University Library

MINERVA ACCESS

A gateway to Melbourne's research publications

Minerva Access is the Institutional Repository of The University of Melbourne

Author/s:
Balakrishnan, K;Haregu, T;Hill, AO;Young, JT;Armstrong, G

Title:
Discrimination experienced by sexual minority males in Australia: Associations with suicidal ideation and depressive symptoms

Date:
2022-05-15

Citation:
Balakrishnan, K., Haregu, T., Hill, A. O., Young, J. T. & Armstrong, G. (2022). Discrimination experienced by sexual minority males in Australia: Associations with suicidal ideation and depressive symptoms. Journal of Affective Disorders, 305, pp.173-178. https://doi.org/10.1016/j.jad.2022.03.009.

Persistent Link:
https://hdl.handle.net/11343/332585

Introduction

Sexual minorities have a higher risk of experiencing depressive symptoms, suicidal ideation and suicide attempts compared to heterosexual males (Almeida *et al.*, 2009; Brennan *et al.*, 2010; di Giacomo *et al.*, 2018; Swannell *et al.*, 2016). For example, a 2016 meta-analysis of general population surveys reported lifetime prevalence of suicide attempts of 11% among lesbian, gay and bisexual adults compared to 4% among heterosexual participants (Hottes *et al.*, 2016). Similarly, in Australia, studies that have examined this phenomenon have found that sexual minority individuals have an increased risk of depressive symptoms, psychological distress, and suicidality (Bowring *et al.*, 2015; Lea *et al.*, 2014; Roberts *et al.*, 2018; D. M. Skerrett *et al.*, 2016; Delaney Michael Skerrett *et al.*, 2014; Swannell *et al.* 2016; Taylor *et al.*, 2019).

While there is good evidence establishing the higher rates of suicidality and poor mental health among sexual minority people, there is little research into the social determinants of this disparity in Australia, and existing studies lack data from a larger, more representative sample. The role of discrimination as a social determinant of poor mental health among Australian minority groups is an important new area of enquiry. Regardless of definition, discrimination is increasingly recognised as an important area of public health research, and systematic reviews and meta-analyses consistently highlight associations between discrimination and increased health inequities (Paradies *et al.*, 2015; Priest *et al.*, 2013), including inequities in psychological wellbeing (Elias & Paradies, 2016; Haregu T *et al.*, 2021; Schmitt *et al.*, 2014).

Discrimination has been under-examined as a social determinant of the poor mental health experienced by sexual minorities (Moagi *et al.*, 2021). Although there has been increased visibility of sexual and gender minority issues in many countries over the past decades, and public attitudes towards same-sex relationships have improved along with anti-discrimination advances like marriage equality legislation, discrimination remains a persistent issue and source of distress (Almeida *et al.*, 2009). In the United States, these experiences of discrimination occur across the lifespan, peaking in early adulthood and again in mid-life (Rice *et al.*, 2021).

Furthermore, sexual minority individuals are more frequently victims of physical or threatened violence than heterosexual individuals (McNair *et al.*, 2017), behaviours that have ties to stigma and discrimination. Such experiences of abuse are associated with increased suicidal ideation among sexual minority individuals (Abelson *et al.*, 2006).

Although some studies have observed that factors such as homophobia, biphobia and discrimination are associated with negative mental health outcomes among sexual minority individuals (Choi *et al.*, 2019; Irwin *et al.*, 2014; McDermott *et al.*, 2018; Salway *et al.*, 2018), there is a paucity of research on this topic, especially from Australia (D. M. Skerrett *et al.*, 2015). Furthermore, a significant proportion of the research on discrimination among sexual minority individuals is from convenience samples (Martin-Storey *et al.*, 2021) and/or surveys targeted at sexual minority communities (Borgona N & McDermott R, 2020; Chan & Fung, 2021). Therefore, we aimed to extend the evidence-base by analysing data from a large general population sample of adult males aged 18 to 55 years, that were collected as part of the first wave of The Australian Longitudinal Study on Male Health. Specifically, the objectives of our analyses were to: 1) assess whether discrimination was independently associated with suicidal ideation and depressive symptoms among sexual minority males, and 2) assess the potential mediation role of discrimination in the associations between sexual minority status, and suicidal ideation and depressive symptoms.

Methods

Data source

This study involves secondary analyses of data from The Australian Longitudinal Study on Male Health (the Ten to Men study), a large cohort study of Australian males aged 10-55 years old. This paper presents analysis of data collected in 2013-2014 for the baseline wave of the study only, as discrimination was not measured in subsequent waves of data collection. Details of the study design and data collection methods of the Ten to Men study have been published elsewhere (Currier D *et al.*, 2016; Pirkis *et al.*, 2016). In brief, the Ten to Men study used a multi-stage stratified cluster sampling to recruit Australian males from households in Australian Statistical Geographical Standard (ASGS) major city, inner regional and outer regional areas of

Australia. A total of 104,484 households were approached in 2013 and 2014, from which 15,988 Australian males were recruited, resulting in a response fraction of 35% among confirmed eligible males. Eligible participants were males aged 10 to 55 years at the time of recruitment, who were Australian citizens or permanent residents and had a sufficient understanding of English to provide informed consent and to complete the self-administered questionnaire. Our analyses focused on participants aged 18-55 years as those aged under 18 years were not asked about discrimination and those younger than 14 were also not asked about their sexual identity. This yielded a cohort of 13,230 males.

Variables and measurement

Sexual orientation

Participants were asked 'do you think of yourself as ___' with the response options: heterosexual, bisexual, homosexual, unsure and other. No definitions for these sexual orientations were provided within the survey.

Depressive symptoms and suicidality

Recent depressive symptoms were assessed using the Patient Health Questionaire-9 (PHQ-9), a standardised screening tool with good psychometric properties; this tool questions participants about frequency of experiencing depressive symptoms including anhedonia, low mood and reduced concentration, and calculated a total depression severity score from 0 to 27. Participants scoring 10 or above were categorised as 'yes', or positive for recent depressive symptoms, as a score of 10 is the threshold marking the lower limit of moderate depressive symptoms (Kroenke *et al.*, 2001).

Lifetime prevalence of suicide attempt was assessed by self-report; participants were asked '*have you ever tried to kill yourself?'* with the response options '*yes'* and '*no'*. Recent suicidal ideation was assessed using item 9 on the PHQ-9, an item frequently used to measure this construct; item 9 questions how often participants had been bothered by '*thoughts you would be better off dead or of hurting yourself in some way*' in the previous two weeks (Kroenke *et al.*, 2001; Richardson *et al.*, 2010).

Perceived discrimination

Participants were asked how often they had experienced discrimination over the past two years, with response options: very often, fairly often, occasionally, rarely and

never. We created a binary variable; occasionally, fairly often and very often were categorised as ‘yes’, and rarely and never as ‘no’.

Data analysis

All data analyses were conducted in Stata version 16.0 (StataCorp, 2019) and accounted for the complex multistage sampling design and unequal probability of selection. Weighted proportions and their 95% confidence intervals were used to describe the socio-demographic characteristics of the study participants, discrimination, suicidal ideation, and depressive symptoms. Prevalence data were disaggregated by sexual orientation, and Chi-square tests were used to assess the differences across groups. A p-value of <0.05 was considered statistically significant. For all additional analyses, the homosexual and bisexual groups were combined as a single group to ensure adequate statistical power, with the heterosexual group used as comparator.

We applied a multi-step approach to our regression analyses, based on our prior approach to examining the associations between mental health and discrimination among Aboriginal and Torres Strait Islander Peoples (Haregu T *et al.*, 2021). We used Poisson regression with robust standard errors (Zou, 2004) (with robust variance estimate) to examine the association between sexual orientation and perceived discrimination. In model 1, we assessed the unadjusted association. In model 2, we adjusted for age, education, household income, SEIFA, employment and remoteness. In model 3, we additionally adjusted for alcohol misuse and illicit substance use.

Similarly, we assessed sexual orientation and discrimination as correlates of recent suicidal ideation and lifetime suicidal attempt using Poisson regression with robust variance estimates. As the distribution of PHQ-9 scores exhibited overdispersion and excess zeros (Tang *et al.*, 2018), zero-inflated negative binomial regression was used to assess sexual orientation and discrimination as correlates of depressive symptoms. We used Stata program zinb models for this purpose and inflated parameters for sexual orientation and discrimination and presented incident rate ratios along with their corresponding 95% confidence intervals and p-values. We followed the same multi-step approach as outlined above, while adding model 4 in

which we added discrimination (when sexuality is an exposure of interest) and sexuality (when discrimination is an exposure of interest).

To estimate the proportion of the association between sexual minority status and poor mental health outcomes that might be explained by discrimination, we used the concept of the additive model (i.e. the total effect equals the sum of direct and indirect effect) (Hafeman, 2009). The proportion of association that could be explained by discrimination was computed as the difference between beta-coefficient (β3) in model 3 and model 4 (β4) divided by the beta-coefficient in model 3 (β3) times 100%; proportion explained = [(β3 - β4)/ β3]*100%.

Results

Participant characteristics

Participant characteristics disaggregated by sexual orientation are shown in Table 1. A total of 12,345 males identified as heterosexual (93.2%), 195 as bisexual (1.5%), 215 as homosexual (1.6%) and the remaining 475 as unsure or other (2.0% and 1.6% respectively). There were several differences in participant characteristics across the sexual orientation groups. Compared to heterosexual males, a higher proportion of the bisexual and homosexual sub-sample were younger, never married, in the lower income category, less educated, less employed, and engaging in harmful use of substances. Alcohol misuse and remoteness did not differ between sub-groups.

Statistically significant differences were observed in the prevalence of perceived discrimination ($p<0.001$) across sexual orientation categories, with the highest prevalence among bi (29.3%) and homosexual (40.4%) males, and the lowest prevalence among heterosexual males (18.6%). Differences were also observed in the prevalence of poor mental health indicators across the sexual orientation categories, with a higher prevalence of recent suicidal ideation, lifetime suicide attempts and recent depressive symptoms among bisexual and homosexual males.

Discrimination as a potential mediator of the association between sexual minority status and mental health outcomes

Table 2 presents results from Poisson regression with robust standard errors and zero-inflated negative binomial regression models examining the association

between sexual minority status, discrimination, suicidality and depressive symptoms. We observed that sexual minority males (i.e. bisexual/homosexual males) had 1.88 (95% CI: 1.59, 2.24; p<0.001) times higher risk of experiencing perceived discrimination than heterosexual males, after adjusting for sociodemographic characteristics, alcohol misuse and illicit substance use.

After adjusting for sociodemographic and substance use characteristics, bisexual/homosexual males had 1.51 (95% CI:1.12,2.05) times higher risk of recent suicidal ideation compared to heterosexual males (p=0.008). When perceived discrimination was included in the model, the rate ratio for the association between sexual minority status and suicidal ideation attenuated to 1.36 (95% CI:0.99,1.85; P=0.051), with analysis of β-coefficients suggesting that discrimination explained 25.9% of the association between sexual minority status and recent suicidal ideation. A similar pattern was observed for lifetime suicide attempt, with a small attenuation in the rate ratio from 2.09 (95% CI: 1.48, 2.94) to 1.86 (95% CI: 1.32, 2.63). Analysis of β-coefficients suggested that discrimination explained 15.5% of the association between sexual minority status and lifetime suicide attempt.

After the same adjustment as above, bisexual/homosexual males had 1.34 (95% CI:1.19,1.50) times higher risk of recent depressive symptoms compared to heterosexual males (p>0.001). When perceived discrimination was included in the model, the rate ratio for the association between sexual minority status and recent depressive symptoms decreased to 1.25 (95% CI:1.12,1.40). Analysis of β-coefficients suggested that discrimination explained 22.7% of the association between sexual minority identification and recent depressive symptoms.

Discussion

Our study used a large general population sample to examine experiences of perceived discrimination among sexual minority males and the potential mediation role of discrimination between sexual minority status and poor mental health. We found a statistically significant association between sexual minority status and perceived discrimination, recent suicidal ideation, lifetime suicide attempt and depressive symptoms. Our findings suggest that the proportion of the association between sexual minority status and recent suicidal ideation, lifetime suicide attempt

and depressive symptoms that could be explained by discrimination was small to moderate.

Our findings are consistent with the minority stress theory which asserts that minority groups experience a high level of discrimination resulting in negative health impacts through various pathways, including stress, maladaptive behaviours, and poor access to health and social services (Dentato *et al.*, 2013; Meyer, 2003). Social stress models also propose that prejudice, discrimination and other related social ills place an additional burden on socially disadvantaged populations, which can increase the risk of mental health problems (Schwartz & Meyer, 2010). Our findings are also consistent with studies that report the potential mediating role of minority stress factors, including discrimination, on the association between minority status and mental health outcomes (Baams *et al.*, 2015; Bränström, 2017; Calabrese *et al.*, 2015; Chang *et al.*, 2020).

The greater risk of poor mental health experienced by sexual minority individuals in our study, which aligns with prior findings both in Australia and internationally (Bowring *et al.*, 2015; Lea *et al.*, 2014; Roberts *et al.*, 2018; D. M. Skerrett *et al.*, 2016; Delaney Michael Skerrett *et al.*, 2014; Swannell *et al.,* 2016; Taylor *et al.*, 2019), indicates an urgent need for strategies to address this disparity. Sexual minority-specific mental health and crisis services appear may play a role (Goldbach *et al.*, 2019). Furthermore, interventions to improve mainstream mental health services for sexual minorities are warranted, as are tailored interventions that address the often complex individual, familial and environmental risk factors for poor mental health in this sub-population (Meader & Chan, 2017).

Our findings indicate that, despite an improving social climate of acceptance towards sexual minorities, perceived discrimination is a common experience for sexual minority males in Australia and this experience may contribute to suicidality and depressive symptoms. Our findings support broad assertions that discrimination is a social determinant of the mental health of sexual minority individuals, which has important implications for programs seeking to improve their mental health. A Western Australia study found sexual minority individuals rank mental health problems as among their most important health issues, and rated discrimination as the most important social factor influencing the health and wellbeing of sexual

minority Australians (Comfort & McCausland, 2013). Reducing discrimination towards sexual minority individuals may be a promising target for intervention and could potentially provide 'upstream' benefits to the prevention of suicidality and psychological distress. Public awareness campaigns have been effective at improving sexual minority inclusion and reducing homophobia in African American communities in the United States (Hull *et al.*, 2017), and such campaigns may play a similarly important role in Australia. Future research should examine the potential to reduce suicidal behaviour and poor mental health among sexual minority communities in Australia and elsewhere, through a diverse range of community-based interventions to reduce discrimination. Further examination of this issue may also adopt an intersectionality approach to further examine the multiple intersecting identities that increase vulnerability to discrimination for sexual minority groups in a range of contexts, such as the intersection between sexuality and ethnicity.

Limitations

There are some limitations of our study. Firstly, our use of only one wave of data prevents the examination of underlying mechanisms of the observed mediated effects of discrimination, and longitudinal investigations cannot be performed. Secondly, to increase statistical power, the homosexual and bisexual groups were combined as a single group with the heterosexual group used as comparator, however, there can be substantial differences between these two sexual minority groups. Thirdly, this study did not include females, and the questionnaire contained no questions regarding gender diverse identifications, so our findings are unable to account for gender diversity. Fourthly, we cannot exclude the possibility of reverse causality, as the mood of participants may have influenced participant perceptions of discrimination experiences. Mood-as-information research indicates that both positive and negative moods may be influential in affecting perceptions of discrimination; individuals with positive moods may be more likely to minimise discrimination and individuals with negative moods may be more likely to acknowledge greater discrimination in their lives (Sechrist *et al.*, 2003). Nonetheless, evidence from longitudinal studies has found that discrimination is on the pathway to adverse mental health (Cave *et al.*, 2020). Finally, discrimination was measured using a question that assessed ‘perceived discrimination’, with the inherent weakness of relying on participants to judge whether or not they had experienced discrimination. We were not able to present data on the scope and number of experiences of discrimination, nor the context, which may have further illuminated underlying social mechanisms that could inform improved targeting of anti-discrimination strategies. Indeed, some discrimination experiences may have been the result of interactions with other sexual minority males (for example, racial discrimination experienced within the gay community). Nonetheless, there is utility in a broad assessment that does not limit the scope, locations or contexts in which discrimination is perceived to have occurred.

Conclusions

Our analyses found that perceived discrimination is a common experience for sexual minority males in Australia, and that this experience may contribute to suicidality and depressive symptoms. Our findings suggest that reducing discrimination ought to be a critical part of strategies to reduce suicide and improve the mental health of sexual minority individuals in Australia.

Conflicts of Interest

The authors declare no conflict of interest. The funders took no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

Ethics approval statement

This study received ethical clearance from the University of Melbourne Human Sciences Human Ethics Sub-Committee (HREC 1237897 and 1237376).

Data availability statement

The data used for this study are available from The Australian Institute of Family Studies https://aifs.gov.au/projects/ten-to-men.

Permission to reproduce material from other sources

No material from other resources was reproduced in this manuscript.

References

Abelson, J., Lambevski, S., Crawford, J., Bartos, M., & Kippax, S. (2006). Factors Associated with 'Feeling Suicidal'. *Journal Of Homosexuality, 51*(1), 59-80. doi:10.1300/J082v51n01_04

Almeida, J., Johnson, R. M., Corliss, H. L., Molnar, B. E., & Azrael, D. (2009). Emotional distress among LGBT youth: the influence of perceived discrimination based on sexual orientation. *J Youth Adolesc, 38*(7), 1001-1014. doi:10.1007/s10964-009-9397-9

Baams, L., Grossman, A. H., & Russell, S. T. (2015). Minority stress and mechanisms of risk for depression and suicidal ideation among lesbian, gay, and bisexual youth. *Developmental psychology, 51*(5), 688-696. doi:10.1037/a0038994

Borgona N, & McDermott R. (2020). Perceived discrimination is disproportionally associated with sexual minority mental health: Implications for non-monosexual sexual minorities. *JOURNAL OF GAY & LESBIAN MENTAL HEALTH, 24*(1), 20-39.

Bowring, A. L., Vella, A. M., Degenhardt, L., Hellard, M., & Lim, M. S. (2015). Sexual identity, same-sex partners and risk behaviour among a community-based sample of young people in Australia. *Int J Drug Policy, 26*(2), 153-161. doi:10.1016/j.drugpo.2014.07.015

Bränström, R. (2017). Minority stress factors as mediators of sexual orientation disparities in mental health treatment: a longitudinal population-based study. *Journal of Epidemiology and Community Health, 71*(5), 446-452. doi:10.1136/jech-2016-207943

Brennan, D. J., Ross, L. E., Dobinson, C., Veldhuizen, S., & Steele, L. S. (2010). Men's sexual orientation and health in Canada. *Canadian Journal Of Public Health = Revue Canadienne De Sante Publique, 101*(3), 255-258.

Calabrese, S. K., Meyer, I. H., Overstreet, N. M., Haile, R., & Hansen, N. B. (2015). Exploring Discrimination and Mental Health Disparities Faced By Black Sexual Minority Women Using a Minority Stress Framework. *Psychology of women quarterly, 39*(3), 287-304. doi:10.1177/0361684314560730

Cave, L., Cooper, M. N., Zubrick, S. R., & Shepherd, C. C. J. (2020). Racial discrimination and child and adolescent health in longitudinal studies: A systematic review. *Social Science & Medicine, 250*, 112864. doi:https://doi.org/10.1016/j.socscimed.2020.112864

Chan, K. K. S., & Fung, W. T. W. (2021). Differential Impact of Experienced and Anticipated Discrimination on Sleep and Health Among Sexual Minorities. *Arch Sex Behav*. doi:10.1007/s10508-021-01981-2

Chang, C. J., Fehling, K. B., & Selby, E. A. (2020). Sexual Minority Status and Psychological Risk for Suicide Attempt: A Serial Multiple Mediation Model of Social Support and Emotion Regulation. *Frontiers in psychiatry, 11*, 385-385. doi:10.3389/fpsyt.2020.00385

Choi, A. Y., Nylund-Gibson, K., Israel, T., & Mendez, S. E. A. (2019). A Latent Profile Analysis of Bisexual Identity: Evidence of Within-Group Diversity. *Archives Of Sexual Behavior, 48*(1), 113-130. doi:10.1007/s10508-018-1325-1

Comfort, J., & McCausland, K. (2013). Health priorities and perceived health determinants among Western Australians attending the 2011 LGBTI Perth Pride Fairday Festival. *Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals, 24*(1), 20-25.

Currier D, Pirkis J, Carlin J, Degenhardt L, Dharmage S. C, Giles-Corti B, . . . English, D. R. (2016). The Australian Longitudinal Study on Male Health - Methods. *BMC Public Health, 16 (Suppl 3) 1043*, 6-13.

Dentato, M. P., Halkitis, P. N., & Orwat, J. (2013). Minority Stress Theory: An Examination of Factors Surrounding Sexual Risk Behavior among Gay & Bisexual Men Who Use Club Drugs. *Journal of gay & lesbian social services, 25*(4), 10.1080/10538720.10532013.10829395. doi:10.1080/10538720.2013.829395

di Giacomo, E., Krausz, M., Colmegna, F., Aspesi, F., & Clerici, M. (2018). Estimating the Risk of Attempted Suicide Among Sexual Minority Youths: A Systematic Review and Meta-analysis. *JAMA Pediatr, 172*(12), 1145-1152. doi:10.1001/jamapediatrics.2018.2731

Elias, A., & Paradies, Y. (2016). Estimating the mental health costs of racial discrimination. *BMC Public Health, 16*(1), 1205. doi:10.1186/s12889-016-3868-1

Goldbach, J. T., Rhoades, H., Green, D., Fulginiti, A., & Marshal, M. P. (2019). Is There a Need for LGBT-Specific Suicide Crisis Services? *Crisis, 40*(3), 203-208. doi:10.1027/0227-5910/a000542

Hafeman, D. M. (2009). “Proportion Explained”: A Causal Interpretation for Standard Measures of Indirect Effect? *American Journal of Epidemiology, 170*(11), 1443-1448. doi:10.1093/aje/kwp283

Haregu T, Jorm A.F, Leckning B, Paradies Y, Young J, & Armstrong G. (2021). Discrimination experienced by Aboriginal and Torres Strait Islander people in Australia: associations with suicidal thoughts and depressive symptoms. *Aust N Z J Psychiatry, First published online July 13, 2021*.

Hottes, T. S., Bogaert, L., Rhodes, A. E., Brennan, D. J., & Gesink, D. (2016). Lifetime Prevalence of Suicide Attempts Among Sexual Minority Adults by Study Sampling Strategies: A Systematic Review and Meta-Analysis. *Am J Public Health, 106*(5), e1-12. doi:10.2105/AJPH.2016.303088

Hull, S. J., Davis, C. R., Hollander, G., Gasiorowicz, M., Jeffries, W. L. t., Gray, S., . . . Mohr, A. (2017). Evaluation of the Acceptance Journeys Social Marketing Campaign to Reduce Homophobia. *Am J Public Health, 107*(1), 173-179. doi:10.2105/ajph.2016.303528

Irwin, J. A., Coleman, J. D., Fisher, C. M., & Marasco, V. M. (2014). Correlates of suicide ideation among LGBT Nebraskans. *Journal Of Homosexuality, 61*(8), 1172-1191. doi:10.1080/00918369.2014.872521

Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med, 16*(9), 606-613. doi:10.1046/j.1525-1497.2001.016009606.x

Lea, T., de Wit, J., & 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, 43*(8), 1571-1578. doi:10.1007/s10508-014-0266-6

Martin-Storey, A., Recchia, H. E., & Santo, J. B. (2021). Self-Continuity Moderates the Association Between Sexual-Minority Status Based Discrimination and Depressive Symptoms. *J Homosex, 68*(12), 2075-2096. doi:10.1080/00918369.2020.1733350

McDermott, E., Hughes, E., & Rawlings, V. (2018). The social determinants of lesbian, gay, bisexual and transgender youth suicidality in England: a mixed methods study. *Journal Of Public Health (Oxford, England), 40*(3), e244-e251. doi:10.1093/pubmed/fdx135

McNair, R., Andrews, C., Parkinson, S., & Demosey, D. (2017). GALFA LGBTI Homelessness Research Project. . Retrieved from http://www.lgbtihomeless.com/

Meader, N., & Chan, M. K. Y. (2017). Sexual orientation and suicidal behaviour in young people. *Br J Psychiatry, 211*(2), 63-64. doi:10.1192/bjp.bp.116.197475

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological bulletin, 129*(5), 674-697. doi:10.1037/0033-2909.129.5.674

Moagi, M. M., van Der Wath, A. E., Jiyane, P. M., & Rikhotso, R. S. (2021). Mental health challenges of lesbian, gay, bisexual and transgender people: An integrated literature review. *Health SA, 26*, 1487. doi:10.4102/hsag.v26i0.1487

Paradies, Y., Ben, J., Denson, N., Elias, A., Priest, N., Pieterse, A., . . . Gee, G. (2015). Racism as a Determinant of Health: A Systematic Review and Meta-Analysis. *PloS one, 10*(9), e0138511. doi:10.1371/journal.pone.0138511

Pirkis, J., Currier, D., Carlin, J., Degenhardt, L., Dharmage, S. C., Giles-Corti, B., . . . English, D. R. (2016). Cohort Profile: Ten to Men (the Australian Longitudinal Study on Male Health). *Int J Epidemiol*. doi:10.1093/ije/dyw055

Priest, N., Paradies, Y., Trenerry, B., Truong, M., Karlsen, S., & Kelly, Y. (2013). A systematic review of studies examining the relationship between reported racism and health and wellbeing for children and young people. *Soc Sci Med, 95*, 115-127. doi:10.1016/j.socscimed.2012.11.031

Rice, C. E., Fish, J. N., Russell, S. T., & Lanza, S. T. (2021). Sexual Minority-related Discrimination across the Life Course: Findings from a National Sample of Adults in the United States. *J Homosex, 68*(2), 252-268. doi:10.1080/00918369.2019.1648083

Richardson, L. P., McCauley, E., Grossman, D. C., McCarty, C. A., Richards, J., Russo, J. E., . . . Katon, W. (2010). Evaluation of the Patient Health Questionnaire-9 Item for Detecting Major Depression Among Adolescents. *Pediatrics, 126*(6), 1117. doi:10.1542/peds.2010-0852

Roberts, R., Black, G., & Hart, T. (2018). Same-sex-attracted adolescents in rural Australia: stressors, depression and suicidality, and barriers to seeking mental health support. *Rural And Remote Health, 18*(3), 4364-4364. doi:10.22605/RRH4364

Salway, T., Gesink, D., Ibrahim, S., Ferlatte, O., Rhodes, A. E., Brennan, D. J., . . . Trussler, T. (2018). Evidence of Multiple Mediating Pathways in Associations Between Constructs of Stigma and Self-Reported Suicide Attempts in a Cross-Sectional Study of Gay and Bisexual Men. *Archives Of Sexual Behavior, 47*(4), 1145-1161. doi:10.1007/s10508-017-1019-0

Schmitt, M. T., Branscombe, N. R., Postmes, T., & Garcia, A. (2014). The consequences of perceived discrimination for psychological well-being: a meta-analytic review. *Psychol Bull, 140*(4), 921-948. doi:10.1037/a0035754

Schwartz, S., & Meyer, I. H. (2010). Mental health disparities research: the impact of within and between group analyses on tests of social stress hypotheses. *Soc Sci Med, 70*(8), 1111-1118. doi:10.1016/j.socscimed.2009.11.032

Sechrist, G. B., Swim, J. K., & Mark, M. M. (2003). Mood as Information in Making Attributions to Discrimination. *Personality and Social Psychology Bulletin, 29*(4), 524-531. doi:10.1177/0146167202250922

Skerrett, D. M., Kolves, K., & De Leo, D. (2015). Are LGBT populations at a higher risk for suicidal behaviors in Australia? Research findings and implications. *J Homosex, 62*(7), 883-901. doi:10.1080/00918369.2014.1003009

Skerrett, D. M., Kolves, K., & De Leo, D. (2016). Factors Related to Suicide in LGBT Populations. *Crisis, 37*(5), 361-369.

Skerrett, D. M., Kõlves, K., & De Leo, D. (2014). Suicides among lesbian, gay, bisexual, and transgender populations in Australia: an analysis of the Queensland Suicide Register. *Asia-Pacific Psychiatry: Official Journal Of The Pacific Rim College Of Psychiatrists, 6*(4), 440-446. doi:10.1111/appy.12128

StataCorp. (2019). *Stata Statistical Software: Release 16*. College Station, TX: StataCorp LP.

Swannell, S., Martin, G., & Page, A. (2016). Suicidal ideation, suicide attempts and non-suicidal self-injury among lesbian, gay, bisexual and heterosexual adults: Findings from an Australian national study. *Aust N Z J Psychiatry, 50*(2), 145-153. doi:10.1177/0004867415615949

Tang, W., He, H., Wang, W. J., & Chen, D. G. (2018). Untangle the Structural and Random Zeros in Statistical Modelings. *Journal of applied statistics, 45*(9), 1714-1733. doi:10.1080/02664763.2017.1391180

Taylor, J., Power, J., Smith, E., & Rathbone, M. (2019). Bisexual mental health: Findings from the 'Who I Am' study. *Australian journal of general practice, 48*(3), 138-144. doi:10.31128/AJGP-06-18-4615

Zou, G. (2004). A Modified Poisson Regression Approach to Prospective Studies with Binary Data. *American Journal of Epidemiology, 159*(7), 702-706. doi:10.1093/aje/kwh090