Association of Lesbian, Gay, and Bisexual Identity Facets With Smoking Dependence Motives. 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; Mage = 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 ($\hat{I}^2$ = 0.44). Secondary dependence motives (eg, taste, cognitive/affective enhancement) were predicted by uncertainty of LGB identity ($\hat{I}^2$ = 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 be 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.nan