



Original article

Cancer Risk Factors, Diagnosis and Sexual Identity in the Australian Longitudinal Study of Women's Health



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A B S T R A C T

Purpose: We sought to examine cancer diagnosis, cancer treatment, and related risk factors among Australian, middle-aged, exclusively heterosexual women compared with sexual minority women (SMW; mainly heterosexual, bisexual, mainly lesbian, and lesbian).

Methods: Secondary data analysis of the Australian Longitudinal Study of Women's Health for women born in 1946 through 1951 ($n = 10,451$) included bivariate tests (i.e., contingency table analyses, independent t tests).

Results: SMW did not have significantly higher cancer diagnoses compared with exclusively heterosexual women, although they were more likely to report never having had a mammogram or pap smear. SMW were also significantly more likely to be high-risk drinkers (11.1% vs. 6.8%; $p < .05$), current smokers (15.1% vs. 8.3%; $p < .001$), report significantly higher rates of depression (mean \pm SD; 6.4 ± 5.5 vs. 5.4 ± 5.1 ; $p < .01$), have experienced physical abuse (10.2% vs. 5.1%; $p < .001$), and been in a violent relationship (27.2% vs. 12.8%; $p < .001$).

Conclusion: SMW had higher rates of several known cancer risk factors, ostensibly placing them at higher risk of cancer as well as chronic health conditions. Further research is needed to determine whether increased risk results in increased cancer as these women age, and to inform the development of interventions to reduce the risk of disease for SMW.

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Cancer is a leading cause of illness in Australia with around 50,000 new cases of cancer diagnosed in women each year, of which 25% is breast cancer (Australian Institute of Health and Welfare & Australasian Association of Cancer Registries, 2012). Despite state and national surveillance on cancer prevalence no data are collected about sexual minority women (SMW). To date, there has been limited research on the prevalence of cancer and related risk factors among Australian lesbians and bisexual women. A recent population-based Australian study of the health status of young women aged 25 to 30 years ($n = 8,850$) found that young lesbian and bisexual women reported significantly poorer mental health

and higher rates of asthma, and were significantly more likely to report a cancer diagnosis (3% of lesbians, compared with 1.1% of heterosexual women and 1% of bisexual women; $p < .05$; McNair, Szalacha, & Hughes, 2011). These young lesbians were also significantly less likely to have ever had a Pap test and lesbian and bisexual women more likely to be under screened for breast cancer. McNair et al. (2011) argued that although the cancer diagnosis rates were predictably low given their relatively young age, the higher rates of cancer in lesbians compared with heterosexual and bisexual women was of concern and that higher cancer risk factors pointed to the need for additional research to more fully understand cancer outcomes for SMW.

Several studies have demonstrated significantly greater cancer risk factors for lesbians and bisexual women than for heterosexual women in the United States (Brandenburg, Matthews, Johnson, & Hughes, 2007; Cochran et al., 2001), in Britain (King &

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Nazareth, 2006), and Australia (Hyde, Comfort, McManus, Brown, & Howat, 2009; McNair et al., 2011). The prevalence of cancer is therefore posited to be higher among SMW (Brown & Tracy, 2008), owing to higher risk factors, including smoking, alcohol, obesity (Aaron et al., 2001), nulliparity, and reduced contraceptive pill use (Cochran et al., 2001; Dibble, Roberts, & Nussey, 2004), and lower rates of screening for breast and/or cervical cancer (Agénor, Krieger, Austin, Haneuse, & Gottlieb, 2014; Charlton et al., 2011; Cochran et al., 2001; Diamant, Wold, Spritzer, & Gelberg, 2000; McNair et al., 2011; Tjepkema, 2008). High levels of stress in this population are associated with experiences of sexuality-based stigma, victimization, and discrimination (Meyer, 2003; McCabe, Bostwick, Hughes, West & Boyd, 2010). Meyer's conceptual framework of minority stress explains how these experiences create a hostile social environment that leads to development of mental health problems (Meyer, 2003), including depression and anxiety (Carr, 2010; Chakraborty, McManus, Brugh, Bebbington & King, 2011). Stress, depression, and anxiety have been found to be an important contributing factor to hazardous drinking and high rates of smoking among lesbian and bisexual women (Hughes, McNair, & Szalacha, 2010).

SMW have also been found to have higher prevalence of childhood sexual and physical abuse (McLaughlin, Hatzenbuehler, Xuan, & Conron, 2012). There is increasing evidence that a history of physical or sexual violence is associated with increased cancer risk factors including higher rates of smoking and lower rates of preventative screening (Jun et al., 2010; Loxton, Powers, Schofield, Hussain, & Hosking, 2009; Modesitt et al., 2006). Studies have found that women diagnosed with cancer are twice as likely to have experienced intimate partner violence (Coker, Sanderson, Fadden, & Lucia, 2000). In addition, history of intimate partner violence and childhood sexual assault are negatively associated with cancer well-being (Conron, Mimiaga, & Landers, 2010).

Based on these risk factors, SMW have been identified as a group that may have higher rates of cancer (Aaron et al., 2001). However, current literature predominantly focuses on breast (Cochran et al., 2001; Diamant et al., 2000; Fobair et al., 2001; Matthews, Brandenburg, Johnson, & Hughes, 2004; Meads & Moore, 2013) and cervical/ovarian cancer risk (Aaron et al., 2001; Brandenburg et al., 2007; Brown & Tracy, 2008), and there has been little research of overall cancer prevalence, incidence, or mortality among SMW. A notable exception is a Danish study that included 1,640 SMW (Frisch, Smith, Grulich, & Johansen, 2003). This study found no differences in cancer prevalence among SMW and heterosexual women. Similarly, a Californian study also found no differences in cancer prevalence in women by sexual orientation (Boehmer, Miao, & Ozonoff, 2011). However, another American study of breast cancer mortality found that women in same-sex relationships had more than a three times greater age-adjusted hazard of dying from breast cancer than those living with a male partner (Cochran & Mays, 2012).

Although previous research has made an important contribution to understanding cancer risks in this population, much of the research has been based in the United States and many of the studies have been limited by numerous methodological issues, including small, homogenous convenience samples (i.e., little variation in ethnicity, race, education, income, sexual identities) and a lack of appropriate comparison groups (Hughes, Wilsnack, & Johnson, 2005). Our study aimed to address some of these limitations.

Study Aim

The aim of the study was to compare cancer risk factors and rates of various types of cancer, in a population-based sample of middle-aged Australian women of varying sexual identities. We examined cancer diagnosis, cancer treatment, cancer screening, risk factors (for example physical activity, body mass index (BMI), smoking, alcohol use, stress, and violence) and cancer treatment among women who identified as exclusively heterosexual, mainly heterosexual, lesbian, bisexual, and exclusively lesbian to better understand the cancer risk and prevalence of SMW relative to exclusively heterosexual women.

Hypothesis

Our hypotheses were that compared with exclusively heterosexual women (reference group), SMW would have 1) higher rates of cancer risk factors (higher levels of stress, alcohol and tobacco use, lower cancer screening) and 2) higher rates of cancer diagnosis. We expected that the study outcomes would highlight health inequalities related to cancer risk among SMW and guide the development of additional research and interventions to more fully understand reasons underlying risk factors among this population.

Methods

We analyzed population-based data from the Australian Longitudinal Study of Women's Health (ALSWH). The ALSWH is a prospective study, commenced in 1996, that will track the health of women in three age cohorts (ages 18–23, 45–50, and 70–75 at baseline) for at least two decades (Lee et al., 2005). Sampling from the population was random within each age group, with over-sampling from rural and remote areas to allow for statistical comparisons of the circumstances and health of urban and rural participants. Mailed surveys were completed every 3 years. Details of the study design and methods have been reported elsewhere (Brown & Tracy, 2008; Lee et al., 2005). The current analyses focused on data from the third through to the sixth survey of the mid-aged cohort born between 1941 and 1946. A total of 10,845 participants completed survey 3 in 2001, which included a sexual identity question. This question was answered by 10,451 women, who serve as the analytic sample for this study.

Measures

Sexual identity

Women were asked which of the following best described their sexual orientation: exclusively heterosexual, mainly heterosexual, bisexual, mainly lesbian, or exclusively lesbian. For the current analyses, women who identified as anything other than exclusively heterosexual (i.e., mainly heterosexual, bisexual, mainly lesbian and lesbian) were categorized as sexual minority. Participants who indicated uncertainty about their sexual identity or declined to answer the question ($n = 394$) were excluded from analyses.

Cancer diagnosis and screening

Respondents were asked whether in the past 3 years they had been diagnosed with cancer, conducted self-breast examinations, and had a mammogram, Pap test, or tests for bowel cancer, as well as the results of these screening tests. Cancer diagnoses were analyzed for each of surveys 3, 4, 5, and 6. Screening and all other cancer risk factors were analyzed using survey 3.

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