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Brief report

# The Association of Lesbian, Gay, and Bisexual Identity Facets With Smoking Dependence Motives

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## Abstract

**Introduction:** Lesbian, gay, and bisexual (LGB) adults have higher rates of smoking than heterosexual adults. LGB individuals face unique stressors, including challenges associated with having a LGB identity. The extent to which these unique stressors are related to dependence motives in LGB adult smokers, however, has not been previously explored. The current study was conducted to redress these gaps.

**Methods:** Participants ( $N = 52$ ;  $M_{\text{age}} = 42.8$ ; 55.8% Black/African American) were recruited from the local community. Identity facets were measured by the Lesbian, Gay, and Bisexual Identity Scale (LGBIS). Dependence motives were measured by the Brief Wisconsin Inventory of Smoking Dependence Motives. Linear multiple regressions were calculated with the predictors of seven LGBIS subscales for primary and secondary dependence motives, respectively.

**Results:** Primary dependence motives (core nicotine dependence features) were predicted by affirmation of LGB identity ( $\beta = 0.44$ ). Secondary dependence motives (eg, taste, cognitive/affective enhancement) were predicted by uncertainty of LGB identity ( $\beta = 0.43$ ).

**Conclusions:** LGB identity affirmation was associated with primary dependence motives, suggesting that a positive view of one's sexual orientation is a risk factor for dependence. It may be that identity affirmation is related to stronger involvement with the LGB community, which has smoking-friendly norms. Identity uncertainty was associated with secondary dependence motives; this unique identity challenge may represent a stressor contributing to smoking dependence. Findings can help explain the higher rate of smoking in LGB populations and offer avenues to better tailor smoking cessation interventions.

**Implications:** The current study is the first to examine multidimensional aspects of LGB identity in explaining smoking dependence motives among LGB adults. Results reveal that LGB identity challenges are associated with dependence motives, suggesting that interventions targeting these challenges may help reduce LGB smoking disparities. Specifically, reducing identity uncertainty may help reduce smoking dependence. Though identity affirmation was a smoking dependence correlate, it is counterproductive to reduce affirmation, given its association with other positive health outcomes. Rather, interventions to change LGB community norms around smoking appear warranted, given the documented high overlap between affirmation and community affiliation.

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## Introduction

Lesbian, gay, and bisexual (LGB) adults report higher smoking rates than their heterosexual counterparts. National data indicate that 20.6% of LGB adults smoke cigarettes versus 14.9% of heterosexual adults.<sup>1</sup> Although recent years have seen growing attention to smoking rates among LGB individuals relative to their heterosexual counterparts,<sup>2-6</sup> little attention has been paid to factors unique to sexual minorities—such as aspects of LGB identity—and the potential association of these factors with smoking-related characteristics.

LGB identity refers to one's sense of identity regarding status as a sexual minority individual. For sexual minorities, the process of developing a positive sense of identity is complex and multidimensional, comprised of several distinct components.<sup>7</sup> Some of these dimensions include internalized homonegativity (the application of negative LGB sentiment to the self), concealment of sexual orientation, and affirmation of one's sexual identity, among others.<sup>7</sup> Most LGB individuals must endure the challenge of forming a sense of identity in a largely heterosexist context and, as a result, may experience significant marginalization and stigma.<sup>8</sup> These processes engender significant levels of stress that may increase the likelihood of substance abuse,<sup>8-11</sup> including cigarette smoking.<sup>12</sup> Indeed, a preponderance of literature among the general population has demonstrated linkages between stress and likelihood of being a current smoker,<sup>13,14</sup> greater cigarette dependence among current smokers,<sup>15</sup> greater likelihood of relapse during a quit attempt,<sup>16-18</sup> and difficulties with quitting.<sup>13,16,17,19</sup> Likewise, the LGB literature suggests linkages between stress and smoking uptake,<sup>20,21</sup> as well as between one aspect of LGB identity—internalized homonegativity—and smoking behaviors such as lifetime cigarette use and current smoking.<sup>20,22,23</sup> However, associations between a multidimensional view of LGB identity and nicotine dependence among current smokers have not been investigated to date, particularly in the context of primary and secondary dependence motives. Primary dependence motives include core features of nicotine dependence (eg, craving, tolerance); secondary dependence motives include situational/instrumental motives (eg, social/environmental goals, cognitive enhancement).<sup>24</sup> Identifying these associations can guide the development of smoking cessation interventions for this population. Thus, the purpose of this study was to explore associations between dimensions of LGB identity and smoking dependence motives among LGB adult cigarette smokers.

## Methods

### Participants and Procedures

Participants were self-identified LGB adults recruited locally for in-person data collection at the University of Houston for a study focused on health behaviors of LGB adults. Study procedures were approved by the University of Houston Institutional Review Board.

Eligibility criteria included: (1) adult aged 18 years or older; and (2) self-identification as LGB or related term, including queer or other related sexual orientation labels (transgender individuals were included if they identified as LGB; because the study focused on sexual minorities, heterosexual transgender participants were excluded). Both smokers and nonsmokers were recruited and smoking status was not an eligibility criterion. Recruitment was achieved via internet posting, social media (eg, Facebook), strategic flyer posting, and through targeted paid print media. Study enrollment spanned December 2014 to February 2016. Participants provided informed consent, completed the survey on a laptop, and were assessed for expired carbon monoxide. After completion, participants were

compensated \$30 in department store gift cards for the completion of the study procedures. For more information on recruitment and procedures, please see Reitzel et al.<sup>25</sup>

## Measures

### Sociodemographics

Self-reported sociodemographic data included age, gender identity, race/ethnicity, sexual orientation, and income.

### Smoking Dependence Motives

Cigarette dependence motives were assessed using the Brief Wisconsin Inventory of Smoking Dependence Motives-37 (WISDM),<sup>24</sup> containing 11 subscales, which are used to calculate Primary Dependence Motives (PDM) and Secondary Dependence Motives (SDM). WISDM PDM (alpha = 0.87) is comprised of four subscales (Automaticity, Loss of Control, Craving, Tolerance) and includes core features of tobacco dependence.<sup>26-28</sup> WISDM SDM (alpha = 0.86) is comprised of seven subscales (Affiliative Attachment, Cognitive Enhancement, Cue Exposure/Associative Processes, Social/Environmental Goals, Taste, Weight Control, Affective), which represent situational and instrumental smoking motives.<sup>26-28</sup>

### LGB Identity

LGB identity was measured by the Lesbian, Gay, and Bisexual Identity Scale (LGBIS),<sup>7</sup> containing eight subscales: Acceptance Concerns (concern about sexual-orientation-based stigmatization; alpha = 0.68), Concealment Motivation (motivation to conceal one's sexual orientation; alpha = 0.82), Identity Uncertainty (uncertainty about one's sexual orientation; alpha = 0.87), Internalized Homonegativity (internalized negative beliefs about being LGB; alpha = 0.73), Difficult Process (perceptions that coming to accept one's sexual orientation was difficult; alpha = 0.30), Identity Superiority (negative evaluations of heterosexuals; alpha = 0.71), Identity Affirmation (feelings of pride in one's sexual orientation; alpha = 0.89), and Identity Centrality (viewing one's sexual orientation as central to overall identity; alpha = 0.59). Due to its unacceptably low reliability, Difficult Process was not included in the analyses.

### Data Analyses

Two multiple linear regressions were computed with all LGBIS subscales described above entered in a single block with the criterion variables of PDM and SDM, respectively. Covariates (entered together in the first block) included race/ethnicity (because the largest portion of the sample was Black/African American, this variable was dummy coded as Black/African American = 1, other = 0), gender identity (dummy coded as transgender = 1, cisgender = 0), and sexual orientation (dummy coded as bisexual = 1, monosexual, such as lesbian or gay = 0). Due to the large number of predictor variables, multicollinearity was assessed via conditioning indices over 30 combined with variance proportions over 0.50 on two or more variables.<sup>29</sup>

## Results

### Participant Characteristics

This study was limited to participants who were current smokers, defined as self-reporting  $\geq 100$  cigarettes smoked over the lifetime and current smoking every day or some days. A total of 52

participants met the current smoker criteria (92% daily, 8% non-daily), representing 42% of the sample.

Participants smoked on average 16 cigarettes per day. The average expired carbon monoxide (CO) was 16.19 parts per million ( $SD = 12.97$ ). The average age was 42.8 years ( $SD = 12.80$ , range = 18–67). The majority was male (69.2%,  $n = 36$ ); 21.2% ( $n = 11$ ) were female and 9.6% ( $n = 5$ ) endorsed a trans/gender nonconforming identity (eg, genderqueer, female-to-male [FTM]). Any participant who identified as Latino/a was classified as Latino/a regardless of other racial identities. About half the sample identified as Black/African American (55.8%,  $n = 29$ ), with 28.9% ( $n = 15$ ) identifying as White/European American, 11.5% ( $n = 6$ ) identifying as Latino/a, and 1.9% each identifying as “other” ( $n = 1$ ) or not responding ( $n = 1$ ). Participants endorsed a variety of minority sexual orientation identities. When asked whether or not participants identified as bisexual or some other term to denote their attraction to more than one gender, 57.7% ( $n = 30$ ) responded affirmatively. The majority of the sample (55.8%,  $n = 29$ ) made \$20 000 or less per year.

### Smoking Dependence Motives

There was no evidence of multicollinearity in either analytic model. The first block of each regression, containing the race/ethnicity, sexual orientation, and gender covariates, was not significant (PDM:  $R^2 = 0.071$ ,  $p = .369$ ; SDM:  $R^2 = 0.042$ ,  $p = .620$ ). The second block, containing the LGB identity variables, was significant for both models (PDM:  $R^2 = 0.505$ ,  $p = .002$ ,  $\Delta R^2 = 0.434$ ,  $\Delta p = .001$ ; SDM:  $R^2 = 0.552$ ,  $p = .001$ ,  $\Delta R^2 = 0.510$ ,  $\Delta p < .001$ ). Results indicated that identity affirmation significantly and positively predicted WISDM PDM ( $\beta = 0.386$ ,  $p = .035$ ). In addition, identity uncertainty significantly and positively predicted WISDM SDM ( $\beta = 0.505$ ,  $p = .008$ ). See [Table 1](#).

### Discussion

The present study was the first to explore multidimensional aspects of LGB identity in relation to smoking dependence motives among CO-verified adult LGB smokers, which is a useful line of inquiry so as to effectively tailor smoking cessation interventions for this at-risk population. Results indicated that identity affirmation was a significant predictor of primary smoking dependence motives, and identity uncertainty was a significant predictor of secondary smoking dependence motives. The findings concerning identity affirmation are surprising, given that positive valuations regarding one's sexual orientation tend to be related to positive health outcomes.<sup>7</sup> However, it is possible that identity affirmation is related to greater primary smoking dependence motives because of its potential relationship to LGB community integration. Those who feel more pride in being LGB may be more likely to feel connected to the broader LGB community, which may result in their frequenting more LGB spaces. While these spaces may be protective and resilience-promoting in many ways,<sup>30</sup> they may also be characterized by tobacco-friendly norms, given that the LGB community has higher rates of smoking overall<sup>1</sup> and that LGB bar attendance has been identified as a risk factor for smoking.<sup>31</sup> In addition, LGB media frequently includes images of cigarettes<sup>32,33</sup> and the tobacco industry targets the LGB community for direct and indirect marketing.<sup>34</sup> Thus, greater interaction with the LGB community may be associated with broad smoking dependence motives that include physiological nicotine dependence. The link between affirmation of identity and LGB community involvement has been documented in the literature; the LGBIS Identity Affirmation subscale was highly correlated with a measure of LGB community attachment,<sup>7</sup> suggesting that there may

**Table 1.** Associations of LGB Identity Facets with Smoking Dependence

Predicting WISDM PDM, $R^2 = 0.505$				
Predictor variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Race/Ethnicity	-0.383	0.410	-0.131	.357
Sexual orientation	0.023	0.437	0.008	.958
Gender identity	-1.038	0.726	-0.200	.162
Internalized homonegativity	-0.053	0.261	-0.050	.840
Acceptance concerns	0.427	0.222	0.376	.063
Concealment motivation	0.194	0.143	0.180	.185
Identity uncertainty	0.344	0.198	0.320	.091
Identity superiority	-0.337	0.203	-0.277	.105
Identity affirmation	0.438	0.200	0.386	.035
Identity centrality	0.131	0.230	0.087	.572
Predicting WISDM SDM, $R^2 = 0.552$				
Predictor variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>p</i>
Race/Ethnicity	-0.390	0.318	-0.166	.228
Sexual orientation	-0.514	0.337	-0.220	.136
Gender identity	-0.511	0.555	-0.125	.363
Internalized homonegativity	0.244	0.199	0.291	.230
Acceptance concerns	0.068	0.172	0.075	.695
Concealment motivation	0.020	0.110	0.024	.853
Identity uncertainty	0.429	0.152	0.505	.008
Identity superiority	-0.213	0.156	-0.221	.181
Identity affirmation	0.273	0.153	0.304	.084
Identity centrality	0.316	0.176	0.264	.082

Regression coefficients from last block. Race/ethnicity was dummy coded as Black/African American = 1, other = 0; gender identity was dummy coded as transgender = 1, cisgender = 0; and sexual orientation was dummy coded as bisexual = 1, monosexual = 0.

be substantial overlap between Identity Affirmation and community connectedness. Community connectedness has also been correlated with behavioral engagement in the LGB community, such as LGB community organizations and bars.<sup>35</sup> Thus, the association between affirmation of one's LGB identity and increased risk for smoking dependence may be explained by greater involvement with the LGB community, which exposes smokers to more accepting smoking-related norms and more cues for smoking. Alternatively, it may be that the connection between LGB identification and smoking may lie in a “counter-culture” phenomenon whereby smoking represents a non-sexuality-specific external indication of rejection of social norms. Although the current study cannot speak to this possibility, it may be worthy of future exploration.

Identity uncertainty was a significant predictor of secondary dependence motives, such as enhancement of social, cognitive, and emotional functioning. Secondary dependence motives may be fueled by confusion or uncertainty about one's sexual orientation; smoking may serve as a strategy to cope with this uncertainty. Whereas identity uncertainty has not been examined in relation to smoking outcomes, there is some evidence to suggest that individuals who are questioning their sexual orientation may be at risk of worse health outcomes.<sup>36</sup> It may be that individuals struggling with understanding their sexual orientation may engage in coping strategies, including smoking, to deal with the stress of this uncertainty.

Sexual minority identity challenges may serve as impediments to effective smoking cessation. Indeed, primary and secondary dependence motives are positively related to nicotine dependence and number of cigarettes smoked per day<sup>24</sup>; as well, several of the subscales

making up the WISDM PDM and SDM were shown to be predictive of relapse following a quit attempt.<sup>37</sup> Thus, interventions aimed at increasing successful cessation attempts should target these specific identity challenges, including encouraging exploration and solidification of sexual minority identity. Given the protective role of identity affirmation in mental health,<sup>7</sup> it would be counterproductive to decrease positive self-evaluation in order to impact dependence motives. Rather, efforts to change LGB community norms around smoking—such that LGB spaces continue to be protective while decreasing risk for negative health behaviors—would likely be helpful in reducing LGB health disparities.

The results of this study should be viewed within the context of study limitations. First, the study included use of a convenience sample; as such, results may not be generalizable. A strength of the study is the racially/ethnically diverse sample, as much research on LGB participants is based on overwhelmingly white samples.<sup>38</sup> Second, despite the racial/ethnic diversity, the sample was small and was largely male. Given that this study is the first to explore multidimensional facets of LGB identity in the context of smoking outcomes, these results should be considered exploratory. Finally, we included daily and non-daily smokers; smoking motives may differ between these two<sup>39</sup> but given the small sample size and small proportion of non-daily smokers, it was not feasible to examine group differences. Future research should explore smoking dependence motives among a larger sample of LGB adults with more female participants, which would allow for examination of specific WISDM subscales, as well as examination of differences between daily and non-daily smokers, providing a more nuanced view of smoking motives. Given the clear LGB smoking health disparity,<sup>1</sup> more research is needed to identify LGB-specific factors contributing to this disparity. Illuminating risk and protective factors for LGB smoking will allow researchers and clinicians to develop culturally-tailored smoking cessation interventions to address this important public health problem.

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## Declaration of Interests

None declared.

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