

Minority stress and community connectedness among gay, lesbian and bisexual Australians: a comparison of rural and metropolitan localities

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In recent years, gay activists and social scientists have sought to bring attention to the impact of homophobic prejudice and discrimination on the psychological wellbeing of lesbian, gay and bisexual (LGB) individuals. Such efforts have gained some traction; for instance, Australia's five largest sporting bodies recently signed an Anti-Homophobia and Inclusion Framework to tackle homophobia in professional sports.¹ While it appears there is a general trend towards greater tolerance of sexual diversity, anti-gay discrimination and harassment is still an everyday occurrence for many LGB Australians. This is likely to be particularly the case among LGB people who reside in less 'gay friendly' localities. Research from North America indicates that LGB individuals residing in regional and rural areas face more hostile environments than their inner city peers due to less-acceptance of non-traditional sexualities and less LGB community presence.² It is unclear whether LGB Australians residing outside of inner city areas face comparable challenges. The present study sought to investigate whether living in rural-remote or other non-inner metropolitan localities uniquely predicted sexual minority stress, disconnection from LGB communities and social isolation among LGB Australians.

Minority stress, community connectedness and psychological wellbeing in LGBs

Research indicates that LGB individuals experience a higher prevalence of psychological distress and psychiatric

Abstract

Objective: To determine whether lesbian, gay and bisexual (LGB) Australians residing in rural-remote and other non-inner metropolitan localities experience increased levels of minority stress and reduced social support relative to their inner metropolitan counterparts.

Methods: A convenience sample of (n=1306) LGB Australians completed an online survey that assessed minority stressors, level of connection with other LGB individuals and social isolation. Postcodes provided were coded into three metropolitan and two rural zones. A series of hierarchical regression analyses were undertaken to examine the effect of locality on minority stress and social support independent of sex, age, ethnicity, education and income.

Results: Those residing in rural-remote localities reported significantly increased concealment of sexuality from friends, more concern regarding disclosure of sexuality, less LGB community involvement, fewer friendships with other LGB people and, among men, higher levels of internalised homophobia than those residing in inner metropolitan areas. Unexpectedly, those residing in outer metropolitan areas of major cities experienced comparable levels of minority stress and LGB disconnection to those in rural and remote Australia.

Conclusions: LGB individuals in rural-remote and outer metropolitan areas of major cities face increased exposure to a number of minority stressors and less LGB community connectedness. These are risk factors associated with psychiatric morbidity in LGB populations.

Implications: Health promotion targeted at reducing homophobia and discrimination in rural-remote and outer metropolitan communities and additional services to assist LGB Australians struggling with stigma and isolation in non-inner city areas may help mitigate the disadvantages faced by these LGB populations.

Key words: lesbian, gay, bisexual, LGBT, minority stress, rural, social support

morbidity than their heterosexual counterparts.^{3,4} This disparity in mental health outcomes has been widely attributed to the experience of *sexual minority stress*.^{5,6} Sexual minority stress refers both to the experience of negative events associated with one's sexual orientation including anti-gay violence ('gay bashing'), verbal taunts and social ostracism (known as distal stressors), as well as negative expectations and beliefs that LGB individuals may form about their sexuality (known as proximal stressors). Three proximal stressors identified in the theoretical and

empirical literature are: internalised negative beliefs and attitudes regarding one's own homosexuality (*internalised homophobia*); stress associated with concealing one's sexual orientation for fear of harm (*concealment*); and increased vigilance and expectations of rejection in social interactions based on one's sexual orientation (*stigma consciousness*).⁵ These proximal stressors have been consistently linked with poorer adjustment and mental health outcomes in LGB people.⁷⁻⁹ In coping with minority stressors, many same-sex attracted individuals are able to benefit

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from connectedness with other LGB people. Affiliation with an LGB community is thought important as it allows LGB individuals to experience social interactions where they are not stigmatised or discriminated against based on their sexuality, and it also provides individuals with support in coping with homophobic stigma.⁵ Indeed, in the empirical literature, connectedness with an LGB community has been found to ameliorate the impact of minority stress on the mental health of LGB individuals.^{10,11}

Rural locality, minority stress and social isolation among LGB individuals

Lesbian, gay and bisexual Australians residing in rural areas likely experience increased discrimination and harassment relative to those residing in inner metropolitan areas. Flood and Hamilton reported significant disparities in homophobic attitudes between rural vs. inner city areas in Australia, with 50% of those polled in rural Central South-West Queensland believing homosexuality to be 'immoral' compared with only 14% in inner city Melbourne.¹² Furthermore, in rural Australia, LGB communities are often absent or invisible, meaning that same-sex attracted individuals do not have access to important social supports to counter the experience of stigma and marginalisation.^{13,14} LGB people in rural and remote areas face the additive stressors of greater discrimination and less LGB community presence (see Figure 1). Such conditions have been widely implicated in the experience of depression, substance use and suicidality among LGB rural youth.^{15,16}

There is a small body of qualitative research detailing stigma and isolation faced by LGB people in certain rural localities in Australia.^{13,14,17} However, no studies have

directly explored differences in minority stress, community connectedness and social isolation experienced between rural and metropolitan residing LGB individuals. Furthermore no previous studies have drawn on LGB individuals from diverse rural localities across Australia. Such research is necessary to identify whether LGB individuals in non-inner city localities face elevated mental health risk factors relative to their inner metropolitan counterparts. These findings may help inform the provision of services to vulnerable LGB populations in Australia.

Objective

This study aimed to determine whether rural-residing LGBs experience excess minority stress and social isolation compared with their inner metropolitan counterparts. It was hypothesised that residing in rural localities would be associated with increased experiences of internalised homophobia, concealment of sexuality (less openness with family, friends and co-workers and concern regarding disclosure) and stigma consciousness. In addition, we predicted that rural-based LGB individuals would:

- experience less active involvement in LGB community events, fewer friendships with other LGB people, less perceived connectedness to, and presence of, an LGB community; and, as such, would:
- experience greater social isolation.

Method

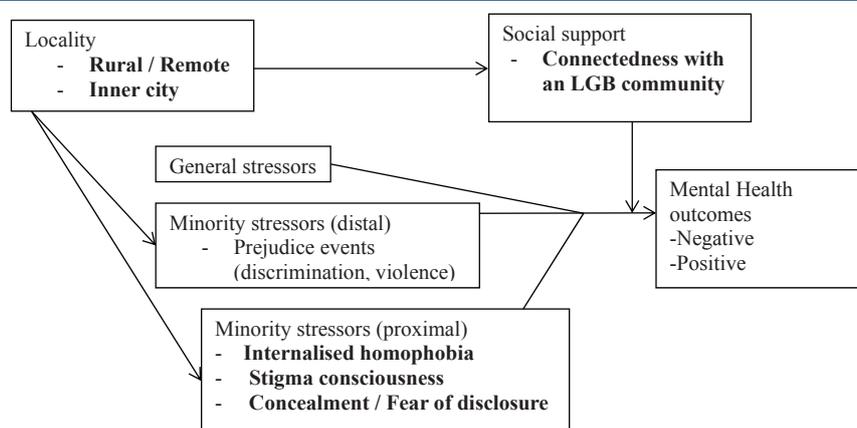
Participants

Participants in the present study were drawn from a cross sectional online survey designed to elicit information on same-sex attracted (gay, lesbian, bisexual and otherwise same-

sex attracted) individuals' experiences of minority stress and their psychological wellbeing. To be eligible for participation, recruits were required to be aged 18 years and over, same-sex attracted and Australian residents. The survey was accessible via a website from February 2013 to June 2014 in order to recruit a sufficient number of rural participants to undertake planned statistical analyses. We used a combination of snowball and targeted sampling using social media and a paid advertisement in a widely circulated LGBT community online newspaper.

Overall, 2,111 respondents attempted the survey from across Australia. Respondents failing to complete at least one entire measure of interest were excluded from the sample. The final sample consisted of 1,306 LGB participants, including 721 men and 585 women, giving a 60% completion rate. Participants ranged in age from 18 to 73 years ($M=30.94$, $SD=11.7$). Seventy-seven per cent of respondents self-identified as Anglo-Saxon Australian, 6.7% as non-Anglo-Saxon European (e.g. southern and eastern European), 5.6% as Asian, 1.1% as Middle Eastern and 4.6% as mixed ethnicity. The majority of participants were non-religious (73%), Christian (13%), Buddhist (3%), Muslim (0.9%) and Jewish (0.7%). Fifty-nine per cent of the total sample had completed an undergraduate or postgraduate degree. A wide range of incomes was reported with 36.1% earning less than \$20,799 per year, 29.1% earning \$20,800–\$51,999 per year, 17.7% earning \$52,000–\$64,999 per year and 19% earning more than \$78,000 per year. All participants resided in Australia (50.9% NSW; 17.4% VIC; 15.6% QLD; 6% SA; 5.5% WA; 2.9% ACT; 1.4% TAS; 0.3% NT), with 44.3% residing in an inner metropolitan area of a major city, 30.8% in an outer metropolitan area of a major city, 14.8% in mid-sized metropolitan areas (>100,000–999,999), 4.6% in a large or small rural centre (10,000–99,999), and 5.4% in a rural locality (<10,000) or remote area. At present, no random-selection population-based data exist with which to assess the representativeness of LGB individuals in our sample. However, demographics observed in the present sample were largely commensurate with other large online samples of LGB Australians.¹⁸ It should be noted that extant research suggests online LGB samples tend to be younger, more highly educated, more likely to be students and more likely to reside in metropolitan areas than the general LGB population.¹⁹

Figure 1: Conceptual model of the relationship between locality, exposure to sexual minority stressors, connectedness with an LGB community and mental health outcomes among LGB individuals (adapted from Meyer, 2003).⁵



Procedure

Approval to conduct the study was obtained by the Human Research Ethics Committee of the University of Sydney. Respondents were directed to a URL address that was linked to a participant information statement and consent form. After verifying that they were 18 years or over and Australian residents, participants completed the 30–45 minute questionnaire hosted on Limesurvey™.

To determine a participant's geographic locality postcodes were coded based on the Rural, Remote and Metropolitan Areas (RRMA) classification system.²⁰ The RRMA involves seven classifications and two metropolitan zones (capital cities and other metropolitan areas areas >100,000), three rural zones (large rural centres [25,000–99,999], small centres [10,000–24,999] and other rural areas [<10,000]) and two remote zones. Inner metropolitan areas of major cities (>1,000,000) tend to be the most 'gay friendly' localities in Australia with comparatively large, well-established and highly visible LGBT communities. Indeed, available empirical data indicates that inner city areas in Australia tend to have: a) the highest proportion (and highest absolute numbers) of LGBT individuals; and b) the lowest levels of homophobic attitudes of any locality.^{21,22} As a result, respondents residing within inner metropolitan areas of major cities served as the reference group for all locality-based comparisons.

To identify those residing in inner metropolitan areas of major cities, we refined the RRMA classification. Major cities were defined as those with a population of >1,000,000 (Sydney, Melbourne, Brisbane, Perth and Adelaide), and inner metropolitan areas as postcodes that fell within a 10 km radius of the General Post Office within each city's Central Business District (CBD). Postcodes that fell outside of this area, but within the RRMA metropolitan zone of the major city, were coded as 'outer metropolitan areas'. Mid-sized metropolitan areas included all cities with a population greater than 100,000 but less than 1,000,000 (including capital cities Canberra, Hobart, and Darwin). Rural and remote zones were classified into two categories: 1) rural centres (large and small) of 10,000–99,999 (e.g. Dubbo, Albury-Wodonga and Bendigo); and 2) other rural (<10,000) and remote areas. Coding was completed by comparing postcode to RRMA data provided by the Australia Bureau of Statistics.

Measures

All measures were validated self-report questionnaires with responses registered on a 7-point Likert-type scale ('strongly agree' to 'strongly disagree'). Items were worded so as to be applicable to gay, lesbian, bisexual and otherwise-same sex attracted individuals. Internalised homophobia in men was measured via the seven-item Internalised Homophobia Scale for Men – Short Form.²³ Items reflect the extent of personal comfort (e.g. 'Even if I could change my sexual orientation, I wouldn't'), social comfort and public identification as a gay man. For women, internalised homophobia was measured via the 39-item Lesbian Internalised Homophobia Scale (LIHS) – Short Form, which assesses the extent of personal identification as a lesbian, connection with a lesbian community, personal feelings about being a lesbian and attitudes toward other lesbians (e.g. 'If some lesbians/bisexuals would change and be more acceptable to the larger society, same-sex attracted women as a group would not have to deal with so much negativity and discrimination').^{24,25} The 10-item Stigma Consciousness Scale (SCS) was used to assess the extent to which LGBT individuals expected to be judged negatively based on their stereotyped status (e.g. 'Most heterosexuals have a lot more homophobic thoughts than they actually express').²⁶ We further analysed one dimension (five items) of the Lesbian Gay Bisexual Identity Scale, labelled 'need for privacy', which gauges the extent to which an individual is concerned about protecting one's privacy as an LGBT person (e.g. 'I think very carefully before coming out to someone').²⁷ All scales had acceptable to excellent internal consistency ($\alpha = 0.74$ to 0.91).

Openness about one's sexual orientation and connectedness with an LGBT community was measured by the 13-item LGBT Community Involvement Inventory.²⁸ The first three items assess how open/concealed an individual is about being LGBT with 'family', 'friends' and 'work colleagues and employers' ('completely open' to 'completely hidden'). High scores indicate a greater degree of concealment regarding one's sexual orientation. Participants also rated six items that assessed their involvement in the LGBT community (e.g. 'How often do you attend LGBT-oriented bars or night clubs?'), and single items assessing perceived connectedness with the LGBT community ('not at all connected to the LGBT community' to 'extremely connected to the

LGBT community'), proportion of friends who are LGBT ('predominately heterosexual' to 'predominately LGBT'), and the perception of LGBT representation within one's locality (from 'very small LGBT population' to 'a very large LGBT population'). Social isolation was measured via two items ('You don't have enough friends' and 'You are alone too much').²⁹ Participants were asked to indicate how true each statement was for them on a scale of 1 (very true) to 3 (not true).

Control variables

Sex, ethnicity and education were treated as binary variables in which male, white ethnicity, tertiary degree were coded as 1, whereas female, non-white ethnicities and no tertiary degree were coded as 0. Age was assessed with an open-ended question and kept in interval form. Income was determined through a scale of personal annual income that involved 11 categories, starting with nil and ending above \$104,000 per year.

Analytical plan

A series of hierarchical ordinary least-squares (OLS) regression models tested the extent to which participant's rural or metropolitan locality predicted exposure to minority stressors (internalised homophobia, stigma consciousness, concealment/need for privacy), connectedness with a gay community (active involvement, friendships, perceived connectedness, representation and overall LGBT community connectedness) and social isolation. Variables were entered into the regression equation in two blocks. Block 1 included the demographic control variables of sex (1=male, 0=female), ethnicity (1=Anglo-Australian, 0=Other ethnicity), income, education and age. Block 2 added the location variables to the demographic controls, specifically: 1) outer metropolitan (major city); 2) mid-sized metropolitan area; 3) rural centre; and 4) other rural or remote area. The inner metropolitan area of major cities was used as a reference group for all comparisons.

Results

Descriptive statistics for minority stress and connectedness

No normative data exists with regards to minority stress or connectedness measures. Quantitative descriptions of univariate statistics are included in Table 1. Descriptive means for internalised homophobia in men

and women indicated that most participants 'disagreed' or 'somewhat disagreed' with negative statements about homosexuality and tended to 'neither agree nor disagree' that they faced negative stereotypes from heterosexuals in the community. Most of the sample were 'completely out' to 'mostly out' to friends and family, and 'mostly out' to 'somewhat out' to colleagues and work supervisors. The majority of participants were 'rarely' to 'sometimes' involved in LGB community activities, 'somewhat' to 'not very' connected with the LGB community, and reported friends being 'mostly heterosexual' to 'about half LGB and half heterosexual'. Most participants reported social isolation was 'not true' to 'somewhat true' of their present experience.

Locality and proximal minority stressors

Differences in the experience of minority stress across rural and metropolitan localities are presented in Tables 2 and 3. As shown, demographic control variables (sex, age, ethnicity, education and income) explained a significant proportion of variance in responses for all minority stressors ($p < 0.05$). With regards to locality, explained variance R^2 was significant ($p < 0.05$) for the need for privacy and for internalised homophobia in

men and marginally significant ($p < 0.10$) for concealment from friends. This indicated that locality made a unique contribution, above and beyond that of demographic controls, in predicting these sources of minority stressors. When examining the associations between specific localities and minority stressors, residing in rural and remote areas was significantly associated with concern regarding disclosure ($\beta = 0.07$, $p < 0.05$), concealment of sexuality from friends ($\beta = 0.08$, $p < 0.05$) and, among men, increased levels of internalised homophobia ($\beta = 0.08$, $p < 0.05$). On the other hand, residing in a rural centre (10,000–99,999) was not a significant predictor of any minority stressor. With regard to metropolitan localities, those in mid-sized metropolitan areas reported significantly increased concern regarding disclosure of sexuality ($\beta = 0.06$, $p < 0.05$). Those residing in an outer metropolitan area of a major city reported significantly increased levels of internalised homophobia in men ($\beta = 0.10$, $p < 0.05$) and a trend toward increased internalised homophobia in women ($\beta = 0.08$, $p = 0.054$), as well as significantly increased concern regarding disclosure of sexuality ($\beta = 0.10$, $p < 0.05$) for both genders. Finally, outer metropolitan locality was associated with significantly reduced expectations of negative judgment based on one's sexual orientation ($\beta = -0.07$, $p < 0.05$).

Locality, connectedness to the LGB community and social isolation

Results of location-based differences in community connectedness and social isolation are found in Table 3. Locality was found to explain a significant proportion of the variance in LGB community connectedness beyond that of demographic controls ($p < 0.05$), see Table 3. In fact, explained variance R^2 indicated that locality independently accounted for 21% of the variance in overall LGB community connectedness. With regard to social isolation, only demographic variables (and not locality) explained a significant proportion of variance (see Table 3). Relative to inner metropolitan areas, those in all other localities reported significantly reduced overall connectedness with an LGB community (Table 3). Investigating individual subscales of the LGB Community Involvement Inventory revealed that those in outer metropolitan areas reported the lowest LGB community involvement ($\beta = -0.14$, $p < 0.05$), connectedness ($\beta = -0.16$, $p < 0.05$) and perceived representation ($\beta = -0.50$, $p < 0.05$), while those in rural-remote areas reported the lowest proportion of friendships with other LGB individuals ($\beta = -0.17$, $p < 0.05$).²⁸ Finally, only LGB Australians in outer metropolitan areas reported significantly increased social isolation ($\beta = 0.07$, $p < 0.05$).

Table 1: Univariate statistics for each variable used in the analyses.

Variable	Mean (SD) or %	Range (Min – Max)
Demographics		
Sex	55% Male	
Age	30.94 (11.67)	18 – 73 years
Ethnicity	77% Anglo-Australian	
Education	59% Tertiary Degree	
Income ^a	6.06 ^b (3.19)	
Proximal minority stressors		
Internalised homophobia (Men)	2.35 (0.98)	(1-6.43)
Internalised homophobia (Women)	2.73 (0.77)	(1-5.62)
Stigma consciousness	4.09 (1.01)	(1-7)
Concealment (family)	2.08 (1.37)	(1-5)
Concealment (friends)	1.50 (0.93)	(1-5)
Concealment (colleagues)	2.36 (1.34)	(1-5)
Concern regarding disclosure	4.27 (1.33)	(1-7)
LGB community connectedness & social isolation		
LGB community involvement	2.35 (0.73)	(1-5)
Connectedness with LGB community	2.60 (0.96)	(1-5)
LGB representation in locality	2.78 (1.19)	(1-5)
Proportion of friends who are LGB	2.5 (1.11)	(1-5)
Overall LGB connectedness	2.55 (0.75)	(1-4.83)
Social isolation	1.78 (.62)	(1-3)

a. Income was registered on an 11-point scale (1=Nil - 11=>\$104,000 per annum).

b. ~\$600-\$799 per week (\$31,200-\$41,599 per year). Means (SD) and Range for all scales have been divided by the number of items within each scale.

Discussion

This study sought to identify if locality was a unique predictor of minority stress, disconnection from LGB communities and social isolation among LGB Australians. Overall, it was found that those in rural-remote and outer metropolitan areas experienced the greatest burden of minority stress with increased internalised homophobia in men, greater concealment of sexuality from friends and more concern about disclosing their sexuality. Interestingly, those in larger rural centres and mid-sized metropolitan areas reported broadly equivalent levels of minority stress as those in inner city metropolitan areas. As expected, those in all non-inner metropolitan localities reported reduced connectedness with an LGB community in terms of active involvement, perceived connectedness, friendships with other LGB people and perceived LGB representation in their locality.

The present findings suggest that, as predicted, LGB individuals in rural and remote

areas face increased challenges relative to their inner city peers. First, rural-remote LGB individuals were less likely to be 'out' to friends and were generally more concerned about disclosing their sexuality. While concealment of one's sexual orientation can assist in minimising anti-gay discrimination in hostile environments, it is also known to cause strain on LGB individuals due to increased vigilance required to hide one's sexuality. Concealment has been found to be associated with a number of adverse psychosocial outcomes such as avoidance of close relationships, psychological distress and depression.³⁰ Second, only men in rural and remote areas reported higher levels of internalised homophobia, a risk factor consistently linked with depression, suicidality and risky sexual behaviour in gay and bisexual men.^{8,31} One plausible reason that rurality predicted internalised homophobia in men but not in women relates to the emphasis placed on traditional notions of masculinity within rural communities and the severe social sanctions (e.g. bullying and social exclusion) facing men in these communities who are perceived to transgress gender roles.³² In addition to increased concealment and internalised homophobia, those in rural-remote areas reported fewer friendships with other LGB people, as well as reduced involvement and sense of connection with an LGB community.

Table 2: Summary of Hierarchical Regression Analysis for Variables Predicting Internalised Homophobia (IH) (N = 1306).

Variable	IH (Men)			IH (Women)		
	B	SE	β	B	SE	β
Age	-0.008	0.003	-0.11*	-0.017	0.004	-0.209**
Ethnicity	-0.145	0.09	-0.062	-0.105	0.076	-0.057
Education	0.068	0.078	0.034	0.012	0.066	0.008
Income	-0.049	0.014	-0.165*	-0.03	0.013	-0.12*
R ²	0.059			0.094		
F	11.75**			14.21**		
Outer metro (Major city)	0.207	0.088	0.10*	0.144	0.074	0.088 ^a
Mid-sized metro (>100,000)	0.097	0.114	0.033	0.11	0.093	0.053
Rural centre (10,000 – 99,999)	-0.116	0.177	-0.025	0.271	0.164	0.07
Other rural or remote (<10,000)	0.370	0.183	0.078*	0.08	0.129	0.027
R ²	0.067			0.103		
F	7.13**			7.80**		
Explained Variance R ²	0.013*			0.009		

*Localities were represented as four dummy variables with inner metropolitan areas serving as the reference group (10km radius from CBD of Major city [population >1 000 000]). Ethnicity was coded as Anglo-Australian = 1 / Other Ethnicity = 0; Education coded based on highest attained education (1=Tertiary Degree / 0=No Tertiary Degree); Income was assessed on an 11 point scale (1=Nil - 11=>\$104,000 per annum) *p<0.05; **p<0.01; a: p=0.05-0.1*

Lack of social support likely compounds the increased minority stress experienced by those living in rural-remote areas. Our findings reinforce those of past qualitative research, indicating that LGBs living in rural and remote Australia experience greater likelihood of risk factors linked to adverse mental health outcomes and suicidality.^{13,15}

Contrary to our predictions, we found

rurality was not universally linked to poorer outcomes as residing in larger rural centres (10,000– 99,999) was not associated with increased minority stress or social isolation. There are a number of potential explanations for this finding. The large rural centres represented in our sample tended to have regional universities and considerable student populations (e.g. Armidale, Lismore,

Table 3: Summary of Hierarchical Regression Analysis for variables predicting Need for Privacy, Concealment (Friends), Social Isolation and Overall LGB Community Connectedness (N = 1306).

Variable	Need for privacy			Concealment (Friends)			Social isolation			Overall LGB connectedness		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Sex	-0.025	0.074	-0.009	0.021	0.051	0.012	0.074	0.038	0.055	0.024	0.042	0.016
Age	0.00	0.004	0.002	-0.003	0.003	-0.033	0.002	0.002	0.037	0.008	0.002	0.130**
Ethnicity	-0.136	0.089	-0.043	-0.279	0.061	-0.13**	0.049	0.046	0.03	0.085	0.051	0.047
Education	0.174	0.078	0.065*	0.089	0.053	0.048	-0.081	0.04	-0.06*	0.135	0.044	0.088**
Income	-0.103	0.014	-0.25**	-0.048	0.01	-0.17**	-0.052	0.007	-0.248**	0.027	0.008	0.114**
R ²	0.062			0.054			0.063			0.07		
F	16.36**			15.17**			16.15**			9.98**		
Outer metro (Major city)	0.28	0.087	0.098**	0.085	0.06	0.044	0.096	0.045	0.066*	-0.559	0.046	-0.345**
Mid-sized metro (>100,000)	0.238	0.111	0.063**	0.025	0.076	0.01	0.007	0.057	0.004	-0.458	0.058	-0.215**
Rural centre (10,000 – 99,999)	0.197	0.183	0.031	-0.016	0.125	-0.004	0.044	0.094	0.014	-0.645	0.096	-0.177**
Other rural or remote (<10,000)	0.394	0.164	0.069*	0.312	0.113	0.08**	0.072	0.085	0.024	-0.830	0.086	-0.254**
R ²	0.073			0.058			0.067			0.21		
F	10.73**			9.442**			9.55**			16.5**		
Explained Variance R ²	0.011**			0.007 ^a			0.004			0.21**		

Note: Localities were represented as four dummy variables with inner metropolitan areas serving as the reference group (10km radius from CBD of Major city [population >1 000 000]). Sex was coded Male=1 / Female=0; Ethnicity was coded as Anglo-Australian = 1 / Other Ethnicity = 0; Education coded based on highest attained education (1=Tertiary Degree / 0=No Tertiary Degree); Income was assessed on an 11 point scale (1=Nil - 11=>\$104,000 per annum)

*p<0.05; **p<0.01; a: p=0.05-0.1

Bathurst). As such, we may have had an over-representation of students who did not grow up in a rural area, who may have ongoing links to metropolitan LGB communities, and who may be insulated by progressive values encouraged within tertiary institutions. Additionally, it is possible that larger rural centres have the critical mass for LGB communities that may ameliorate the experience of minority stress.

As noted, mixed findings were observed with regard to metropolitan areas. Those in mid-sized metropolitan areas reported minor disadvantage relative to inner metropolitan peers while those in outer metropolitan areas of major cities experienced comparable disadvantage to those in rural-remote areas. Indeed, in outer metropolitan areas LGB individuals reported greater concern regarding disclosure of sexuality, and gay/bisexual men reported increased internalised homophobia (with a trend toward increased internalised homophobia observed in lesbian/bisexual women). These results support previous findings of considerable regional variability in homophobic attitudes within major metropolitan areas.¹² A tentative explanation for these findings is that demographic factors such as low-SES background and ethnic minority status, which are more highly represented in certain outer metropolitan areas, may contribute to a more stigmatising environment for LGB individuals. Indeed, low SES and ethnic minority status have been found to be associated with increased minority stress among LGB samples in previous studies.^{33,34} In a similar vein, the finding that those in outer metropolitan areas reported lower levels of connectedness with an LGB community, suggests that many in outer metropolitan areas are unable to benefit from proximity to large gay communities in inner city areas. Those in outer metropolitan areas also reported increased social isolation, something not observed among the rural sample. It is possible that LGB individuals in outer metropolitan areas face many of the disadvantages of rural LGB individuals without the protective factors associated with rural living (e.g. close-knit and cohesive communities), which may assist in countering the experience of social isolation.

Finally, stigma consciousness – the extent to which an individual expects to be judged or stereotyped based on their sexual orientation – was found to be unrelated to rurality, and

was lower among those in outer metropolitan than those in inner metropolitan areas of major cities. Such findings run contrary to our prediction that stigma consciousness should be higher in more hostile non-inner city localities. One plausible explanation of these findings is that LGB individuals presently residing in inner city metropolitan areas may have migrated to these localities due to greater experiences (or greater anticipation) of sexuality-based stigma and discrimination. Likewise, those LGB individuals who choose to remain in non-inner city localities may do so due to less experience of, or concern regarding, sexuality-based stigma.

Limitations

These data were obtained from a convenience sample of LGB individuals recruited by social media, gay press and LGB organisations. As such, our sample is likely more affiliated with the gay community, more educated and younger than the LGB population at large. This is likely to be particularly the case among rural and remote respondents, as those who are less 'out' regarding their sexuality may not have had access to our recruitment networks or may have been wary about participating in LGB research. As such, our findings are likely to be conservative estimates of the level of sexual minority stress, disconnection and isolation in rural and remote samples.

Another notable limitation is that place of residence is not static and, as a result, an LGB individual's current residence may not reflect the locality where they experienced minority stress.² For instance, some LGB individuals currently residing in inner metropolitan areas may have migrated from rural or remote localities due to stigma and discrimination (as such ongoing minority stress such as internalised homophobia is likely attributable to their previous area of residence). Future studies should assess at what life-stage and for how long individuals resided in particular localities. For instance, growing up and coming out in a rural community is likely more challenging than moving to a rural area in adulthood.

Conclusions

The present study identified geographic locality as a unique predictor of minority stress, community connectedness and social isolation among LGB Australians. In particular,

those in rural-remote areas and outer metropolitan areas of major cities appear to face the greatest disadvantage, experiencing increased concealment and concern in disclosing their sexuality, increased internalised homophobia among men, and disconnection from LGB peers. Such findings have clear implications for the mental health and wellbeing of LGB individuals residing in these areas. Our findings also replicate and extend on previous quantitative studies conducted in North America by identifying increased exposure to sexual minority stressors (e.g. internalised homophobia) in outer metropolitan localities of major cities, in addition to rural-remote areas.²

Implications

The findings identify LGB populations in rural-remote and outer metropolitan areas of Australia as at particular risk of psychiatric morbidity due to increased exposure to minority stress and less LGB community connectedness. There are number of targeted public health and health service interventions that may assist in mitigating the risk faced by LGB individuals in these localities. First, health promotion focused on reducing homophobic stigma and discrimination and recognising sexual diversity in rural/outer metropolitan communities may assist in creating less hostile social environments for LGB individuals. Next, medical and allied health professionals should be educated about the additional stressors faced by rural-remote/outer metropolitan LGB individuals and the role these stressors play in a range of adverse mental health outcomes. Health professionals (particularly in rural-remote areas where LGB resources are particularly scarce and hard to access) need to develop links and referral networks with those who have specialist expertise in working with LGB people, as well as organisations that can provide information and support to LGB people. Given LGB resources often exist in metropolitan areas, the use of phone and online counselling and support services may assist in bridging this divide. Finally, developing support networks and groups for individuals who are same-sex attracted or questioning, in rural remote/outer metropolitan areas, may assist in reducing the burden of stigma and marginalisation among these vulnerable LGB populations.

References

1. Australian Human Right Commission. *Football Tackles Homophobia Ahead of Bingham Cup* [Internet]. Sydney (AUST): The Commission; 2014 [cited 2014 Apr 20]. April 9. Available from: <https://www.humanrights.gov.au/news/stories/football-tackles-homophobia-ahead-bingham-cup>
2. Swank E, Frost D, Fahs B. Rural location and exposure to minority stress among minorities in the United States. *Psychol Sex.* 2012;3(3):226-43.
3. King M, Semlyen J, See Tai S, Killaspy H, Osborn D, Popelyuk D, Nazareth I. A systematic review of mental disorder, suicide, and deliberate self-harm in lesbian, gay and bisexual people. *BMC Psychiatry.* 2008;8(1):1-17.
4. McNair R, Kavanagh A, Aguis P, Tong B. The mental health status of young adult and mid-life non-heterosexual Australian women. *Aust NZ J Public Health.* 2005;29(3):265-71.
5. Meyer I. Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychol Bull.* 2003;129(5):674-97.
6. Meyer I. Minority stress and mental health in gay men. *J Health Soc Behav.* 1995;36(1):38-56.
7. Lewis N. Mental health in sexual minorities: Recent indicators, trends, and their relationships to place in North America and Europe. *Health Place.* 2009;15(4):1029-45.
8. Newcomb M, Mustanski B. Internalized homophobia and internalising mental health problems: A meta-analytic review. *Clin Psychol Rev.* 2010;30(8):1019-29.
9. Lewis R, Derlega V, Griffin J, Krowinski A. Stressors for gay men and lesbians: Life stress, gay-related stress, stigma consciousness, and depressive symptoms. *J Soc Clin Psychol.* 2003;22(6):716-29.
10. Limin M, Kidd M, Rogers G, Andrews G, Newman C, Booth A, et al. Social factors associated with major depressive disorder in homosexually active, gay men attending general practices in urban Australia. *Aust N Z J Public Health.* 2009;33(1):83-6.
11. Detrie P, Lease S. The relation of social support, connectedness, and collective self-esteem to the psychological well-being of lesbian gay and bisexual youth. *J Homosex.* 2007;53(4):173-99.
12. Flood M, Hamilton C. *Mapping Homophobia in Australia – Australian Institute (Webpaper)* [Internet]. Melbourne (AUST): Gay and Lesbian Health Victoria; 2005 [cited 2014 May 7]. Available from: <http://www.glhv.org.au/consumer-material/mapping-homophobia-australia-australia-institute-webpaper>
13. Gottschalk LH. Coping with stigma: Coming out and living as lesbians and gay men in regional and rural areas in the context of problems of rural confidentiality and social exclusion. *Rural Soc Work Community Pract.* 2007;12(2):31-46.
14. Edwards J. Invisibility, safety and psycho-social distress among same-sex attracted women in rural South Australia. *Rural Remote Health.* 2005;5(1):343.
15. Quinn K. Rural suicide and same-sex attracted youth: Issues, interventions and implications for rural counselors. *Rural Remote Health.* 2003;3(222):5.
16. Wainer J, Chesters J. Rural mental health: Neither romanticism nor despair. *Aust J Rural Health.* 2000;8(3):141-7.
17. Thorpe A. Out in the bush: rural health and homosexuality. In: Briskman L, Lynn M, La Nauze H, editors. *Challenging Rural Practice: Human Services in Australia.* Geelong (AUST): Deakin University Press; 1999. p. 177-93.
18. Leonard W, Pitts M, Mitchell A, Lyons A, Smith A, Patel S, et al. 4102.0. - *Private Lives 2: The second National Survey of the Health and Wellbeing of Gay, Lesbian, Bisexual and Transgender (GLBT) Australians.* Canberra (AUST): ABS; 2012 [cited 2014 Nov 26]. Available from: <http://www.glhv.org.au/files/PrivateLives2Report.pdf>
19. Ross MW, Månsson SA, Daneback K, Cooper A, Tikkanen R. Biases in internet sexual health samples: Comparison of an internet sexuality survey and a national sexual health survey in Sweden. *Soc Sci Med.* 2005;61(1):245-52.
20. Department of Primary Industries and Energy and Department of Human Services and Health. *Rural, Remote and Metropolitan Areas Classification: 1991 Census Edition.* Canberra (AUST): AGPS; 1994.
21. Australian Bureau of Statistics. 4102.0. - *Same-sex Couples, Australia 1996-2011* [Internet]. Canberra (AUST): ABS; 2013 [cited 2014 Nov 26]. Available from: <http://www.abs.gov.au>
22. Gorman-Murray A, Brennan-Horley C, McLean K, Waite G, Gibson C. Mapping same-sex couple family households in Australia. *J Maps.* 2010;6(1):382-92.
23. Smolenski D, Diamond P, Ross M, Rosser B. Revision, criterion validity, and multi-group assessment of the Reactions to Homosexuality scale. *J Pers Assess.* 2010;92(6):568-76.
24. Szymanski D, Chung B. The lesbian internalized homophobia scale: A rational/theoretical approach. *J Homosex.* 2001;41(2):37-52.
25. Piggot M. *Double Jeopardy: Lesbians and the Legacy of Multiple Stigmatized Identities.* [Unpublished Psychology Thesis]. Melbourne (AUST): Swinburne University of Technology; 2004.
26. Pinel E. Stigma Consciousness: The psychological legacy of social stereotypes. *J Pers Soc Psychol.* 1999;76(1):114-28.
27. Mohr J, Fassinger E. Measuring dimensions of lesbian and gay male experience. *Meas Eval Couns Dev.* 2000;33:66-90.
28. Hunt C, Gonsalkorale K, Nosek B. Links between psychosocial variables and body dissatisfaction in homosexual men: Differential relations with the drive for muscularity and the drive for thinness. *Int J Mens Health.* 2012;11(2):127-36.
29. Frost D, Meyer I. Internalised homophobia and relationship quality among lesbians, gay men and bisexuals. *J Couns Psychol.* 2009;56(1):97-109.
30. Corrigan P, Mathews A. Stigma and disclosure: Implications for coming out of the closet. *J Ment Health.* 2003;12(3):235-48.
31. Ross W, Berg R, Schmidt A, Hospers H, Breveglieri M, Furegato M, et al. Internalised homonegativity predicts HIV-associated risk behavior in European men who have sex with men in a 38-country cross-sectional study: Some public health implications of homophobia. *BMJ.* 2013;3:e001928.
32. Gottschalk L, Newton J. Rural homophobia: Not really gay. *Gay Lesbian Issues Psychol Rev.* 2009;5(3):153-9.
33. Baum S, O'Connor K, Stimson R. *Fault Lines Exposed: Advantage and Disadvantage across Australia's Settlement System.* Clayton (AUST): Monash University Press; 2005.
34. Rosario M, Schrimshaw EW, Hunter J. Ethnic/racial differences in the coming-out process of lesbian, gay, and bisexual youths: A comparison of sexual identity development over time. *Cultur Divers Ethnic Minor Psychol.* 2004;10(3):215-28.