

Health and well being of lesbian, gay, bisexual, transgender and intersex people aged 50 years and over

Mark Hughes

School of Arts and Social Sciences, Southern Cross University, Locked Bag 4, Coolangatta, Qld 4252, Australia. Email: mark.hughes@scu.edu.au

Abstract

Objectives. The aim of the present study was to examine the health and well being of older lesbian, gay, bisexual, transgender and intersex (LGBTI) people, the health issues that concern them, the services they use and challenges accessing services.

Methods. This study comprised a survey of the health and well being of 312 LGBTI people aged 50 years and over in New South Wales. The survey included the Short-Form 12 (SF-12) measure of health-related quality of life, the Kessler 10 (K10) measure of psychological distress, and the three-item Loneliness Scale.

Results. Higher levels of psychological distress, lower mental health and greater loneliness were found among this sample than is typically found in the general population. Mental health was lower among carers and those not in a relationship, while psychological distress was greater among those living alone and those experiencing higher rates of loneliness. The most commonly accessed health service was a general practitioner (GP), with most respondents reporting that they were open about their sexuality to their GP and that they had a regular GP. Some reported difficulties accessing health services because of their gender or sexual diversity.

Conclusions. Although many older LGBTI people are well, both physically and mentally, they do appear to face increased risk of certain health issues compared with the general population.

What is known about the topic? Overseas research indicates that older LGBTI people may be at greater risk of certain physical and mental health conditions than the general population.

What does this paper add? This paper provides Australian data, using well-validated instruments, on the health and well being of older LGBTI people. It provides evidence of the health issues that older LGBTI people are most concerned about and the barriers they face in accessing services.

What are the implications for practitioners? It is important for health practitioners to be aware that older LGBTI people appear to be at increased risk of certain physical and mental health issues, such as loneliness and psychological distress. Providing opportunities for clients to identify their gender or sexual diversity may assist in monitoring risk factors and enable referral to promote healthy aging.

Received 6 September 2016, accepted 9 January 2017, published online 7 March 2017

Introduction

Although there is evidence of the health challenges faced by lesbian, gay, bisexual, transgender and intersex (LGBTI) older people overseas, there is limited research on this issue in the Australian context. In the US, reports of health being ‘poor’ or ‘fair’ have been identified to be 1.5-fold more common among older gay and bisexual men compared with older heterosexual men, and 1.26-fold more common among older lesbian and bisexual women compared with older heterosexual women.¹ In addition, international research has reported that older transgender and other gender diverse people have significantly poorer physical health and a higher likelihood of disability than non-transgender lesbian, gay and bisexual (LGB) people of a similar age.²

In Australia and overseas, mental health conditions, particularly depression and anxiety, have consistently been reported to

be higher in LGBTI populations than in the general population, including heterosexual and cisgender people.^{3–5} These differences are also apparent in the older population. Psychological distress has been identified as 1.42-fold greater for older gay and bisexual men (compared with older heterosexual men) and 1.35-fold higher for older lesbians and bisexual women (compared with older heterosexual women).¹ Higher rates of depressive symptoms have also been identified among older transgender and gender diverse adults compared with non-transgender LGB people of a similar age.²

With regard to physical health status, international research has consistently pointed to poorer health outcomes for lesbians and bisexual women compared with the heterosexual population and with gay and bisexual men,^{6,7} although gay and bisexual men continue to be at higher risk of HIV and other sexually transmissible diseases.⁸ Obesity has been identified as a major

issue where differences are apparent, with lesbians and bisexual women aged 50 years and over having increased odds of obesity and gay and bisexual men aged 50 years and over having lower odds than their heterosexual counterparts.⁹ Drinking to excess has also been identified as more prevalent among lesbians and bisexual women, both under and over the age of 50 years, than among heterosexual women.¹⁰ Tobacco use appears to be approximately twice as prevalent among lesbians aged 50 years and over compared with bisexual and heterosexual women of the same age, and approximately 1.6-fold more likely among bisexual men aged 50 years and over compared with gay and heterosexual men aged 50 years and over.¹⁰

These factors contribute to a picture of older LGBTI people facing elevated risks of certain physical health conditions, and general risks relating to mental health and psychological distress. However, further evidence is needed in the Australian context about the health issues faced by older LGBTI people. The aim of the present study was to contribute to this understanding, using validated instruments, to assist in building an evidence base for the development of health promotion programs.

Methods

The present study investigated the health and well being of LGBTI people aged 50 years and over living in New South Wales (NSW). It comprised a cross-sectional survey, involving both quantitative and qualitative components. The survey was designed in collaboration with staff at Evergreen Life Care (West Gosford, NSW, Australia) and was approved by the Human Research Ethics Committee of Southern Cross University.

Sampling

Given the difficulties recruiting a probability sample of LGBTI people,¹¹ it was decided to recruit a non-probability sample through diverse means. The survey was distributed via LGBTI community organisations, public sector health and aged care agencies and community agencies. A website and Facebook site were set up and promoted through social media. The survey was also advertised in print media and on local radio. The initial response was largely from metropolitan Sydney. Two outreach trips to the Far North Coast and Hunter regions of NSW helped increase rural and regional participation. Because the sample was not drawn from a specific population frame, it was not possible to calculate a response rate.

Data collection

The survey was delivered via an online and paper-based questionnaire developed through Qualtrics (Provo, UT, USA). It comprised both closed- and open-ended questions. Demographic questions related to age, sex assigned at birth, current gender, sexuality, identification as an Aboriginal or Torres Strait Islander person and main language spoken at home. In addition, questions relating to partnership status, cohabitation, geographical location and provision of informal care were included in the questionnaire.

The Short-Form 12 (SF-12)¹² was used to measure health-related quality of life. This instrument comprises 12 items that produce two composite scores: one for physical health (PCS) and one for mental health (MCS). The higher the composite score, the better the health-related quality of life. The instrument

includes a general health item ('In general, would you say your health is. . .') measured on a five-point Likert scale ranging from poor to excellent. The SF-12 has well-established validity and reliability, including high-level correlation with the respective components of the larger SF-36 on which it is based.¹²

Psychological distress was measured using the Kessler 10 (K10).¹³ The K10 has been used in some major studies, including the Australian Health Survey¹⁴ and the 45 and Up Study.¹⁵ In line with the Australian Bureau of Statistics,¹⁴ scores from 10 to 15 on the K10 were treated as low distress, scores 16–21 were taken to indicate moderate distress, scores 22–29 were taken to indicate high distress and scores ≥ 30 were taken to indicate very high distress. The K10 has been demonstrated to have high correlation with the mental health component of the SF-12 and the General Health Questionnaire (GHQ).¹⁶ In the present study, Cronbach's α was 0.89.

Loneliness was measured by the short form of the Revised University of California Los Angeles (R-UCLA) Loneliness Scale: the three-item Loneliness Scale.¹⁷ This instrument produces a summary score ranging from 3 to 9, with a higher score indicating a higher degree of loneliness. The three-item Loneliness Scale is strongly associated with the R-UCLA Loneliness Scale¹⁷ and, in the present study, Cronbach's α was 0.87.

The questionnaire included additional variables related to health issues and services. One question asked: 'Which of the following health issues is most important to you personally?' Twenty items were included, as well as a corresponding three-point scale: 'not at all important', 'somewhat important' and 'very important'. Respondents were asked what health services they had used in the past 12 months and in the past 5 years, with 14 items to select from. Respondents were also asked if they had disclosed their sexuality and/or gender variance (yes/no) to their general practitioner (GP). A qualitative question provided respondents with the opportunity to report any barriers to accessing health services.

Data analysis

All data were exported into SPSS Statistics version 19 (IBM Corporation, Armonk, NY, USA). Responses to the SF-12 were analysed using QualityMetric Health Outcomes Scoring Software 4.0 (QualityMetric Incorporated, Lincoln, RI, USA) in order to generate the MCS and PCS composite scores. Bivariate descriptive analysis involving categorical variables was conducted by cross-tabulations and Chi-squared tests. Analyses involving continuous dependent variables were performed by independent samples *t*-test, analysis of variance (ANOVA) and Pearson's *r*. The α value was set at 0.05. Qualitative data were analysed for themes, which were subsequently treated as categorical variables and are reported on as frequencies and percentages with quotations for illustration purposes. Where appropriate, data are given as the mean \pm s.d.

Results

In all, 312 people responded to the survey, although not all answered each question. The mean age of respondents was 59.9 ± 7.2 years, with 75.4% (227/301) aged between 50 and 64 years and 24.6% (74/301) aged 65 years and over (Table 1). Six of the 312 people (1.9%) identified as being of Aboriginal

and/or Torres Strait Islander descent, whereas five (1.6%) reported that English was not the main language they spoke at home. Most respondents (57.6%; 179/311) indicated that they were currently in a relationship and were living with other people (59.6%; 186/312). Further details on the demographic characteristics of the sample are provided in Table 1.

Health and well being

Most of the sample (81%; 252/310) reported that their health was good, very good or excellent (Table 2). With regard to the SF-12 composite scores, the mean PCS and MCS scores were 47.4 ± 10.2 and 49.4 ± 10.8 respectively. One significant association was identified in relation to the PCS: females reported lower physical health than the rest of the sample (45.7 ± 10.9 vs 48.8 ± 9.3 respectively; $t_{302} = -2.695$; $P < 0.01$). This was apparent across age categories. For example, for women aged 55–64 years, the PCS mean was 44.5 ± 11.9 compared with 48.1 ± 10.0 for the remainder of the sample ($t_{134} = -1.91$; $P < 0.05$). The MCS was associated with several variables, including age, with the mean for those aged 50–59 years being 47.6 ± 11.5 compared with 51.1 ± 9.8 for those aged ≥60 years ($t_{291} = -2.737$; $P < 0.01$). The MCS mean was also lower for those not in a relationship compared with those in a relationship (46.1 ± 11.5 vs 51.9 ± 9.6 respectively; $t_{301} = 4.771$; $P < 0.001$), as well as for carers compared with non-carers (45.7 ± 12.0 vs 50.0 ± 10.5 respectively; $t_{302} = -2.421$; $P < 0.05$). Loneliness,

as measured by the three-item Loneliness Scale, was also correlated with the MCS ($r_{268} = -0.519$; $P < 0.05$).

In the present study, 84.8% of the sample reported moderate or low psychological distress, whereas 15.2% reported high or very high distress (Table 3). The mean K10 score for the whole sample was 15.8 ± 5.4. Some significant associations were identified between the mean K10 summary score and other variables. Those who were not in a relationship reported greater psychological distress than those in relationships (17.2 ± 6.2 vs 14.7 ± 4.6 respectively; $t_{262} = -3.881$; $P < 0.001$). Those who lived alone also reported greater psychological distress than those who lived with others (16.6 ± 6.1 vs 15.2 ± 4.8 respectively; $t_{263} = 2.108$; $P < 0.05$). As with the MCS, psychological distress was correlated with loneliness ($r_{260} = 0.630$; $P < 0.001$).

With regard to specific health issues, the greatest number of respondents identified exercise as very important to them (44.9%), followed by dental health (29.3%), loneliness (27.7%), heart disease (27.7%), memory loss (26.4%), anxiety and/or depression (25.8%) and dementia (23.7%; Table 4). Several significant associations were identified between high levels of loneliness (a score of 6 or higher on the three-item scale) and indicating that specific health issues were important. These included anxiety and/or depression (41.4% of those who reported high loneliness said this was very important, compared with 10.6% of those with low to moderate loneliness ($\chi^2_2 = 51.935$; $n = 265$; $P \leq 0.001$)). Those who experienced higher levels of loneliness also reported that dental health was very important to them (36.8% vs 21.5%; $\chi^2_2 = 7.610$; $n = 263$; $P \leq 0.05$), as were heart disease (33.3% vs 21.4%; $\chi^2_2 = 6.761$; $n = 290$; $P \leq 0.05$), mobility issues (24.2% vs 12.3%; $\chi^2_2 = 7.491$; $n = 262$; $P \leq 0.05$), being overweight (21.8% vs 13.5%; $\chi^2_2 = 7.324$; $n = 266$; $P \leq 0.05$) and experiencing pain (20.7% vs 10.2%; $\chi^2_2 = 8.887$; $n = 263$; $P \leq 0.05$).

Service use

The most commonly reported recent service use was from GPs (88.5% in the past 12 months), followed by dentist (68.6%), optometrist (58.3%) and physiotherapist (35.9%; Table 5).

Table 1. Demographic characteristics of the study sample

	No. subjects (%)
Age (years; $n = 301$)	
50–54	90 (29.9)
55–59	62 (20.6)
60–64	75 (24.9)
65–69	39 (13.0)
70–74	29 (9.6)
≥75	6 (2.0)
Sex at birth ($n = 312$)	
Female	143 (45.8)
Male	167 (53.5)
Intersex	1 (0.3)
Current gender ($n = 312$) ^A	
Female	150 (48.1)
Male	145 (46.5)
Trans woman	14 (4.5)
Other	13 (4.2)
Sexuality ($n = 312$) ^A	
Asexual	7 (2.2)
Bisexual	18 (5.8)
Gay man	137 (43.9)
Lesbian	134 (42.9)
Heterosexual	5 (1.6)
Other	22 (7.1)
Location ($n = 310$)	
Metropolitan Sydney	183 (59.0)
Regional city	50 (16.1)
Regional town	47 (15.2)
Rural area	30 (9.7)

^ARespondents were able to select multiple responses.

Table 2. Respondents' perceived general health

In general, would you say your health is:	No. subjects (%)
Excellent	48 (15.5)
Very good	110 (35.5)
Good	94 (30.3)
Fair	47 (15.2)
Poor	11 (3.5)
Total	310 (100.0)

Table 3. Respondents' perceived psychological distress

	No. subjects (%)
Very high	8 (3.0)
High	32 (12.2)
Moderate	65 (24.7)
Low	158 (60.1)
Total	263 (100.0)

Table 4. Respondents' perceived health issues
Data are given as *n* (%)

	Not at all important	Somewhat important	Very important
Alcohol use (<i>n</i> = 302)	178 (58.9)	95 (31.5)	29 (9.6)
Anxiety depression (<i>n</i> = 299)	105 (35.1)	117 (39.1)	77 (25.8)
Cancer (<i>n</i> = 300)	119 (39.7)	127 (42.3)	54 (18.0)
Dementia (<i>n</i> = 300)	101 (33.7)	128 (42.7)	71 (23.7)
Dental health (<i>n</i> = 297)	78 (26.3)	132 (44.4)	87 (29.3)
Diabetes (<i>n</i> = 296)	175 (59.1)	76 (25.7)	45 (15.2)
Drug use (<i>n</i> = 295)	233 (79.0)	43 (14.6)	19 (6.4)
Exercise (<i>n</i> = 301)	48 (15.9)	118 (39.2)	135 (44.9)
Heart disease (<i>n</i> = 296)	89 (30.1)	125 (42.2)	82 (27.7)
Loneliness (<i>n</i> = 300)	108 (36.0)	109 (36.3)	83 (27.7)
Melanoma (<i>n</i> = 295)	122 (41.4)	116 (39.3)	57 (19.3)
Memory loss (<i>n</i> = 299)	84 (28.1)	136 (45.5)	79 (26.4)
Mobility (<i>n</i> = 295)	152 (51.5)	89 (30.2)	54 (18.3)
Overweight (<i>n</i> = 299)	124 (41.5)	119 (39.8)	56 (18.7)
Pain (<i>n</i> = 296)	147 (49.7)	102 (34.5)	47 (15.9)
Sexual health (<i>n</i> = 295)	208 (70.5)	52 (17.6)	35 (11.9)
Smoking (<i>n</i> = 294)	233 (79.3)	34 (11.6)	27 (9.2)
Urinary problems (<i>n</i> = 295)	167 (56.6)	95 (32.2)	33 (11.2)
Violence abuse (<i>n</i> = 295)	221 (74.9)	52 (17.6)	22 (7.5)
Vision loss (<i>n</i> = 297)	119 (40.1)	126 (42.4)	52 (17.5)

Table 5. Health service use by respondents (*n* = 312)
Data are given as *n* (%)

	Used in past 12 months	Used in past 5 years	Not reported using
Counsellor or psychologist	87 (27.9)	80 (25.6)	145 (46.5)
Dentist	214 (68.6)	74 (23.7)	24 (7.7)
Dietician or nutritionist	32 (10.3)	37 (11.9)	243 (77.9)
General practitioner	276 (88.5)	21 (6.7)	15 (4.8)
Hormone test	46 (14.7)	29 (9.3)	237 (76.0)
Mammogram	56 (17.9)	45 (14.4)	211 (67.6)
Naturopath	69 (22.1)	37 (11.9)	206 (66.0)
Occupational therapist	16 (5.1)	25 (8.0)	271 (86.9)
Optometrist	182 (58.3)	61 (19.6)	69 (22.1)
Pap smear	49 (15.7)	33 (10.6)	230 (73.7)
Physiotherapist	112 (35.9)	51 (16.3)	149 (47.8)
Podiatrist	59 (18.9)	36 (11.5)	217 (69.6)
Prostate check	65 (20.8)	24 (7.7)	223 (71.5)
Sexual health check	75 (24.0)	35 (11.2)	202 (64.7)

With regard to contact with GPs, 84.2% (263/305) reported that they regularly saw the same GP. Further, 77.2% (233/302) said that they had disclosed their sexuality and/or gender diversity to their GP. No significant associations were identified between service use, having a regular GP or disclosure of sexuality and/or gender diversity to their GP and other variables in the study.

Of the 312 respondents, 58 (18.6%) reported difficulties accessing health services. Nineteen (6.1%) were concerned that their diverse gender identity or sexuality affected the quality of service they received and may do so in the future:

On one occasion when admitted. . .for emergency surgery one attending [doctor] appeared scared of me when she discovered I was a gay woman and had a partner. . .On [another] occasion a wardman made quite rude remarks

about gay people and the [Sydney Gay and Lesbian] Mardi Gras and I told him I am sure he would 'get over it' but on reflection I should have complained to his superiors.

Fourteen (4.5%) had concerns about the quality of services generally. For example:

[I] find most doctors do not listen, are judgemental and treat symptoms and not the whole problem. For example, endocrinologist insisted nothing [was] wrong with me and wanted me to go to YET ANOTHER dietician in spite of being vegan and eat healthily. Eventually found adrenal lesion after my insistence on being checked, since doctor has been inactive in treating me.

The cost of accessing preferred services was identified as a barrier by 12 people (3.9%):

I access GPs as I need them but not a regular service as my local stopped bulk billing. If I find another GP I like who bulk bills I would have no problem disclosing my sexuality.

Four (1.3%) reported distance to be a factor in accessing services, highlighting the lack of preferred local services:

I have a great, gay GP. [The] only issue is the distance I need to travel from Western Sydney to Darlinghurst [central Sydney] when I am ill. Often I put off seeing him for bad colds, flu etc. because my head is not clear and responses not sharp, and I do not feel able to safely drive that distance.

Five people (1.6%) reported time to be a key factor ('too busy at work and not enough time'), and another five reported privacy or embarrassment as an issue ('Maintaining privacy is important to me').

Discussion

The present study represents one of the first Australian investigations into the health and well being of older LGBTI people. Compared with general population studies, including heterosexual and cisgender people, the present study appears to confirm international research that older LGBTI people face elevated risks of some health conditions. In the present study, women were significantly more likely to have lower physical health status (as measured by the SF-12) than the rest of the sample and at higher rates than in the general population. For example, the PCS mean for women in the present study aged 55–64 years of 44.5 is lower than that found among all women in the same age group in the general population in the US (46.8).¹⁸ This accords with international research indicating that lesbians and bisexual women experience higher rates of physical morbidity compared with heterosexual women, gay and bisexual men and the general population.⁹

The present study also provides evidence that older LGBTI people experience mental health issues and psychological distress at a higher rate than is usually found in the general population. Although statistically significant differences were not identified in the present study between groups of LGBTI people, the MCS was substantially lower in the whole sample than is usually found in general population studies. For example, the mean MCS for

females and males aged 55–64 years in the present study was 49.3 and 48.7 respectively, compared with 50.4 and 52.1 for women and men in the general population and in the same age range in the US.¹⁸ Similarly, the rate of psychological distress in the present study was substantially higher than is usually found in general population studies. For example, in the present study 15.2% of respondents reported high or very high rates of psychological distress, whereas in the 45 and Up study, comprising 236 490 people aged 45 years and over, only 7.6% reported high or very high psychological distress.¹⁵ Other findings, such as associations between psychological distress and loneliness, living alone and not being in a relationship, reflected patterns found in international research involving heterosexual and cisgender people.¹⁹ However, these issues may be more evident in the older LGBTI population. For example, it has been found in international research that older gay and bisexual men are significantly more likely to live alone compared with older heterosexual men, and they are also less likely to be in a relationship;¹ both these factors are associated with higher rates of loneliness and psychological distress.²⁰

The health concerns reported by older LGBTI people reflect those of the general population, including heterosexual and cisgender people, although it is notable that key issues of concern include anxiety, depression and loneliness. Other studies have also indicated that the concerns LGBTI people have about aging reflect patterns within the wider community.²¹ Previous research has also identified LGBTI people's concerns about service access in later life²¹ and, in the present study, a relatively small proportion reported barriers to health services because of their gender or sexual diversity. A positive finding from the present study was the relatively high rate of use of GP services and that nearly 75% of respondents were open about their sexuality or gender diversity with their GP.

There are several limitations to the present study, which highlight the need for further research in this area. The limitations include the non-probability sample, not having a comparison group of non-LGBTI people and the low numbers of transgender and intersex people who participated in the study. The sampling strategy may have over-represented LGBTI people who were open about their identities and backgrounds and under-represented those not engaged with LGBTI communities. There is evidence from Australia and overseas that older people are not put off by questions about gender and sexuality diversity^{22,23} and thus there is substantial potential for including LGBTI variables in large probability studies, which may generate a more representative sample of older LGBTI people and facilitate more intragroup analyses.

The present study has contributed to an understanding of some of the health and well being challenges faced by older LGBTI people within the Australian context. Even though these challenges were faced by a proportionately greater number of people in the present sample compared with what may be ordinarily expected in the general population, most of people in the present study did not experience significant health and well being issues. That is, 81% reported their health to be at least good and nearly 85% reported low or moderate psychological distress. These findings highlight the value of further investigations into the resilience and protective factors that facilitate well being in the face of previous experiences of discrimination and disadvantage.

Competing interests

None declared.

Acknowledgements

This project was funded by Evergreen Life Care and Southern Cross University. Particular thanks go to Sujay Kentlyn, who was employed as a project officer with Evergreen Life Care.

References

- Wallace S, Cochran S, Durazo E, Ford C. Health of aging lesbian, gay and bisexual adults in California. Los Angeles: UCLA Center for Health Policy Research; 2011.
- Fredriksen-Goldsen KI, Cook-Daniels L, Kim H-J, Erosheva EA, Emlet CA, Hoy-Ellis CP, Goldsen J, Muraco A. Physical and mental health of transgender older adults: an at-risk and underserved population. *Gerontologist* 2014; 54: 488–500. doi:10.1093/geront/gnt021
- Carman M, Corboz J, Dowsett GW. Falling through the cracks: the gap between evidence and policy in responding to depression in gay, lesbian and other homosexually active people in Australia. *Aust N Z J Public Health* 2012; 36: 76–83. doi:10.1111/j.1753-6405.2012.00828.x
- Chakraborty A, McManus S, Brughra TS, Bebbington P, King M. Mental health of the non-heterosexual population of England. *Br J Psychiatry* 2011; 198: 143–8. doi:10.1192/bjp.bp.110.082271
- Plöderl M, Tremblay P. Mental health of sexual minorities. A systematic review. *Int Rev Psychiatry* 2015; 27: 367–85. doi:10.3109/09540261.2015.1083949
- Addis S, Davies M, Greene G, MacBride-Stewart S, Shepherd M. The health, social care and housing needs of lesbian, gay, bisexual and transgender older people: a review of the literature. *Health Soc Care Community* 2009; 17: 647–58. doi:10.1111/j.1365-2524.2009.00866.x
- Gonzales G, Henning-Smith C. Disparities in health and disability among older adults in same-sex cohabiting relationships. *J Aging Health* 2015; 27: 432–53. doi:10.1177/0898264314551332
- Beyrer C, Baral SD, van Griensven F, Goodreau SM, Chariyalertsak S, Wirtz AL, Brookmeyer R. Global epidemiology of HIV infection in men who have sex with men. *Lancet* 2012; 380: 367–77. doi:10.1016/S0140-6736(12)60821-6
- Fredriksen-Goldsen K, Kim H, Barkan S, Muraco A, Hoy-Ellis C. Health disparities among lesbian, gay, and bisexual older adults: results from a population-based study. *Am J Public Health* 2013; 103: 1802–9. doi:10.2105/AJPH.2012.301110
- Boehmer U, Miao X, Linkletter C, Clark MA. Adult health behaviors over the life course by sexual orientation. *Am J Public Health* 2012; 102: 292–300. doi:10.2105/AJPH.2011.300334
- McParland J, Camic PM. Psychosocial factors and ageing in older lesbian, gay and bisexual people: a systematic review of the literature. *J Clin Nurs* 2016; 25: 3415–37. doi:10.1111/jocn.13251
- Ware J, Kosinski M, Keller SA. 12-Item short-form health survey. *Med Care* 1996; 34: 220–33. doi:10.1097/00005650-199603000-00003
- Kessler RC, Barker PR, Colpe LJ, Epstein JF, Gfroerer JC, Hiripi E, Howes MJ, Normand ST, Manderscheid RW, Walters EE, Zaslavsky AM. Screening for serious mental illness in the general population. *Arch Gen Psychiatry* 2003; 60: 184–9.
- Australian Bureau of Statistics (ABS). Australian health survey: first results, 2011–12. Canberra: ABS; 2011.
- Phongsavan GA, Bauman B, Byles C, Clarke J, Redman S, Nutbeam D for the SEEF Project. Age, gender, social contacts, and psychological distress: findings from the 45 and up study. *J Aging Health* 2013; 25: 921–43. doi:10.1177/0898264313497510
- Andrews G, Slade T. Interpreting scores on the Kessler psychological distress scale (K10). *Aust N Z J Public Health* 2001; 25: 494–7. doi:10.1111/j.1467-842X.2001.tb00310.x

- 17 Hughes M, Waite L, Hawkey L, Cacioppo J. A short scale for measuring loneliness in large surveys: results from two population-based studies. *Res Aging* 2004; 26: 655–72. doi:[10.1177/0164027504268574](https://doi.org/10.1177/0164027504268574)
- 18 Hanmer J, Lawrence WF, Anderson JP, Kaplan RM, Fryback DG. Report of nationally representative values for the noninstitutionalized US adult population for 7 health-related quality-of-life scores. *Med Decis Making* 2006; 26: 391–400. doi:[10.1177/0272989X06290497](https://doi.org/10.1177/0272989X06290497)
- 19 Koc Z. Determination of older people's level of loneliness. *J Clin Nurs* 2012; 21: 3037–46. doi:[10.1111/j.1365-2702.2012.04277.x](https://doi.org/10.1111/j.1365-2702.2012.04277.x)
- 20 Hughes M. Loneliness and social support among lesbian, gay, bisexual, transgender and intersex people aged 50 and over. *Ageing Soc* 2015; 36: 1961–81. doi:[10.1017/S0144686X1500080X](https://doi.org/10.1017/S0144686X1500080X)
- 21 Hughes M. Lesbian and gay people's concerns about ageing and accessing services. *Aust Soc Work* 2009; 62: 186–201. doi:[10.1080/03124070902748878](https://doi.org/10.1080/03124070902748878)
- 22 Byles JE, Forder PM, Grulich A, Prestage G. 'It's okay to ask.' Inclusion of sexual orientation questions is feasible in population health surveys. *Aust NZ J Public Health* 2013; 37: 390–1. doi:[10.1111/1753-6405.12090](https://doi.org/10.1111/1753-6405.12090)
- 23 Fredriksen-Goldsen KI, Kim H-J. Count me in: response to sexual orientation measures among older adults. *Res Aging* 2015; 37: 464–80. doi:[10.1177/0164027514542109](https://doi.org/10.1177/0164027514542109)