

The relationship between living alone and depressive symptoms among older gay men: the moderating role of sense of belonging with gay friends

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ABSTRACT

Background: Living alone is a risk factor for depressive symptoms among older adults, although it is unclear if it is a risk factor for older gay men. A sense of belonging to the gay community is protective and might compensate for living alone. This research investigated whether a sense of belonging with gay friends weakened the relationship between living alone and depressive symptoms among older gay men.

Methods: A community sample of 160 Australian gay men aged 65–92 years completed the Center for Epidemiologic Studies Depression Scale and two visual analogue scales assessing a sense of belonging with gay friends.

Results: Results supported the moderation model, with increasing levels of belonging with gay friends weakening the relationship between living alone and depressive symptoms.

Conclusion: Results imply that enhancing a sense of belonging with gay friends among older gay men who live alone is likely to be a protective factor in relation to depressive symptoms.

Key words: living alone, depressive symptoms, gay men, sense of belonging

Older age (Pirkis *et al.*, 2009; Zhang *et al.*, 2012) and sexual orientation (Cochran and Mays, 2009) are risk factors for depression among men. Pirkis *et al.* (2009) reported the age-adjusted prevalence rate of clinically significant depression to be 8.6% and a major depressive episode to be 1.9% among a community sample of 9,013 Australian men aged 60 years and over. In relation to sexual orientation, Cochran and Mays (2009) reported that 21.5% of their sample of gay men were likely to meet the criteria for major depressive disorder in the previous 12 months and were 2.3 times more likely to have a probable diagnosis than heterosexual men. It is difficult to obtain prevalence rates specifically for older gay men. Available evidence indicates that 30% of a sample of gay men aged 50–82 years self-reported feeling depressed (Shippy *et al.*, 2004) and that the average score for depressive symptoms among a sample of

gay men aged 44–75 years demonstrated that the sample experienced depressive symptoms “some or a little of the time” (Wight *et al.*, 2012). Given that older gay men are exposed to the risks associated with age and sexual orientation, it is likely to be a significant problem for this population.

A risk factor for depression among older adults is living alone (Chou *et al.*, 2006; Tintle *et al.*, 2011; Oh *et al.*, 2015). This relationship has been explained at least in part by a lack of belonging. Living alone has been identified as a risk factor for thwarted belongingness, which occurs when the basic human need to belong is unmet (Van Orden *et al.*, 2010). Baumeister and Leary (1995) proposed that people “have a pervasive drive to form and maintain...lasting, positive, and significant interpersonal relationships” (p. 1). These interpersonal relationships need to be frequent, positive, and stable (Baumeister and Leary, 1995). Others have proposed that people need a psychological sense of belonging for mental health (Hagerty *et al.*, 1992). Hagerty *et al.* (1992) defined a sense of belonging as an individual’s experience of being valued or important, and as though one fits in with those around them.

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Low levels of a sense of belonging have been associated with depressive symptoms among older adults (McLaren *et al.*, 2007) and among gay men (McLaren *et al.*, 2008). The relationship has not been investigated among older gay men.

Although there is a theoretical explanation to link living alone with depression among older adults, empirical evidence is mixed, with the results varying according to gender, age, and nationality of the participants. For example, Oh *et al.* (2015) supported the relationship between living alone and higher levels of depressive symptoms among older men and women in a Korean sample aged 60 years and older. Tintle *et al.* (2011) found the relationship among a sample of Ukrainian older men but not older women (aged 50 years and older) and Chou *et al.* (2006) found the link in older women but not older men in their sample of Chinese adults aged 60 years and older. There appears to be just one study that has examined the link between living alone and depression among gay men. An Australian study of gay men aged 50 years and older (Lyons, 2015) did not find an association between living alone and depression, raising the possibility that the relationship is not evident among older gay men.

The mixed empirical evidence on the link between living alone and depression suggests that the relationship is likely to be more complex than a simple direct relationship. Purcell *et al.* (2012) conducted a study with 130 adults aged 50 years and older who suffered from a mood disorder and found that living alone was not associated with suicidal ideation. Results indicated, however, an interaction between living arrangements and family connectedness. Specifically, they found that older adults living with others and having higher levels of family connectedness reported significantly lower levels of suicidal ideation than those living alone. Whether family connectedness weakens the relationship between living alone and suicidal ideation was not detailed by the authors. It is likely, however, that relationships that assist to meet belongingness needs weaken the relationship between living alone and suicidal ideation. Given the strong relationship between depression and suicide (Nock *et al.*, 2008), it is probable that this moderation effect would be evident for the living arrangements–depressive symptoms relation.

Further examining the possible relationship among living alone and depression among older gay men is important, given that as gay men age, they are more likely to live alone (Lyons *et al.*, 2012). Lyons *et al.* (2012) found that 30% of gay men aged 40–49 lived alone, 38% aged 50–59 lived alone, and 44% of gay men aged 60 and older lived alone. Other research has indicated that 65.8% of

gay men aged 50–82 years lived alone (Shippy *et al.*, 2004). In addition, older gay men (40.66%) are more likely to live alone than older heterosexual men (15.15%; Fredriksen-Goldsen *et al.*, 2013). Several factors contribute to the high proportion of older gay men living alone. In countries such as Australia, gay men cannot marry, and although they can be “partnered,” older gay men are less likely to have a partner than older heterosexual men (Stonewall, 2011; Fredriksen-Goldsen *et al.*, 2013). In addition, older gay men are less likely to have children (28% compared with 88% of older heterosexual men) and to see their biological family on a regular basis (Stonewall, 2011). Consequently, older gay men are less likely than older heterosexual men to have a spouse/partner, children, or other family members to live with as they age.

The high proportion of older gay men living alone highlights the importance of further investigating the link between living alone and depressive symptoms among this sample, and in particular, whether thwarted belongingness associated with living alone can be compensated by belonging in other contexts. Research has demonstrated that belonging to the gay community can be a protective factor for gay men (McLaren *et al.*, 2008; McLaren *et al.*, 2013). Research indicates that one way gay and bisexual men experience gay community is through their relationships with their gay friends, both individually and as a network of friends (Woolwine, 2000; LeBeau and Jellison, 2009). Indeed, 63.5% of LeBeau and Jellison’s sample reported that social life was a key advantage of being involved in the gay community. The men reported that romantic relationships and friendships were key reasons to be connected with the gay community. Gay friends provide a space for trust, shared interests, acceptance, mutual understanding, and emotional closeness (de Vries and Megathlin, 2009) and can perform many family functions (Woolwine, 2000; de Vries and Megathlin, 2009). Woolwine proposed that the friendships established between gay men are likely to be protective. Recent research confirmed this, indicating that belonging with gay friends was directly related to lower levels of depressive symptoms among a sample of gay men aged from 18 to 79 years (Morris *et al.*, 2015). Whether belonging with gay friends can negate the thwarted belongingness associated with living alone among older gay men is unknown.

The proposal that belonging with gay friends can weaken the relationship between living alone and depressive symptoms is consistent with the risk-protective model of resiliency (Hollister-Wagner *et al.*, 2001). The model proposes that the *strength* of the relationship between a risk factor

Table 1. Frequency of demographic characteristics in sample ($N = 164$)

VARIABLE	N	%
Living arrangement		
Live alone	78	48.75
Live with another	82	51.25
Relationship status		
Partnered	90	56.25
Unpartnered	70	43.75
Highest level of education		
Secondary school/trade certificate	74	46.25
University degree	86	53.75
Disclosure		
<25%	18	11.25
25% to 50%	18	11.25
51–75%	28	17.50
>75%	96	60.00

(living alone) and an outcome factor (depressive symptoms) depends upon the presence of protective factors (belonging with gay friends), with the protective factors weakening the relationship between risk and outcome.

In summary, living alone has been identified as a risk factor for depression in some samples of older adults. It has been theorized that this relationship can be explained, at least in part, by belongingness needs being unmet. It is unclear, however, whether living alone is related to depression among older gay men. It is also unclear whether belongingness needs being met through other mechanisms, such as gay friends, can compensate for thwarted belongingness associated with living alone and weaken the relationship between living alone and depressive symptoms among older gay men. The aim of the current study was, therefore, to investigate whether living alone is associated with depressive symptoms among older gay men, and whether belonging with gay friends moderates the relation between living alone and depressive symptoms among older gay men.

Methods

Participants

A convenience sample of 160 Australian self-identified gay men aged from 65 to 92 years ($M = 72.74$, $SD = 7.99$) participated in the study. The participants lived in the state of Victoria, Australia. Details of the sample can be seen in Table 1. The majority of men were partnered, lived with another person, had completed a university degree, and had disclosed their sexual orientation to the majority of people they knew.

Measures

Potential participants were invited to participate in the study through an information letter that provided a brief written description of the research and the contact details for the researcher and relevant resources that could be accessed by the participant if they experienced any distress during or after completing the questionnaire, including a free 24-h telephone counseling service for gay men.

The demographic section of the questionnaire sought participants' details including their age, relationship status, living arrangements, highest education level achieved, and the degree of disclosure of their sexual orientation. The men indicated their sexual orientation by choosing from a number of options, including heterosexual, gay male, bisexual, and do not know/unsure. Only men who identified as gay were included in the study.

The 20-item Centre for Epidemiologic Studies-Depression Scale (CES-D) was used to measure depressive symptomatology (Radloff, 1977). Participants used a 4-point scale ($0 = \textit{less than one day}$; $3 = \textit{5–7 days}$) to indicate how often they had experienced depressive symptoms over the past week (e.g. I felt that everything I did was an effort). The scale has a range of 0–60, with higher scores indicating more depressive symptoms. A cut-off score of 12 has been demonstrated to have maximum sensitivity and specificity for identifying depression among older adults (Lewinsohn *et al.*, 1997). The CES-D has shown strong internal consistency for a sample of gay men (Cronbach's $\alpha = 0.92$, Morris *et al.*, 2015) and for the current sample (Cronbach's $\alpha = 0.96$).

A sense of belonging with gay friends was assessed using two visual analogue scales (see Morris *et al.*, 2015), which measured two psychological aspects of a sense of belonging (feeling needed or valued, and fit). Both visual analogue scales consisted of a 10-cm line anchored at each end with extreme positions ($0 = \textit{Not needed or valued at all}$ to $10 = \textit{Completely needed or valued}$; $0 = \textit{Do not fit in at all}$ to $10 = \textit{Completely fit in}$). Respondents placed a vertical line through both lines to indicate the extent to which they felt valued by and fitted in with their gay friends. The placement of the vertical line was measured to the nearest centimeter, and the two scores were summed. Total scores ranged between 0 and 20, with higher scores indicating a greater sense of belonging with gay friends. The measure showed high internal consistency for the current sample (Cronbach's $\alpha = 0.97$).

Procedure

Several strategies were used to recruit the sample. Older gay men were recruited at gay community

Table 2. Mean scores and standard deviations of variables, and correlations between variables ($N = 160$)

VARIABLE	1	2	3	M	SD
1. Depressive symptoms	–	–0.43***	–0.34***	12.77	14.97
2. Living arrangement ^a	–0.40***	–	0.24**	–	–
3. Belonging-gay friends	–0.24**	0.19*	–	13.82	5.54

Note. Bivariate correlations are above the diagonal, and partial correlations, controlling for age, relationship status, education level, disclosure of sexual orientation, and type of questionnaire, are below the diagonal.

^a1 = living alone, 2 = living with another.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

events and functions, where the research was promoted and paper copies of the questionnaire were distributed. The questionnaire was also available online, and a link was placed on websites and in newsletters aimed at older gay men. Advertisements were also placed in agencies (e.g. healthcare services) that were utilized by older gay men. Snowball sampling was also used.

The men completed either a paper-based ($n = 76$, 47.5%) or online questionnaire ($n = 84$, 52.5%). A total of 150 paper questionnaires were distributed, resulting in a response rate of 50.7%. Most men (91%) who accessed the online survey completed it. The order of the measures was counterbalanced to minimize order effects.

Data analysis

Initially, descriptive statistics and correlations between the key variables were conducted. The moderation model was tested using Process (Model 1; Hayes, 2013) in SPSS. The number of bootstrap samples for bias corrected bootstrap confidence intervals (CIs) was 10,000, and a bootstrapped 95% CI was used to infer significance. Significance is supported if the CI does not include zero. Given that the variables of age (Polku *et al.*, 2015), relationship status, and education level (Kamiya *et al.*, 2013) are related to depression among older adults, questionnaire type (online/paper) is related to a sense of belonging among gay men and lesbians (McLaren *et al.*, 2013), and the disclosure of sexual orientation is related to suicide among gay men and lesbians (Plöderl *et al.*, 2014); these variables were controlled for in the analyses.

Results

A total of 31.2% of the older gay men scored 12 or above on the CES-D, indicating that almost one-third of the sample reported clinically significant levels of depressive symptoms. The mean scores and standard deviations for each variable, and the

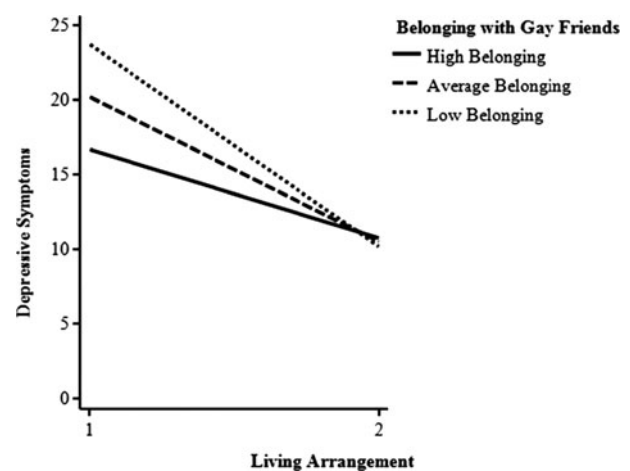


Figure 1. Interaction between living arrangement and belonging with gay friends predicting depressive symptoms. Note. Living Arrangement: 1 = living alone, 2 = living with another.

bivariate and partial correlations between variables, are shown in Table 2. Results of the correlations indicated that living alone was associated with lower levels of belonging with gay friends and higher levels of depressive symptoms. Higher levels of belonging with gay friends were associated with fewer depressive symptoms.

Results testing the moderation model can be seen in Table 3. The interaction term was significantly related to depressive symptoms, providing support for the moderation model. The interaction term explained an additional 1.3% of the variance in depressive symptoms, $F(1, 151) = 5.25$, $p = 0.023$. Figure 1 displays the interaction between living arrangement and belonging with gay friends predicting depressive symptoms. For the graph, the effects of living arrangement and belonging with gay friends on depressive symptoms were plotted at three points: high, average, and low. High, average, and low values for belonging with gay friends were +1 SD, 0 SD, and –1 SD, respectively, of the centered mean of zero. The direct effect between living arrangement and depressive symptoms was significant for low, $b = -13.55$, $p < 0.001$ (95%

Table 3. Results of regression analysis testing moderation model ($N = 164$)

VARIABLE	B	SE	95% CI
Constant	-31.53*	14.11	[-59.40, -3.66]
Age	1.10***	0.10	[0.89, 1.30]
Relationship status ^a	-3.30	1.82	[-6.90, 0.30]
Education level	0.07	1.59	[-3.08, 3.22]
Disclosure	-0.75	0.76	[-2.25, 0.76]
Questionnaire type ^b	2.67	1.57	[-0.44, 5.78]
Living arrangement ^c	-19.20***	4.75	[-28.57, -9.82]
Belonging-gay friends	-1.32**	0.45	[-2.21, -0.42]
Living arrangement × belonging	0.68*	0.30	[0.09, 1.27]
R ²	0.61		
F	29.35***		

Note. ^a1 = partnered, 2 = unpartnered; ^b1 = paper, 2 = online; ^c1 = living alone, 2 = living with another.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

CI = -18.80, -8.29), average, $b = -9.76$, $p < 0.001$ (95% CI = -13.47, -6.05), and high, $b = -5.98$, $p = 0.011$ (95% CI = -10.59, -1.37), levels of belonging with gay friends. Results indicate that the relationship between living alone and depressive symptoms weakened with increasing levels of belonging with gay friends.

Discussion

The aim of this study was to investigate the relationship between living alone, a sense of belonging with gay friends, and depressive symptoms among older gay men, and whether the living alone–depressive symptoms relationship was weakened by having a sense of belonging with gay friends. This study appears to be the first to demonstrate that living alone is associated with depressive symptoms among older gay men. Although not tested in this study, others have proposed that this relationship exists due to thwarted belongingness (Van Orden *et al.*, 2010). Results of this study are inconsistent with the only other study that has investigated this relationship among older gay men (Lyons, 2015). Lyons (2015) did not demonstrate a significant relationship between living alone and depressive symptoms among a sample of gay men aged 50 years and older. The younger age of Lyons' sample may at least partly explain the different result. As gay men age, they are more likely to live alone (Lyons *et al.*, 2012). In addition, it is possible that age moderates the living alone–depressive symptoms relationship such that older age strengthens the relationship. Future research could test this proposed moderation model.

This study appears to be the first to investigate whether a sense of belonging with gay friends moderates the relationship between living alone and

depressive symptoms among older gay men. Results supported the moderation model. Increasing levels of a sense of belonging with gay friends weakened the relationship between living alone and depressive symptoms. This finding highlights the important role that belonging with gay friends can play in the mental health of older gay men who live alone. Consistent with the risk-protective model of resiliency (Hollister-Wagner *et al.*, 2001), it is evident that the presence of the protective factor (i.e. high levels of belonging with gay friends) weakens the relationship between living alone and depressive symptoms among older gay men. The results suggest that if older gay men's belongingness needs are met through other mechanisms, the relationship between living alone and depressive symptoms is weakened.

It is important to note, however, that the relationship between living alone and depressive symptoms remained significant even for older gay men with high levels of belonging with gay friends. This suggests that the thwarted belongingness associated with living alone is not entirely compensated for by high levels of belonging with gay friends.

The results of this study reinforce the importance of a sense of belonging with gay friends for the mental health of older gay men, and particularly those who live alone. Assisting older gay men to develop close emotional bonds with other gay men is likely to be beneficial for their mental health. Lyons *et al.* (2013) note that programs that assist older gay men to come together to form friendships may be particularly valuable. Within Australia, the Men's Shed movement has been seen to fulfill a significant role in bringing men together. A Men's Shed is "a community-based, non-profit...organization that is accessible to all men and whose primary activity is the provision of

a safe and friendly environment where men are able to work on meaningful projects at their own pace in their own time in the company of other men” (<http://mensshed.org/>). There is evidence that connecting older men with a Men’s Shed facilitates positive social relationships and builds resilience and a sense of belonging by providing a place for meaningful activity in the company of other men (Ormsby *et al.*, 2010). The relevance of this type of program for older gay men specifically, however, has yet to be investigated. In the state of Victoria where this research was conducted, *Vintage Men* (<http://www.primetimersww.com/vintagemen/>) and *Val’s Café* (<http://valscafe.org.au/>) provide safe spaces for older gay men to connect and socialize. Research investigating the role such organizations play in the lives of older gay men, however, has yet to be conducted.

In addition to providing older gay men opportunities to form friendships, interventions which increase the cultural competence of health professionals for working with older gay men are needed. Fredriksen-Goldsen *et al.* (2014) detail core competencies and strategies for working with older gay, lesbian, bisexual, and transgender (LGBT) adults. Analyzing one’s own personal and professional attitudes toward sexual orientation and gender; understanding how social, legal, and cultural contexts have negatively impacted on LGBT older adults; understanding how service provider systems, policies, and resources may impact on older LGBT adults; understanding the different needs of subgroups of LGBT older adults and tailoring care accordingly; and using culturally appropriate language can all assist in providing health professionals that meet the needs of older gay men. Increasing the cultural competence of health professionals should be seen as a priority in combatting depression among older gay men.

The results and implications of this study need to be considered in the light of several limitations. The current study is unable to determine causality due to its correlational design. The outcome factor was depressive symptoms, assessed through the use of a screening tool. The results do not apply, therefore, to a diagnosed depressive disorder. A sense of belonging with gay friends was assessed via visual analogue scales, as there is no existing instrument to measure this construct. Examining the psychometric properties of the measure would be valuable. This study utilized a convenience sample of older gay men recruited via a range of strategies. Due to the recruitment methods utilized, the gay men who came into contact with this research are more likely to have some degree of existing involvement with the gay community (e.g. attending a gay event, reading a gay magazine,

visiting gay websites). The current study did not assess the men’s connectedness with family members. It is likely that older gay men with lower levels of connectedness with family lived alone, and this is a variable that could have been controlled for in the analyses.

Future research needs to investigate ways to increase social relationships among older gay men, and whether programs developed to meet this need are effective. The need to understand older gay men’s friendships is important, and the results of this research indicate that it is particularly important for older gay men who live alone. Results imply that a sense of belonging with gay friends partly compensates for living alone. Interventions aimed at increasing sense of belonging with gay friends among older gay men who live alone are likely to have benefits for their mental health.

Conflict of interest

None.

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