 of 25) by participation status (yes/No)			Odds of low WHO-5 (<13 of 25) Adjusted OR ^{3,4}	
		Yes (%)	No (%)	<i>p</i> -value ²		<i>p</i> -value ⁵
At least 1 type of LGBT-oriented organisation, activity, or business	2,242 (95.4)	40.5	48.1	0.116	0.746 (0.506, 1.100)	0.139
LGBT community organizations or groups	556 (23.7)	33.6	43.1	<0.0001	0.684 (0.560, 0.835)	<0.0001
LGBT community activities or events	1,293 (55.0)	36.0	46.9	<0.0001	0.635 (0.538, 0.750)	<0.0001
Parties, clubs, bars (LGBT-oriented)	1,475 (62.8)	38.6	44.7	0.004	0.792 (0.668, 0.938)	0.007
Saunas or spas (LGBT-oriented)	605 (25.7)	40.5	41.0	0.817	1.062 (0.874, 1.291)	0.545
Online networking platforms (LGBT-oriented)	1,542 (65.6)	41.8	39.1	0.203	1.151 (0.966, 1.371)	0.116
Only online platforms (LGBT-oriented)	247 (10.5)	49.0	39.9	0.006	1.423 (1.092, 1.855)	0.009

Note(s): ¹ Respondents selected one or more options as applicable
² *p*-value from chi-squared (χ^2) test
³ AOR, odds ratio of low WHO-5 (<13 of 25), adjusted for age
⁴ Reference group: Did not participate
⁵ *p*-value from Wald test

Table S2. Protective effects of community and social participation on mental well-being

Variable	Recent conflict (past 6 months) ¹			Lifetime homelessness related to conflict at home ²		
	Total <i>N</i> (%)	Yes <i>N</i> (%)	<i>p</i> -value ³	Total <i>N</i> (%)	Yes <i>N</i> (%)	<i>p</i> -value ³
Parental acceptance of LGBT identity ⁴			<0.0001			0.001
Accepting	524 (40.0)	24 (4.6)		524 (40.0)	88 (16.8)	
Neutral	173 (13.2)	13 (7.5)		173 (13.2)	39 (22.5)	
Non-accepting	612 (46.8)	90 (14.7)		612 (46.8)	157 (25.7)	

Note(s): ¹ Experienced conflict, harassment, threats, or felt unsafe at home in the past 6 months
² Ever made homeless or ever left home due to conflict, harassment, threats, or feeling unsafe at home
³ *p*-value from chi-squared (χ^2) test
⁴ Analysis excludes “Not applicable”, “unsure” responses for the question about parental acceptance of LGBT identity

Table S3. Relationship between parental acceptance of LGBT identity and experience of conflict at home

Corresponding author

Mathia Lee can be contacted at: MathiaLeeSg@gmail.com

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgrouppublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com