Young people's perceptions of substance use norms and attitudes in the LGBT community

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Abstract

Objectives: Sexual minority young people (SMYP) show higher levels of substance use than their heterosexual counterparts. This study aims to test potential LGBT community-specific reasons assumed to affect substance use and their relationships to LGBT community participation/connectedness and substance use behaviour.

Methods: Eight LGBT community-specific reasons for substance use were tested in an online survey with 1,556 SMYP.

Results: Respondents agreed that the LGBT community had liberal attitudes towards substance use (80.5%, n=1,079) and that the media portrayed substance use as a part of the community culture (66.5%, n=904). Participants disagreed that excessive partying is a part of the community (34.7%, n=470). Significant but weak correlations between reasons and community participation/connectedness or personal substance use behaviour were found. Subgroup analyses indicated male and gay/lesbian participants showed differential agreement levels to some of the reasons.

Conclusion: Young people's perceptions of substance use within the LGBT community are not associated with community participation/connectedness or personal substance use.

Implications for public health: Further research is needed to better understand what factors lead to elevated levels of substance use in SMYP. This may assist in the development of adequate public health responses. Targeting problematic beliefs may have little impact on substance use in SMYP.

Key words: sexual identity, substance use, LGBT community, community connectedness, community participation

Research indicates meaningfully higher rates of licit and illicit substance use among sexual minority adolescents and young adults, as well as an earlier age of onset worldwide and in Australia.[1-3] The 2019 National Drug Strategy Household Survey reported that sexual minority Australians were significantly more likely than heterosexual people to smoke daily (22.9% vs. 13.5%).[4] Similarly, sexual minority people were also significantly more likely to exceed the lifetime (22.3% vs. 17.0%) and single occasion (37.5% vs. 24.9%) risk guidelines to reduce the harm from alcohol consumption. The survey also found significant disparities in the use of illicit substances in the previous 12 months, with 36% of sexual minority people indicating the use of illicit substances compared to 16.1% of their heterosexual peers (age-standardised). The National Drug Strategy Household Survey uses a nationally representative sample but does not provide data on gender diverse people or young people by sexual orientation.[4] These are consistent with studies from other countries as well as global studies demonstrating overall higher levels of alcohol use among sexual and gender minority (young) people compared to their heterosexual counterparts.[1,5,6] Published research on differences among sexual minority and gender subgroups is generally scarce, however, studies with such comparisons typically indicate that young people identifying as bisexual are at a greater risk of substance use than their gay or lesbian counterparts, and that disparities are larger among female groups than male groups.[1,7]

The increased risk of substance use among this population is likely to be multifaceted, originating from socioeconomic, cultural, and environmental conditions as well as social and community networks, and individual lifestyle factors.[8] Previous research focussed on experiences related to people's sexual minority identity as an explanation for disparities in substance use.[9,10] In contrast to their heterosexual peers, young people identifying with a sexual minority orientation are exposed to higher levels of discrimination, marginalisation and oppression in a culture often perceived as homonegative and heterodominant.[11] A 2014 study conducted by the Australian Human Rights Commission found that sexual and gender minority young people in Australia frequently experience verbal and physical homophobic abuse (61% and 18%, respectively) while nine per cent

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also experience other types of homophobia such as humiliation or social exclusion.[12]

However, research has recently begun to examine the role of sexual minority young people's perceptions of substance use norms and attitudes in the LGBT community as potential contributors to elevated levels of substance use.[8,13] The LGBT community can be described as a representation of different sexual and gender minority identities and plays a considerable role in shaping many sexual minority people's identity as being gay or lesbian or bisexual.[14] In this sense, the LGBT community provides a 'safe space' for sexual minority people to develop sexual minority social identity, protected against potential marginalisation and oppression from the heterodominant culture. It should be noted that the concept of a single LGBT community may be difficult to sustain, particularly across cultures with varying perceptions of sexual and gender minority populations, as the level of commonality of different populations within and across the community is difficult to establish. However, the terminology is frequently used in research and within the populations of interest for this research itself to refer to a constantly evolving concept.

The current body of research has shown that the LGBT community is particularly important in the provision of social support to sexual minority youth, assisting in the reduction of stress and health risks associated with experiences of living with a sexual minority identity. Most research in this area, however, currently focusses on sexual health among gay and bisexual men;[15-19] research on the role of the community on substance use is rare and inconclusive.

Recent research suggests that connectedness to and participation in the LGBT community might affect substance use behaviours in young sexual minority people. For example, Lelutiu-Weinberger et al.[13] found evidence that identification and connectedness with the LGBT community were protective against severe substance use in a sample of young gay and bisexual men in New York City. In contrast, other studies identified correlations between very low or very high levels of identification and participation with the community and elevated levels of substance use among gay and bisexual men, whereas those with moderate affiliations showed lower rates of substance use in general[8] as well as problematic substance use.[20] The high number of licensed venues such as bars or clubs, often functioning as one of the main physical representations of the LGBT community, particularly in Eurocentric cultures,[9,21] might be one explanation for higher levels of substance use, as substances are more readily available and used in such environments.[22] Furthermore, sexual minority communities are generally perceived to be open-minded and politically liberal, which may lower the perception of substance use as a deviant behaviour within these communities.[23,24]

However, connectedness with and participation in the LGBT community may differ among its subgroups.[25] Microaggressions and marginalisation of bisexual people and women are common in the LGBT community, potentially lowering community connectedness and participation in this subgroup.[26,27] This may contribute to different perceptions of the LGBT community among its subgroups.

A previous qualitative, semi-structured interview study[28] among 31 sexual minority young people in Australia identified eight LGBT-community-specific substance use beliefs they perceived contributed to the disparities in substance use between sexual minority young people and their heterosexual counterparts. These included higher levels of peer pressure, a high concentration of licensed venues within the LGBT community, and a higher exposure to substance use. Fourteen self-identified LGBT community stakeholders agreed that these perceptions about substance use within the LGBT community might have an influence on elevated levels of substance use within the community.

This study aimed to determine how these substance use beliefs were related to age and personal substance use, and how substance use beliefs may affect LGBT community connectedness and participation. A secondary aim was to determine if these LGBT community-specific substance use beliefs differed among sexual- and gender-identity subgroups.

Methods

Recruitment and participants

Sexual minority young people participated in a cross-sectional online survey between November 2016 and April 2017. Participants between 18 and 35 years of age identifying with a sexual minority identity and living in Australia were eligible to participate in this study. Sexual minority populations are often referred to as populations that are hard to reach for research studies, with research showing that social media and commercial LGBT venues such as bars and nightclubs are promising recruitment avenues to reach LGBT young people.[29] Hence, this study used advertisements on social media, email lists, LGBT-specific media, and print material sent to commercial LGBT-venues and community-based organisations. A draw of ten AU$100 retail vouchers was offered as an incentive for participating in the study. Informed consent was obtained from all individual participants and ethical approval was obtained from the Queensland University of Technology's University Human Research Ethics Committee.

Variables

LGBT community substance use beliefs

The LGBT community-specific substance use beliefs identified in a previous qualitative study[28] were converted into eight items measured on a 10-point Likert scale ranging from 1 (*strongly disagree*) to 10 (*strongly agree*):

1. Movies: Movies and TV shows make it look like drug use is a part of the LGBT culture.
2. Socialising: People in the LGBT community who don't drink will experience difficulties getting to know people.
3. Illicit Substances: LGBT people don't consume more illegal drugs than the general population.
4. Partying: The LGBT community is too focussed on partying and celebrating.
5. Tolerance: The LGBT community is more tolerant towards other people's lifestyles including substance use.
6. Activities: It is easy to find something to do in the community that is not related to alcohol or other drugs.
7. Alcohol use: The LGBT community has no bigger problem with alcohol use than the general population.
8. Peer pressure: The peer pressure to experiment with drugs other than alcohol and tobacco is higher within the LGBT community.

An exploratory factor analysis was conducted to explore the construct validity of the scale and to identify potential subscales. However, the eight LGBT community-specific beliefs did not form an internally consistent scale or subscales and were tested as individual variables.

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Other measurements

Substance use involvement: The World Health Organization Alcohol, Smoking and Substance Involvement Screening Test Version 3.0 (WHO ASSIST) was used to measure substance use involvement.[30] The ASSIST is reliable and valid;[30,31] it assesses use and dependency symptoms for 10 groups of substances (tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants, inhalants, sedatives/sleeping pills, hallucinogens, opioids and other drugs). Responses for all substances are aggregated to calculate a global substance use involvement score (Range: 0 to 372).[31] A higher score indicates a higher involvement in substance use and associated risk for physical, social and mental health. Risk-level thresholds (low, moderate, high) have been identified for individual substances, however, no clinical threshold is established for the global substance use involvement score.[30]

Connectedness to the LGBT community: Each of the 5 items (e.g. 'You feel a bond with the LGBT community.') is rated from 1 (*agree strongly*) to 4 (*disagree strongly*) and subsequently aggregated.[32] The wording in two items was changed from 'LGB' or 'Gay community' to 'LGBT' or 'LGBT community' for the context of this study. The adapted scale in the current study showed high levels of internal consistency (Cronbach's Alpha = 0.86) and construct validity (NFI and CFI >0.95).

Participation in the LGBT community: Two scales were combined to measure participation in the LGBT community.[33,34] Participants were asked about the intensity of their engagement in eight different activities (e.g. visiting an LGBT bar) of the LGBT community in the past year (1–2/year, less than monthly, monthly, fortnightly, weekly, daily/almost daily). However, only five of the eight items loaded onto the scale in an exploratory factor analysis conducted in this sample. In the current study, the reduced scale showed moderate level internal consistency (Cronbach's Alpha = 0.63) and high levels of construct validity (NFI and CFI >0.95).

Demographics: Demographic information on age, gender, and sexual minority identity, country of birth, ethnicity, and living area were collected (see Table 1). Participants were presented with an extensive list of sexual minority and gender identities. Most participants identified as gay or lesbian (57.4%, n=893) and bisexual (23.6%, n=367) with other responses (19.0%, n=296), including 'asexual' (n=39) or 'pansexual' (n=113), these responses have been aggregated as 'other sexual minority identity'. Most participants indicated their gender identity as male (53.7%, n=836) or female (40.2%, n=625) including those identifying as transgender male or transgender female, while 6.1% (n=95) stating a gender identity that does not fit into the male/female dichotomy, such as genderqueer (n=30). These responses were aggregated under the umbrella term 'non-binary'.

Statistical analysis

Pearson's and Kendall's tau correlation coefficients were used to identify correlations between LGBT community substance use beliefs and age, substance use involvement, LGBT community participation, and LGBT community connectedness to examine how these beliefs potentially affect participants' relationships with the LGBT community and their own substance use behaviour. Analyses of covariance (ANCOVA) were conducted to determine if sexual minority and gender identity subgroups were associated with differences in mean agreement to LGBT community substance use beliefs; age was used as a covariate to account for the broad age range within the sample, which may affect participants' level of participation in and connectedness to the LGBT community as well as their perceptions of substance use culture within this community. All ANCOVA assumptions were met after a log transformation of age for beliefs 'Tolerance' and 'Alcohol use' to ensure linearity. Analyses were completed using AMOS23 and SPSS23 (IBM, New York, US).

Results

Sample characteristics

Table 1 outlines the characteristics of the final sample; 1,757 participants consented and commenced the survey. The final sample of this analysis comprised 1,556 sexual minority young people after 76 were excluded for not meeting the inclusion criteria and a further 125 participants were excluded due to missing data on key variables for this analysis (age, gender, sexual orientation, substance use).

The mean age of participants was 22.6 years (95%CI: 22.4-22.8). The majority identified as male (n=836, 53.7%), gay or lesbian (n=893, 57.4%), and Caucasian/white (n=1,321, 84.9%). Nearly two-thirds lived in a major city (n=1,017, 65.5%) with 82.8% (n=1,289) being born in Australia. The overall sample showed medium levels of connectedness to the LGBT community (*M*=10.4; 95%CI: 10.2-10.6, Range: 1-15), but a low level of participation in it (*M*=3.3; 95%CI: 3.1-3.5, Range: 0 to 26). The WHO ASSIST Global Continuum of Risk (total substance use involvement) for the entire sample was 29.4 (95%CI: 28.0-30.8, Range: 0-221). Please refer to Supplementary Tables S1 and S2 for a breakdown of LGBT community connectedness and participation, and WHO ASSIST scores by sexual minority and gender identity subgroups.

LGBT community substance use beliefs

Mean agreement with beliefs varied from 4.6 for 'Partying' to 7.2 for 'Tolerance' (see Table 2). While all means were above 5.0 for all beliefs except 'Partying', agreement with each

Table 1: Sample characteristics.

Total Sample Size		1,556
Age		22.6 years (95%CI: 22.4–22.8)
Gender Identity	Male	53.7% (n=836)
	Female	40.2% (n=625)
	Non-Binary	6.1% (n=95)
Sexual Minority Identity	Gay/Lesbian	57.4% (n=893)
	Bisexual	23.6% (n=367)
	Other	19.0% (n=296)
Country of birth	Australia	82.8% (n=1,289)
	Other	17.8% (n=267)
Ethnicity	Caucasian/White	84.9% (n=1,321)
	Other	15.1% (n=235)
Living Area (Major City)	65.5% (n = 1,017)	
LGBT Community Connectedness Score		10.4 (95%CI: 10.2–10.6)
LGBT Community Participation Score		3.3 (95%CI: 3.1–3.5)
WHO ASSIST Score		29.4 (95%CI: 28.0–30.8)

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statement was below 50% for all except for 'Movies' (66.5%) and 'Tolerance' (80.5%).

Relationship between beliefs and substance use, community participation and connectedness

Correlations of each belief with age, substance use involvement, and participation and connectedness with the LGBT community were examined (see Table 2). Six beliefs were significantly correlated with age: four positively ('Movies', 'Socialising', 'Partying', 'Peer pressure') and two negatively ('Illicit substances', 'Activities'). Three beliefs were negatively correlated with substance use involvement: 'Illicit substances', 'Activities' and 'Alcohol use'. Six beliefs were significantly associated with LGBT community participation: four positively ('Movies', 'Socialising', 'Tolerance', 'Peer pressure') and two negatively ('Illicit substances', 'Alcohol use'). Finally, four beliefs were negatively correlated with LGBT community connectedness: 'Illicit substances', 'Tolerance', 'Activities' and 'Alcohol use'. All correlations were weak, with the strongest negative correlation being r = -0.21 between substance use involvement and 'Illicit Substances', and the strongest positive correlation being r = 0.17 between age and 'Movies'. Only the 'Illicit substances' belief was significantly (negatively) correlated with all four concepts.

Sexual minority and gender identity differences

Significant differences between both sexual minority and gender subgroups were detected for 'Partying' and 'Peer pressure' (see Table 3). Gay and lesbian participants (M=4.8, 95%CI: 4.7–5.0) were more likely to agree with 'Partying' than bisexual participants (M=4.3, 95%CI: 4.0–4.6), and those with other sexual minority identities (M=4.1, 95%CI: 3.8-4.4, p<0.001). Furthermore, males (M=5.1, 95%CI: 4.9–5.3) were more likely to agree with this belief than their female (M=4.0, 95%CI: 3.8–4.3) and non-binary counterparts (M=4.0, 95%CI: 3.4–4.5, p<0.001).

A similar pattern was detected for 'Peer pressure', with a significantly (p=0.001) higher agreement among lesbian/gay participants (M=5.6, 95%CI: 5.4–5.8) compared to their bisexual counterparts (5.0, 95%CI: 4.7–5.3) and those with other sexual minority identities (5.1, 95%CI: 4.8–5.4). Furthermore, men showed a significantly (p<0.001) higher agreement (M=5.7, 95%CI: 5.5–5.9) than women (5.0, 95%CI: 4.8-5.2) and non-binary participants (4.9, 95%CI: 4.3–5.4) than their respective counterparts. No differences between sexual identity subgroups were found for 'Illicit Substances', however, differences between gender identities were detected with males being significantly (p<0.001) less likely to agree to the statement (M=5.3, 95%CI: 5.1–5.5) than their female (M=6.0, 95%CI: 5.8–6.3) and non-binary counterparts (M=6.0, 95%CI: 5.4–6.6). No significant differences between sexual minority or gender subgroups were seen for 'Movies', 'Socialising', 'Tolerance', 'Activities', and 'Alcohol use'.

Discussion

Previous research has repeatedly highlighted elevated rates of substance use in sexual minority young people compared with their heterosexual counterparts.[1,8,13] Substance use norms and attitudes in the LGBT community itself are proposed to be a contributor to these disparities.[8,13] In the current study, agreement with eight beliefs related to perceived norms and attitudes regarding substance use in the LGBT community were examined in a large and diverse sample of sexual minority young Australians. Most respondents showed only moderate levels of agreement with these beliefs. Furthermore, correlations between beliefs and LGBT community participation and connectedness as well as age and personal substance use were overall weak.

Most respondents agreed that 'movies and TV shows make it look like drug use is part of the LGBT culture' and that 'the LGBT community is more tolerant towards other people's

Table 2: Agreement to and correlations of LGBT community substance use beliefs.

Beliefs[a]	Mean Score (SD, 95% CI)	Agree[b]	Correlations (95%CI)[c]			
			Age	Substance Use Involvement	LGBT Comm. Participation	LGBT Comm. Connectedness
'Movies'	6.4 (2.6; 6.3–6.6)	66.5% (n=904)	0.171 (0.119;0.222)***	#	0.132 (0.080;0.184)***	-0.017 (-0.072;0.038)
'Socialising'	5.3 (2.9; 5.2–5.5)	48.7% (n=659)	0.070 (0.017;0.122)**	#	0.074 (0.021;0.126)**	0.052 (-0.003;0.107)
'Illicit Substances'	5.7 (2.7; 5.4–5.7)	44.1% (n=659)	-0.063 (-0.116;-0.010)*	-0.210 (-0.261;-0.158)***	-0.085 (-0.138;-0.032)**	-0.104 (-0.159;-0.049)***
'Partying	4.6 (2.6; 4.5–4.8)	34.7% (n=470)	0.105 (0.053;0.157)***	-0.002 (-0.055;0.051)	#	#
'Tolerance'	7.2 (2.1; 7.1–7.3)	80.5% (n=1,079)	#	0.047 (-0.007;0.100)	0.117 (0.064;0.169)***	-0.068 (-0.123;-0.013)***
'Activities'	5.3 (2.5; 5.1–5.4)	41.8% (n=563)	-0.055 (-0.108;-0.002)*	-0.082 (-0.135;-0.029)**	#	-0.129 (-0.183;-0.074)***
'Alcohol use'	5.9 (2.7; 5.7–6.0)	49.7% (n=668)	#	-0.057 (-0.110;-0.003)*	-0.066 (-0.119;-0.013)*	-0.073 (-0.128;-0.018)**
'Peer pressure'	5.4 (2.5; 5.3–5.6)	48.0% (n=619)	0.081 (0.027;0.135)**	#	0.057 (0.003;0.111)*	0.034 (-0.022;0.090)

Notes:

a: see 'Methods' for exact wording of each belief

b: Beliefs were measured on a scale of 1 (strongly disagree) to 10 (strongly agree) – values between 1 to 5 were interpreted as agreeing

c: All Pearson's Correlation Coefficients (linear correlation) except Tolerance/LGBT Community Connectedness (Kendall's Tau Correlation Coefficient (Non-linear monotonic relationship)).

** $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$*

 # no linear or non-linear correlation between variables.

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lifestyles including substance use'. These results were consistent with other literature showing that drug use is a common theme in mass media featuring LGBT characters and with an overall perception of the LGBT community culture to be liberal and accepting.[23,35,36] Previous research has also demonstrated that normalising substance use in media such as movies and TV shows can influence substance use behaviour.[37] This effect might be stronger in populations with higher levels of identification with the content of movies and TV shows, as LGBT characters may be perceived as important role models by sexual minority adolescents and young adults.[38] However, the overall sample did not perceive the LGBT community to be excessively focussed on partying and celebrating, which may be in contrast to previous debates about this issue within the LGBT community.[39] Neither age nor personal substance use involvement or LGBT community participation/connectedness showed clinically meaningful correlations with any belief, suggesting that higher involvement with the LGBT community and substance use may not be substantially related to beliefs about substance use in their community. This indicates that a substance use culture perceived to be liberal may not affect young sexual minority peoples' participation in and connectedness to the LGBT community. However, further research on this issue is needed to confirm our observation within this sample.

Most differences in agreement to beliefs between sexual and gender identity subgroups were not significant. However, males were more likely to perceive that LGBT people consume more substances and there is greater peer pressure to experiment with illicit substances than did their female and non-binary counterparts. This finding is in line with epidemiological data showing that sexual minority males are more likely to use drugs than other sexual minority people, although disparities between LGBT women and their non-LGBT counterparts are larger.[1,7] Interestingly, lesbian and gay populations appear to perceive a higher peer pressure to use substances compared with bisexual and other sexual minority populations, even though data show that bisexual individuals – regardless of gender – are more likely to use illicit substances.[1,40] Male participants are also more likely to perceive the LGBT community to be overly focussed on partying. A similar result was found for monosexual (gay/lesbian) members of the community, compared with their non-monosexual (bisexual/other) peers. This difference might partly be a result of the disproportionate availability of venues for sexual minority men and their socially advantaged status in the LGBT community compared with other sexual minority subgroups including those with gender identities beyond the male–female dichotomy.[27,28]

Strengths and limitations

A significant strength of this study is its use of qualitative research findings to guide the development of the main measurement tools in the present study. The large and diverse sample is a further strength of this study, as was the use of established measures of substance use and LGBT community connectedness and participation. However, substance use beliefs were analysed individually resulting in potential measurement error from single-item scales. The study is also limited by the self-selected nature of the sample, which limits the generalisability of results. The primary focus of this study concerned sexual minority young people and no data differentiating between sex assigned at birth and gender identity have been collected. Results from this study concerning gender minorities should be interpreted with caution as many sex- and gender- diverse participants may have identified as male or female and not as non-binary.

Conclusion

Sexual minority young people in this study tend to perceive the media to portray substance use as a part of the LGBT community culture and the LGBT community to be tolerant towards lifestyles including substance use. Agreement with these attitudes was not associated with community participation and connectedness, or with personal substance use involvement. In consequence, despite the high frequency of these potentially problematic beliefs, their weak correlations with respondents' substance use suggest that targeting these beliefs in public health campaigns may have little impact on the substance use of sexual minority young people.

The few differences between sexual minority subgroups in this study suggest that male, as well as gay and lesbian participants, might perceive the substance use culture in their community somewhat differently from other participant subgroups. The results of this study support the integration of the LGBT community in public health practice, particularly as a setting for health promotion interventions and community capacity building, to reduce disparities in (harmful) substance use. Further research is needed to establish psychometrically valid scales regarding substance use culture in the LGBT community.

Table 3: Differences between sexual orientation and gender identity subgroups in agreement with LGBT community substance use beliefs, mean (95%CI).

Beliefs#	Sexual Minority Identity				Gender Identity			
	Lesbian/Gay	Bisexual	Other sex. min. ident.	Sig	Women	Man	Non-binary	Sig
'Movies'	6.5 (6.3–6.7)[a]	6.1 (5.8–6.4)[a]	6.4 (6.1–6.7)[a]	p = 0.096	6.2 (6.0–6.4)[a]	6.5 (6.3–6.7)[a]	6.4 (5.9–7.0)[a]	p = 0.089
'Socialising'	5.3 (5.1–5.5)[a]	5.1 (4.8–5.5)[a]	5.4 (5.1–5.8)[a]	p = 0.555	5.4 (CI: 5.1–5.6)[a]	5.2 (5.0–5.4)[a]	4.9 (4.3–5.6)[a]	p = 0.357
'Illicit Substances'	5.5 (5.3–5.7)[a]	5.9 (5.6–6.2)[a]	5.7 (5.4–6.0)[a]	p = 0.118	6.0 (CI: 5.8–6.3)[a]	5.3 (5.1–5.5)[b]	6.0 (5.4–6.6)[a]	p ≤ 0.001
'Partying'	4.8 (4.7–5.0)[a]	4.3 (4.0–4.6)[b]	4.1 (3.8–4.4)[b]	p ≤ 0.001	4.0 (CI: 3.8–4.3)[a]	5.1 (4.9–5.3)[b]	4.0 (3.4–4.5)[a]	p ≤ 0.001
'Tolerance'	7.3 (7.1–7.4)[a]	7.0 (6.7–7.2)[a]	7.2 (7.0–7.5)[a]	p = 0.156	7.2 (7.0–7.4)[a]	7.2 (7.0–7.3)[a]	7.1 (6.7–7.6)[a]	p = 0.845
'Activities'	5.4 (5.2–5.5)[a]	5.3 (5.0–5.6)[a]	5.3 (5.0–5.6)[a]	p = 0.874	5.2 (5.0–5.4)[a]	5.4 (5.3–5.6)[a]	5.5 (5.0–6.1)[a]	p = 0.144
'Alcohol Use'	5.9 (5.8–6.1)[a]	6.1 (5.8–6.4)[a]	5.6 (5.3–5.9)[a]	p = 0.068	5.9 (5.6–6.1)[a]	5.9 (5.7–6.1)[a]	6.1 (5.5–6.7)[a]	p = 0.723
'Peer Pressure'	5.6 (5.4–5.8)[a]	5.0 (4.7–5.3)[b]	5.1 (4.8–5.4)[b]	p = 0.001	5.0 (4.8–5.2)[a]	5.7 (5.5–5.9)[b]	4.9 (4.3–5.4)[a]	p ≤ 0.001

Notes:
Analysis of Covariance, Covariate: Age (continuous); Superscript letters: Each superscript letter denotes groups that differ significantly from other groups at a level of $p<0.05$
#: see 'Methods' for exact wording of each belief.

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Data sharing and data accessibility

The data that supports the findings of this study are available from the corresponding author upon reasonable request.

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Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary Table S1: LGBT Community Connectedness and Participation by Sexual Minority and Gender Identity, mean (95 % CI).

Supplementary Table S2: WHO ASSIST SCORE by Sexual Minority and Gender Identity, mean (95 % CI).

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