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## Longitudinal Associations among Discordant Sexual Orientation Dimensions and Hazardous Drinking in a Cohort of Sexual Minority Women

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### Abstract

We examined differences between sexual minority women's (SMW's) sexual identity and sexual behavior or sexual attraction as potential contributors to hazardous drinking across a 10-year period. Data are from a longitudinal study examining drinking and drinking-related problems in a diverse, community-based sample of self-identified SMW (Wave 1:  $n = 447$ ; Wave 2:  $n = 384$ ; Wave 3:  $n = 354$ ). Longitudinal cross-lagged models showed that SMW who report higher levels of identity-behavior or identity-attraction discordance may be at greater risk of concurrent and subsequent hazardous drinking. Results of multigroup models suggest that sexual orientation discordance is a more potent risk factor for risky drinking outcomes among SMW in older adulthood than in younger adulthood. Findings support that discordance between sexual orientation dimensions may contribute to hazardous drinking among SMW and provide evidence that cognitive-behavioral consistency is important for individuals expressing diverse and fluid sexual identities, attraction, and behavior.

### Keywords

alcohol use; hazardous drinking; longitudinal; sexual minorities; women's sexuality

### BACKGROUND

Sexual minority-identified women (e.g., bisexual, lesbian) report higher rates of hazardous drinking than heterosexual-identified women (Dermody et al. 2013; Hughes et al. 2010; King et al. 2008; Marshal et al. 2008, 2009; McCabe et al. 2009). Previous research has investigated risk factors, such as victimization and discrimination, associated with alcohol-related disparities between sexual minority and heterosexual women (Hughes et al. 2010, 2014; McCabe et al. 2010). Although important, such risk factors do not fully account for variance in hazardous drinking across sexual minority subgroups (Hughes et al. 2014;

McCabe et al. 2010). In the current work, we examine differences (i.e., discordance) between sexual minority women's (SMW's) sexual identity and two other major dimensions of sexual orientation (sexual attraction and behavior) as potential contributors to hazardous drinking. An individual's sexual orientation is informed, in part, by his or her self-identification (i.e., self-labeling of sexual identity), sexual attraction (i.e., degree of opposite- vs. same-sex sexual desire), and sexual behavior (i.e., degree of opposite- vs. same-sex sexual activity) (Laumann et al., 1994). Thus, we use the term *SMW* to refer to a diverse group of women who indicate any nonexclusive heterosexual identity, same-sex sexual behavior, or same-sex sexual attraction.

Although few researchers assess multiple dimensions of sexual orientation, those who do have found that sexual identity, sexual attraction, and sexual behavior are often not concordant within individuals (Burgard, Cochran, and Mays 2005; Smith et al. 2003), even within the same assessment (Brooks and Quina 2009; Chandra et al. 2011; Igartua et al. 2009; Narring, Huwiler, and Michaud 2003; Pathela et al. 2006; Ross et al. 2003). Women tend to endorse more differences among and changes in their sexual orientation dimensions than men (Diamond 2000; Ott et al. 2013; Peplau and Garnets 2000). Diamond (2000:242) posits that transitions, or "fluidity," among sexual identity labels may be "an inevitable consequence of the fact that most sexual minority women experience attractions for both sexes, although in widely varying degrees." Diamond (2008, 2012) argues that transitions in sexual identity may reflect attempts to accurately represent and resolve common fluctuations in sexual experiences and desires over time. Thus, discordance among sexual orientation dimensions at any given time may merely reflect greater sexual fluidity or, alternatively, difficulty integrating dynamic aspects of sexual orientation into one's sense of self.

Data from interviews with sexual minority individuals (Galupo et al. 2014) suggest that a self-ascribed sexual identity is essential for contemplating and defining sexual orientation. In this study, participants viewed their current sexual identity as "primary over current and past experience that might otherwise be interpreted as 'contradictory'" (Galupo et al. 2014:16) and indicated that they used multiple dimensions of their sexual self-concept when labeling their sexual identity. These qualitative findings support the notion that sexual minority persons value the individualistic meanings that can be ascribed to sexual identity labels.

Recent quantitative studies (Diamond 2000, 2008, 2012; Galupo et al. 2014; Katz-Wise and Hyde 2014; Ott et al. 2013; Savin-Williams, Joyner, and Rieger 2012) also support that SMW report high levels of fluidity over the life course in regard to both their sexual identity and the sex of their sexual and romantic partners. Additionally, some women maintain a heterosexual or lesbian identity, even as they engage in sexual and romantic relationships or acknowledge attractions that appear to contradict their self-ascribed identity label (Diamond 2000, 2005, 2008, 2012). Although not all SMW view such contradictions as a "threat" to their identity or an indication that they are unable to endorse prescribed values and behaviors associated with that identity (Diamond 2005), some may retain a lesbian or bisexual identity due to fear of fulfilling negative stereotypes that their identity was "just a phase" or anticipated rejection from heterosexual or sexual minority peers (Diamond 2003; Tabatabai and Linders 2011).

Despite evidence that apparent contradictions among sexual orientation dimensions are normative, little is known about the potential consequences of incongruence. Social identity theory posits that maintaining alignment between an identity standard (the normative values and behaviors associated with a specific identity) and one's self-evaluation of his or her performance of that standard is critical to mental health (Burke 1991, 2006; Stets and Burke 2000; Stone and Cooper 2001). Disjuncture between an identity standard and evaluation of associated behaviors may be associated with high levels of cognitive dissonance (Festinger 1962; Stone and Cooper 2001) and evoke strategies intended to alleviate accompanying psychological discomfort (Elliot and Devine 1994).

Given the well-established need for individuals' cognitions to align with their normative self-standards (e.g., Stone and Cooper 2001)—a major tenet of cognitive dissonance theory (Festinger 1962)—discordance among sexual orientation dimensions may contribute to greater risk of hazardous drinking. Steele, Southwick, and Critchlow (1981) showed that alcohol may be misused by some individuals to lessen psychological discomfort that results from feelings of dissonance. The authors emphasize that use of alcohol may reduce psychological discomfort by, ostensibly, providing a means of distraction without necessarily compelling dissonance-reducing cognitions or attitude change.

Few studies have examined the association between alcohol use and discordant sexual orientation dimensions, and those that do have relied on samples of predominately heterosexual-identified women. Using data from the 2000 National Alcohol Survey, Drabble, Midanik, and Trocki (2005) found that self-identified heterosexual women who reported a history of same-sex sexual behavior consumed a higher mean number of drinks per year than did heterosexual-identified women who reported only opposite-sex behavior. Similarly, Bauer, Jairam, and Baidobonso (2010) found that self-identified heterosexual women who reported recent same-sex sexual behavior were more likely to drink weekly and engage in heavy episodic drinking than heterosexual-identified women who had not reported recent same-sex behavior. Using data from the National Epidemiologic Survey of Alcohol and Related Conditions (NESARC), Gattis, Sacco, and Cunningham-Williams (2012) found that self-identified heterosexual women who reported any history of same-sex sexual behavior (i.e., discordant sexual behavior) were at heightened risk for a lifetime alcohol use disorder (AUD) compared to both self-identified heterosexual women who reported a lifetime history of sexual behavior with only men and lesbian/bisexual women who reported a lifetime history of sexual behavior with any same-sex partners. Thus, identity-behavior discordance appears to relate to elevated alcohol involvement, particularly among heterosexual-identified women.

Whereas all of the aforementioned studies examined sexual identity-behavior discordance and alcohol involvement, only Gattis and colleagues (2012) also presented associations between sexual identity-attraction discordance and alcohol involvement. Their results showed that self-identified heterosexual women who reported "mostly" or "only" same-sex attractions appeared to be at *lower* risk of a lifetime AUD diagnosis than both self-identified heterosexual women who reported being "mostly" or "only" attracted to men (i.e., attraction-concordant) and lesbian/bisexual women who reported being "equally," "mostly," or "only" attracted to women. Thus, although previous work has examined associations

between discordance among sexual orientation dimensions and alcohol use in samples of predominately heterosexual women, virtually none have examined these relations in samples of SMW.

Acknowledging a lack of available studies, it is reasonable to consider that associations between identity-behavior or identity-attraction discordance and hazardous drinking will differ based on respondents' life stage or racial-ethnic identity. Because sexual fluidity is considered more normative in young adulthood (Dube and Savin-Williams 1999; Savin-Williams and Diamond 2000), we expect discordance among sexual orientation dimensions will be less problematic for women in younger adulthood than older adulthood. Importantly, sexual minority women of color, especially black SMW, are less likely than their white counterparts to disclose being lesbian or bisexual within their racial-ethnic community (Bradford, Ryan, and Rothblum 1994; Morris and Rothblum 1999), which may be due, in part, to greater perceptions of stigma associated with homosexuality in communities of color (Chae et al. 2010; Doll and Beeker 1996; Scheer et al. 2003). Nevertheless, research findings suggest that there are few differences in the timing of various sexual identity development milestones (e.g., age of first awareness of same-sex attraction) and current sexual identity status among black, Latino, and white young adults (Rosario, Schrimshaw, and Hunter 2004). Moreover, although Parks, Hughes, and Matthews (2004) found that black and Latina SMW were significantly younger than white SMW in reaching all sexual identity milestones, the elapsed time between milestones was similar across racial-ethnic groups. Given previous findings of few racial-ethnic differences in the timing and ascription of a minority sexual identity but possible discrepancies in levels of identity integration and disclosure across public and private domains (Bradford et al. 1994; Morris and Rothblum 1999; Parks et al. 2004), we expect more reliable relations between identity-behavior and identity-attraction discordance and hazardous drinking for racial-ethnic minority SMW.

### Current Study

We used data from the Chicago Health and Life Experiences of Women (CHLEW) study, a three-wave longitudinal study of adult SMW, to investigate whether discordance among sexual orientation dimensions influences risk for hazardous drinking over a 10-year period. Given the central role of sexual identity among sexual minority persons (Galupo et al. 2014), we chose to examine discordance between SMW's sexual identity and their concurrently reported sexual behavior or attraction. We hypothesize that SMW who report higher levels of identity-behavior discordance will report higher levels of hazardous drinking at the same assessment as well as at subsequent assessments. Although individuals are more likely held accountable for identity standards related to enacted behavior (e.g., sexual behavior), as opposed to internal feelings (e.g., sexual attraction) that are less observable, we expect that higher levels of identity-attraction discordance will also arouse psychological discomfort and result in elevated hazardous drinking both concurrently and prospectively but note that that these effects may be less pronounced than those for identity-behavior discordance. Capitalizing on the diversity of this sample, we also examine whether results differ based on respondents' stage of life course and racial-ethnic identity.

## DATA AND METHODS

### Participants

As described previously, data are from the CHLEW study, a prospective study of risk and protective factors related to hazardous drinking among SMW. The first wave of data was collected in 2000–2001 ( $n = 447$ ); the second wave, collected in 2004, retained 86% of the original sample ( $n = 384$ ). At Wave 3 (10-year follow-up), 84% ( $n = 354$ ) of women in the original sample who were alive and healthy enough (respondent-determined) to be interviewed participated in follow-up interviews. Advertisements were placed in local gay and mainstream newspapers in Chicago and flyers posted on relevant Internet list-servs and locations frequented by SMW. Outreach efforts targeted hard-to-reach women who have been underrepresented in previous studies of SMW, including women of color, older women, and women with lower levels of education and income (see Table 1 for a sample description).

Women were eligible to participate in the study if they were 18 years old or older, self-identified as lesbian, spoke English, and lived in Chicago or surrounding suburbs. Although women who identified as heterosexual, bisexual, or another identity in the telephone screening were excluded, in the baseline interview 11 women self-identified as bisexual. Face-to-face interviews lasting 60 to 90 minutes were conducted by female interviewers. All baseline (Wave 1) interviews took place in respondents' homes, study offices, or another private setting. In subsequent waves, participants who had moved from the area were interviewed by phone (Wave 2,  $n = 49$ ; Wave 3,  $n = 97$ ).

Participants were 37.5 ( $SD = 11.7$ ) years old, on average, at baseline. Forty-eight % identified as non-Hispanic white, 48% identified as black/African American or Latina, and about 5% identified as multiethnic or "other" race-ethnicity. Ninety% of the baseline sample participated in at least one follow-up assessment, and 74.5% completed all assessments. To assess possible bias due to attrition, nonresponse rates were examined in relation to major drinking outcomes and demographic variables (age, race-ethnicity, education, income, employment, relationship status, and having children living at home). In logistic regression models controlling for demographic and drinking variables, having a high school education or less significantly predicted attrition at Wave 2 (odds ratio [OR] = 3.39), whereas reporting a history of childhood sexual abuse (OR = 1.46) or one or more children under age 18 living in the home (OR = 1.48) were each predictors of attrition at Wave 3.

### Measures

**Sexual Orientation**—Three major sexual orientation dimensions were assessed at each wave. Current *sexual identity* was assessed at each wave with a single item: "How do you define your sexual identity?" Response options were: 1 = only homosexual/lesbian/gay, 2 = mostly homosexual/lesbian/gay, 3 = bisexual, 4 = mostly heterosexual, 5 = only heterosexual. Similarly, *sexual attraction* and *sexual behavior* were assessed using 5-point items asking participants, "Which of the following best describes who you could be sexually attracted to?" and "In the past five years, has your partner(s) in your sexual relationship(s) been ..." (1 = only women, 2 = mostly women, 3 = equally men and women, 4 = mostly

men, 5 = only men). Thus, participants' sexual identity, behavior, and attraction were measured at each wave on a 1 to 5 response scale. At Wave 1, participants were asked about the sex of sexual partners since age 18, whereas at subsequent waves, they were asked about the sex of partners "in the past five years." Within each wave, sexual orientation discordance was operationalized with a difference score, specified as a latent variable, that explicitly represented the mathematical difference between observable responses on items assessing sexual identity and behavior as well as sexual identity and attraction, respectively (see Analytic Procedure in the following) (Selig and Preacher 2009).

**Hazardous Drinking**—Consistent with previous work using these data (Johnson et al., 2013), at each wave, a latent variable was specified with four dichotomous indicators of hazardous drinking in the previous 12 months: (1) heavy episodic drinking, (2) intoxication, (3) alcohol-related negative consequences, and (4) symptoms of alcohol dependence. Specifically, heavy episodic drinking was assessed at each wave by asking, "During the last 12 months, how often did you have six or more drinks of wine, beer, or liquor in a single day?" (0 = never, 1 = at least once). Frequency of intoxication was assessed by asking: "About how often in the last 12 months did you drink enough to feel drunk—that is, where drinking noticeably affected your thinking, talking, and behavior?" (0 = never, 1 = at least once). Responses to questions about experiences of eight negative consequences associated with drinking (e.g., driving while drunk or high from alcohol) in the previous 12 months were summed. Participants who endorsed one or more negative consequences in the previous 12 months were coded as '1' those who did not endorse any were coded as '0'. Experiences of five symptoms of potential alcohol dependence (e.g., memory lapses, morning drinking) in the previous 12 months were also assessed. Participants who endorsed one or more symptoms of potential alcohol dependence were coded as '1' those who did not endorse any were coded as '0'. These four dichotomous indicator variables were used to create a latent variable representing hazardous or risky drinking.

**Analytic Procedure**—We used cross-lagged latent factor models (e.g., Burkholder and Harlow 2003) to examine concurrent and prospective associations between hazardous drinking and discordance of sexual orientation dimensions across the three waves. Models were estimated in Mplus 5.1 (Muthén and Muthén 2012) using full-information maximum likelihood estimation with robust standard errors to allow for analysis of data containing missing values. Cross-lagged models allow for simultaneous examination of within-wave (i.e., concurrent) associations between constructs, as well as prospective relations over subsequent assessments, using random effects conceptualized as latent variables. In all models, analyses excluded women who reported alcohol abstinence ( $n = 6$ ) throughout the study. Additionally, women with missing data on either of the two sexual orientation indicators across all waves (e.g., women who reported that they were not sexually active) were excluded from respective models ( $n = 36$  for identity-behavior models;  $n = 10$  for identity-attraction models).

Difference scores, modeled as continuous latent variables ( $\alpha = 0$ ,  $\psi = 1$ ), represent mathematical differences between two observed (i.e., indicator) scores at each assessment by way of model specifications (Selig and Preacher 2009). Discordance is represented as a

latent construct at each wave, capturing the mathematical difference between sexual behavior (or attraction) scores subtracted from sexual identity scores, adjusted for measurement error. We used a modified specification of latent difference score models (McArdle 2009) to capture differences in sexual identity and sexual attraction or behavior dimensions, respectively, at each wave. For each respective time point (e.g., Wave 1 identity-behavior discordance; Wave 1 identity-attraction discordance), a latent factor was specified as the difference between two observed, single-item dimension scores. The factor loading ( $\lambda$ ) of the latent factor regressed onto the sexual identity indicator was fixed at 1 for every wave. The coefficient of the sexual behavior (or sexual attraction) manifest variable, in respective models, was regressed onto the sexual identity indicator and also fixed at 1 for every wave (McArdle 2009). Only the coefficient associated with either the sexual behavior or attraction manifest variable regressed onto the corresponding latent difference factor was freely estimated. We constrained this estimated factor loading to be equal across all measurement occasions (i.e., difference factors across time are tau equivalent). Finally, the variance of the sexual identity variable ( $\zeta$ ) was set to zero across all waves. This permits a fairly straightforward interpretation of estimated latent difference scores at each wave such that scores above zero reflect behavior (or attraction) that is more opposite sex-oriented relative to participants' sexual identity at that same assessment, whereas scores below zero reflect behavior (or attraction) that is more same sex-oriented relative to participants' sexual identity at that same assessment. Thus, a latent difference score of zero is interpreted to mean that participants' self-reported behavior is concordant with their identity on that assessment occasion. A superordinate, hierarchical latent factor was then specified to reflect "true score" intra-individual differences in the corresponding latent difference factors over time. This superordinate latent factor reflects levels of discordance indicated by SMW across all three waves of data collection, whereas the subordinate, within-wave latent difference factors reflect levels of relative discordance among two sexual orientation dimensions within a specific wave of data collection.

Corresponding subordinate hazardous drinking latent factors (i.e., weighted sum of hazardous drinking indicators) reflect levels of hazardous drinking within specific waves of data collection. The factor loading of the first indicator variable at each wave was set at 1 for model identification purposes. As before, we constrained factor loadings ( $\lambda$ ) for each respective hazardous drinking indicator to be equivalent across measurement occasions. Thresholds were also constrained to be equal across time for each dichotomous indicator variable. A superordinate, hierarchical latent factor was then specified to represent "true score" levels of hazardous drinking. This superordinate latent factor reflects the level of hazardous drinking indicated by SMW across a 10-year period, whereas the subordinate latent factors reflect levels of hazardous drinking within specific waves. Because the latent factor model incorporated dichotomous criterion variables, no standard model fit indices are provided.

**Multigroup Model Subgroups**—We created a dichotomous variable, using age at baseline, to delineate SMW in younger adulthood (< 40 years old) and older adulthood (≥ 40 years old). We coded participants' race as white (0) or black/African American, Latina/

Hispanic, Native American, Asian/Pacific Islander, or other race-ethnicity (1) to examine whether effects differed across racial-ethnic majority and minority groups.

## RESULTS

Estimated hazardous drinking and identity-behavior discordance factor-mean scores and standard deviations are reported in Table 2. Corresponding factor-mean scores and standard deviations estimates for identity-attraction discordance models are presented in Table 3. Tables 2 and 3 also provide total model sample sizes, observed frequencies of sexual orientation dimensions at each wave, and specific information about how these observed values relate to estimated superordinate latent factor scores for hazardous drinking and sexual orientation discordance, as well as subordinate latent factor scores, for specific waves. In general, these tables are consistent with the larger literature (e.g., Marshal et al. 2008), suggesting that self-ascribing a bisexual identity (i.e., mostly heterosexual, bisexual, mostly homosexual) confers risk for elevations in hazardous drinking (i.e., factors scores elevated above zero and higher relative to other sexual identities). For example, women whose sexual identity was bisexual at Wave 1 ( $n = 11$ ) are estimated to report elevations in Wave 1 levels of hazardous drinking ( $M = .74$ ,  $SD = 1.98$ ). Tables 2 and 3 also show relative elevations in factor scores that reflect sexual orientation discordance on assessment occasions in which SMW report engaging in more opposite sex-oriented sexual behaviors, relative to same-sex behaviors, or being attracted to more opposite-sex rather than same-sex persons. For example, women who reported that their sexual partners were “equally men and women” at Wave 1 ( $n = 21$ ) also showed elevated levels of identity-behavior discordance ( $M = 1.37$ ,  $SD = .68$ ) at Wave 1 compared to SMW who reported that their sexual partners were “mostly” or “only” women.

### Overall Sample Cross-lagged Models<sup>1</sup>

In unconditional models, which included no covariates, patterns of estimated latent factor means suggested that hazardous drinking tended to decrease over time (Wave 1  $\alpha = .03$ ; Wave 2  $\alpha = -.05$ ; Wave 3  $\alpha = -.09$ ). As specified in the model, the estimated superordinate latent factor mean for hazardous drinking was close to zero for the overall sample ( $\alpha = -.03$ ). Estimated variances of subordinate hazardous drinking latent factors suggested that the greatest variation in hazardous drinking occurred at Wave 2 (Wave 1  $\psi = 7.78$ ; Wave 2  $\psi = 9.91$ ; Wave 3  $\psi = 3.92$ ).

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<sup>1</sup>We ran supplemental models to examine the associations between attraction-behavior discordance and hazardous drinking in the overall sample. Similar to the primary conditional models for identity-behavior and identity-attraction discordance, there was no overall relation between “trait levels” of attraction-behavior discordance and hazardous drinking, suggesting that sexual minority women (SMW) who generally report higher levels of hazardous drinking are no more or less likely to report attraction-behavior discordance compared to SMW who generally report lower levels of hazardous drinking. We then examined contemporaneous associations and replicated the within-time association between levels of attraction-behavior discordance and hazardous drinking at Wave 3 seen in the primary models, such that SMW who reported more opposite-sex sexual behavior, relative to their sexual attraction at that same wave, also reported higher contemporaneous levels of hazardous drinking. We then examined prospective cross-lagged effects; consistent with primary models, findings indicated that SMW who reported more opposite sex-oriented sexual behavior, relative to their sexual attraction at the time, endorsed higher levels of hazardous drinking at the next subsequent wave. Finally, we also examined alternative prospective cross-lagged effects and found that SMW women who reported higher levels of hazardous drinking at baseline prospectively reported more *same*-sex behavior, relative to their sexual attraction, at Wave 2.



**Identity-behavior Discordance**—We used conditional models (Figure 1) to examine associations between trait levels of hazardous drinking and identity-behavior discordance. The correlation between the superordinate latent factors showed no overall relation ( $b = .15$ ,  $p = .55$ ), suggesting that SMW who generally report higher levels of hazardous drinking over time are no more or less likely to report identity-behavior discordance over time than those who generally engage in less hazardous drinking. We then examined contemporaneous associations, at each respective wave, between levels of hazardous drinking and identity-behavior discordance. At Wave 3, a significant association between levels of identity-behavior discordance and hazardous drinking ( $b = .46$ ,  $p < .001$ ) suggested that SMW who reported more opposite-sex sexual behavior, relative to their sexual identity, also reported higher levels of hazardous drinking at that same wave. Prospective, cross-lagged effects were examined to determine whether levels of identity-behavior (I-B) discordance at prior waves (W) of data collection predicted subsequent levels of hazardous drinking (HD). Results indicated that SMW who reported more opposite-sex sexual behavior, relative to their sexual identity, at a given assessment were likely to report higher levels of hazardous drinking at subsequent waves: W1 I-B Discordance  $\rightarrow$  W2 HD:  $b = .03$ ,  $p = .01$  and W2 I-B Discordance  $\rightarrow$  W3 HD:  $b = .07$ ,  $p < .001$ . Alternative prospective cross-lagged effects were then examined to determine if higher levels of hazardous drinking predicted greater identity-behavior discordance at subsequent time points. Findings showed that hazardous drinking at prior waves was unrelated to subsequent levels of identity-behavior discordance.

**Identity-attraction Discordance**—In a separate conditional model (Figure 2), consistent with results for identity-behavior discordance, we found no overall association between superordinate levels of hazardous drinking and identity-attraction discordance ( $b = -.36$ ;  $SE = .28$ ,  $p = .20$ ). We proceeded to examine contemporaneous associations between these constructs at each wave, and findings showed a significant within-time association between identity-attraction (I-A) discordance and hazardous drinking at Wave 3 ( $b = .33$ ,  $p = .03$ ), such that SMW who reported more opposite sex-oriented sexual attraction, relative to their sexual identity at that time, also reported higher concurrent levels of hazardous drinking. Prospective cross-lagged effects suggested that SMW who reported more opposite sex-oriented sexual attraction, relative to their sexual identity, reported higher levels of hazardous drinking at subsequent waves: W1 I-A Discordance  $\rightarrow$  W2 HD:  $b = .03$ ,  $p = .049$  and W2 I-A Discordance  $\rightarrow$  W3 HD:  $b = .08$ ,  $p = .001$ . Alternative, prospective cross-lagged effects suggested no association between levels of hazardous drinking and subsequent identity-attraction discordance. These cross-lagged associations are consistent with those found in identity-behavior discordance models and suggest that SMW who endorse more opposite sex-oriented sexual behavior or attraction, relative to their self-ascribed sexual identity, are at risk for higher levels of hazardous drinking.

### Developmental Period Multigroup Models

**Identity-behavior Discordance**—Latent mixture models with known classes (SMW in younger vs. older adulthood) were specified, constraining the measurement model to be equivalent across age groups (Figure 3). Structural paths were examined to determine if participants' life stage influenced previously described associations. Structural paths suggested concurrent positive associations between levels of hazardous drinking and

identity-behavior discordance at Wave 3 among SMW in both younger ( $b = .26$ ;  $SE = .11$ ,  $p = .02$ ) and older adulthood ( $b = .44$ ;  $SE = .22$ ,  $p = .05$ ). Nested model comparisons (<http://www.statmodel.com/chidiff.shtml>) indicated this effect was marginally stronger among SMW in older adulthood (TRd:  $\chi^2[1] = 2.80$ ,  $p = .06$ ). Prospective cross-lagged associations were confirmed in both age groups, supporting that regardless of participants' life stage at baseline, higher levels of identity-behavior discordance were predictive of increases in hazardous drinking at subsequent waves (Younger adults: W1 I-B Discordance  $\rightarrow$  W2 HD:  $b = .16$ ,  $p = .001$  and W2 I-B Discordance  $\rightarrow$  W3 HD:  $b = .16$ ,  $p = .003$ ; Older adults: W1 I-B Discordance  $\rightarrow$  W2 HD:  $b = .16$ ,  $p = .001$  and W2 I-B Discordance  $\rightarrow$  W3 HD:  $b = .21$ ,  $p = .002$ ). Nested model comparisons indicated these effects were statistically equivalent for SMW in younger and older adulthood. Interestingly, an alternative cross-lagged association was found among older SMW (TRd:  $\chi^2[1] = 3.04$ ,  $p = .05$ ) and suggested that older SMW who reported higher levels of hazardous drinking at baseline subsequently reported more opposite-sex sexual behavior, relative to their sexual identity, at Wave 2 ( $b = .30$ ,  $p = .004$ ). In sum, cross-lagged findings suggest that regardless of age, SWM who engage in more opposite sex-oriented behavior, relative to their sexual identity, are at elevated risk for hazardous drinking. By contrast, older SMW who engage in hazardous drinking at baseline are subsequently more likely to report more opposite sex-oriented sexual behavior, relative to their sexual identity.

**Identity-attraction Discordance**—Structural paths in the identity-attraction discordance models (Figure 4) suggested that among younger adult SMW, there was an association between superordinate levels of identity-attraction discordance and hazardous drinking ( $b = .01$ ,  $p = .03$ ). This overall association was negative and nonsignificant among older adult SMW, and the difference between these two effects was significant (TRd:  $\chi^2[1] = 37.83$ ,  $p < .001$ ). Notably, at Wave 2, older SMW who reported more opposite sex-oriented sexual attraction, relative to their sexual identity, also indicated higher concurrent levels of hazardous drinking. Nested model comparisons (TRd:  $\chi^2[1] = 11.61$ ,  $p < .001$ ) showed this within-time association was significantly different between older ( $b = .31$ ,  $p = .006$ ) and younger SMW ( $b = .02$ ,  $p = .86$ ). Multigroup models replicated the within-time association between levels of hazardous drinking and identity-attraction discordance at Wave 3 among younger SMW ( $b = .23$ ,  $p = .04$ ) but not older SMW ( $b = .11$ ,  $p = .52$ ); notably, nested model comparisons indicated these effects were statistically equivalent across age groups. Findings suggest that identity-attraction discordance in late young adulthood and throughout older adulthood may relate to higher concurrent levels of hazardous drinking. The pattern of prospective cross-lagged associations between levels of identity-attraction discordance and subsequent hazardous drinking was replicated among SMW in both age groups (Younger adults: W1 I-A Discordance  $\rightarrow$  W2 HD:  $b = .14$ ,  $p = .09$  and W2 I-A Discordance  $\rightarrow$  W3 HD:  $b = .21$ ,  $p = .02$ ; Older adults: W1 I-A Discordance  $\rightarrow$  W2 HD:  $b = .27$ ,  $p = .003$  and W2 I-A Discordance  $\rightarrow$  W3 HD:  $b = .27$ ,  $p = .006$ ). Nested model comparisons confirmed the parallel cross-lagged effects were statistically equivalent regardless of respondents' age, suggesting that higher levels of identity-attraction discordance prospectively predicted greater engagement in hazardous drinking among both younger and older SMW.

## Race-ethnicity Multigroup Models

**Identity-behavior Discordance**—Latent mixture models with known classes (white SMW vs. racial-ethnic-minority SMW) were specified constraining measurement models to be equivalent across groups (Figure 5). Structural paths were examined to determine if effects differed based on respondents' race-ethnicity. There were no overall associations between superordinate levels of identity-behavior discordance and hazardous drinking among either white ( $b = .11, p = .11$ ) or racial-ethnic minority SMW ( $b = -.02, p = .68$ ). Within-time positive associations between hazardous drinking and identity-behavior discordance at Wave 3 were found among both white ( $b = .30, p = .02$ ) and racial-ethnic minority SMW ( $b = .25, p = .02$ ). Nested model comparisons confirmed these effects were statistically equivalent. The pattern of prospective cross-lagged associations between identity-behavior discordance and subsequent hazardous drinking were similar for both subgroups (white SMW: W1 I-B Discordance  $\rightarrow$  W2 HD:  $b = .10, p = .05$  and W2 I-B Discordance  $\rightarrow$  W3 HD:  $b = .11, p = .06$ ; Racial-ethnic minority SMW: W1 I-B Discordance  $\rightarrow$  W2 HD:  $b = .09, p = .14$  and W2 I-B Discordance  $\rightarrow$  W3 HD:  $b = .18, p = .002$ ). Again, nested model comparisons indicated the magnitude of these parallel effects were statistically equivalent across subgroups. Interestingly, there were alternative cross-lagged associations shown for white SMW such that higher levels of hazardous drinking were predictive of significantly more *same* sex-oriented behavior, relative to their sexual identity, at subsequent waves: W1 HD  $\rightarrow$  W2 I-B Discordance:  $b = -.29, p = .001$  and W2 HD  $\rightarrow$  W3 I-B Discordance:  $b = -.14, p = .04$ . Parallel associations were essentially zero, however, among racial-ethnic minority SMW: W1 HD  $\rightarrow$  W2 I-B Discordance:  $b = .01, p = .94$  and W2 HD  $\rightarrow$  W3 I-B Discordance:  $b = .01, p = .86$ . Nested model comparisons confirmed that only the effect from Wave 2 to Wave 3 was statistically different between white and racial-ethnic minority SMW (TRd:  $\chi^2[1] = 4.46, p = .02$ ). Among white SMW, in particular, higher levels of hazardous drinking may subsequently increase levels of identity-behavior discordance such that they subsequently report more same sex-oriented sexual behavior relative to their sexual identity.

**Identity-attraction Discordance**—As shown in Figure 6, racial-ethnic minority SMW reported higher levels of hazardous drinking at Wave 2 when their sexual attraction was more opposite sex-oriented than their sexual identity ( $b = .19, p = .02$ ). Nevertheless, nested model comparisons indicated this effect was statistically equivalent to the association found among white SMW ( $b = .08, p = .54$ ). A cross-lagged association showed that racial-ethnic minority SMW who reported more opposite sex-oriented sexual attraction at Wave 2, relative to their sexual identity, were at increased risk of hazardous drinking at Wave 3 ( $b = .27, p = .001$ ). Despite that the parallel cross-lagged association was only marginally significant among white SMW ( $b = .16, p = .07$ ), nested model comparisons confirmed the effects were equivalent.

## DISCUSSION

Given well-documented alcohol-related health disparities based on sexual orientation, we examined whether discordance between concurrently reported sexual identity and sexual behavior or attraction might help explain such disparities within a diverse sample of SMW.

The current study contributes to a growing literature focusing on how identity-related characteristics influence patterns of hazardous drinking with in sexual minority populations (Hatzenbuehler 2009; Ott et al. 2013; Rosario et al. 2011). We posited that although discordance among sexual orientation dimensions is relatively common among SMW, it may arouse psychological discomfort and compel distraction or dissonance-reduction tactics, such as hazardous drinking. Findings generally showed no superordinate relations between SMW's likelihood of engaging in hazardous drinking and their overall levels of discordance with regard to dimensions of sexual orientation across a 10-year period. As predicted by social identity and cognitive dissonance theory, cross-lagged associations suggested a time-delimited phenomenon whereby identity-behavior or identity-attraction discordance conferred risk of subsequent elevations in hazardous drinking.

This study is among the first to examine longitudinal associations and show that normative declines in drinking over a 10-year period may be less likely for SMW whose sexual identity is incongruent with their sexual behavior or attraction. Results are consistent with findings using samples of primarily heterosexual-identified individuals (Bauer et al. 2010; Drabble et al. 2005; Gattis et al. 2012; Jeffries 2009) and imply that some level of cognitive-behavioral consistency is important for contemplating and defining sexual orientation

Findings also showed that among older SMW, more opposite sex-oriented sexual behavior, relative to their sexual identity, may be a potent predictor of hazardous drinking. There are at least two potential explanations for this age-related finding. First, sexual exploration is more common in young adulthood (e.g., Arnett and Tanner 2006; Erikson 1968), and so young lesbian/bisexual women may feel less distress than their older counterparts to endorse sexual behavior or attraction that appears to contradict their self-ascribed sexual identity. Second, some SMW may continue to identify as bisexual or lesbian even as they experience fluctuations in sexual behavior or attraction. Potential reasons for this include fear of fulfilling negative stereotypes that their lesbian or bisexual identity was "just a phase" or fear of rejection from their sexual minority peers (Diamond 2003; Tabatabai and Linders 2011). It is possible that responses to such fears are exacerbated among older SMW who are presumed to have had more life experience to inform their sexual orientation, and as such, divergence from potentially long-held and prescribed expectations may be less acceptable to the woman herself or close others.

Finally, we were afforded a unique opportunity to examine whether the primary findings were replicated across majority and minority racial-ethnic identity groups. Contemporaneous and prospective associations seen in the overall sample were largely replicated, regardless of SMW's racial-ethnic identity. The current findings are generally consistent with those from national school-based studies that show similar patterns of alcohol use across various subgroups of racial-ethnic minority sexual minority youth (Talley et al. 2014; cf. Button, O'Connell, and Gealt 2012). Previous work (McCabe et al. 2010; McLaughlin, Hatzenbuehler, and Keyes 2010; Rosario et al. 2014) has also found generally equivalent associations between sexual minority-specific stressors and recent alcohol use across racial-ethnic groups. Unfortunately, due to small subsample sizes, we were unable to explore disparities among racial-ethnic minority subgroups (cf. Hughes et al., 2006). Despite results that were largely consistent, relations between sexual orientation discordance and

hazardous drinking may be more nuanced among sexual minority people of color. For example, our findings for racial-ethnic minority SMW show a marginal, positive superordinate relation between hazardous drinking and the tendency to report more same-sex attraction relative to their sexual identity, suggesting person-specific moderating factors warrant further investigation.

### Limitations and Future Directions

Enrollment criteria required women to self-identify as lesbian, which, at various waves of assessment, resulted in smaller subsample sizes based on self-reported sexual orientation dimensions (e.g., all but 11 participants identified as “mostly” or “only” lesbian at baseline). Notably, SMW who indicated discordant sexual orientation dimensions at baseline were necessarily reporting more opposite-sex sexual behavior and/or attraction. As a consequence, variance in latent difference scores in early study waves was restricted and may have blunted expected associations. This proposition is reflected in results suggesting more reliable associations between sexual orientation discordance and hazardous drinking as the study progressed and greater variation in sexual identity, behavior, and attraction was reported.

As mentioned previously, discordance between sexual identity and sexual behavior or attraction may be indicative of active transitions related to sexual identity or sexual orientation among SMW. Although a determination of how shifts in sexual identity contribute to hazardous drinking was beyond the scope of the current work, findings are important to understanding how *relative* discrepancies between SMW’s sexual identity, sexual attraction, and sexual behavior may influence drinking. Moreover, these results cannot explain *why* sexual orientation discordance predicts higher subsequent and, at times, higher concurrent levels of hazardous drinking. Although our hypotheses, derived from social identity and cognitive dissonance theory, were generally supported, we were unable to directly test potential mechanisms. For example, the study lacked assessments of respondents’ psychological discomfort or identity integration. Identity integration is associated with acceptance and comfort with one’s sexual identity (Rosario et al. 2011) and may be a robust predictor of alcohol-related disparities among SMW. Future researchers may consider including measures that assess perceived discordance among sexual orientation dimensions as well as specific sexual minority identity-related characteristics to replicate the current findings and determine whether associations are accounted for by additional aspects of identity.

Although our longitudinal modeling approach intended to disentangle directional effects, data are correlational and findings should be interpreted with this in mind. Despite evidence consistent with our primary hypotheses, it is possible that other variables not examined may account for the findings. For example, SMW who report discordance among sexual orientation dimensions and who also engage in hazardous drinking may be more likely to have experienced victimization/maltreatment (e.g., Beitchman et al. 1992; Miller, Downs, and Testa 1993) or may be higher on sensation-seeking or related traits (e.g., Nolen-Hoeksema 2004; Trocki, Drabble, and Midanik 2009) that are known correlates of both same-sex sexuality and hazardous drinking.

Future work should continue to investigate psychosocial factors that can potentially account for associations between identity-related characteristics and hazardous drinking outcomes (see e.g., Hatzenbuehler 2009; Talley and Littlefield 2014) in sexual minority populations. Increased awareness of the ways in which women's sexual orientation uniquely relates to patterns of risky drinking may improve providers' ability to appropriately recognize and characterize alcohol-related pathology.

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## Biographies

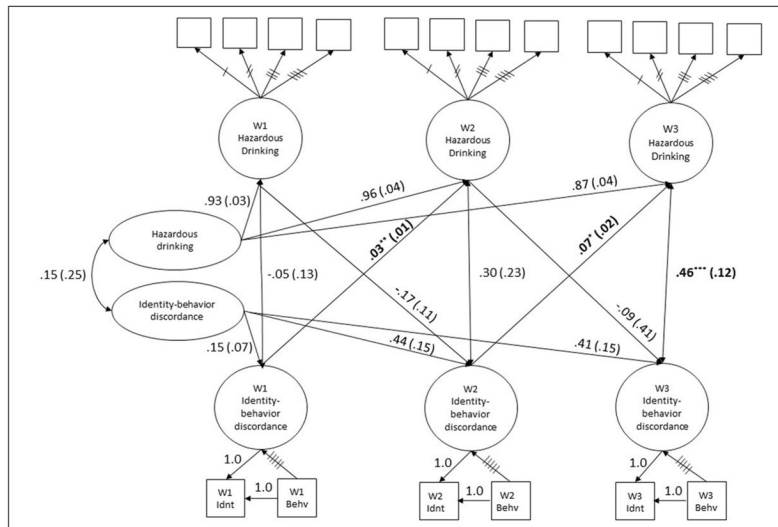
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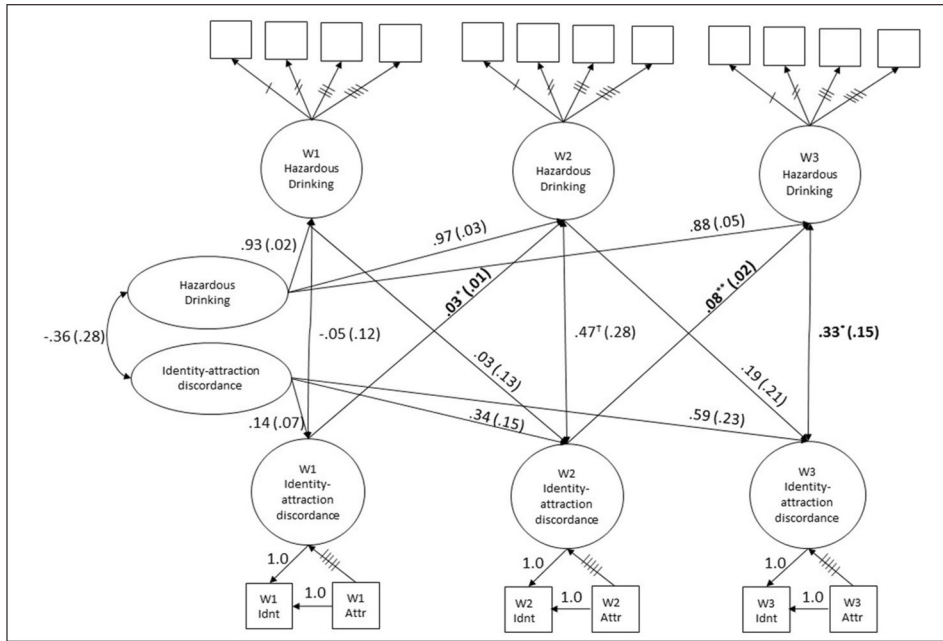
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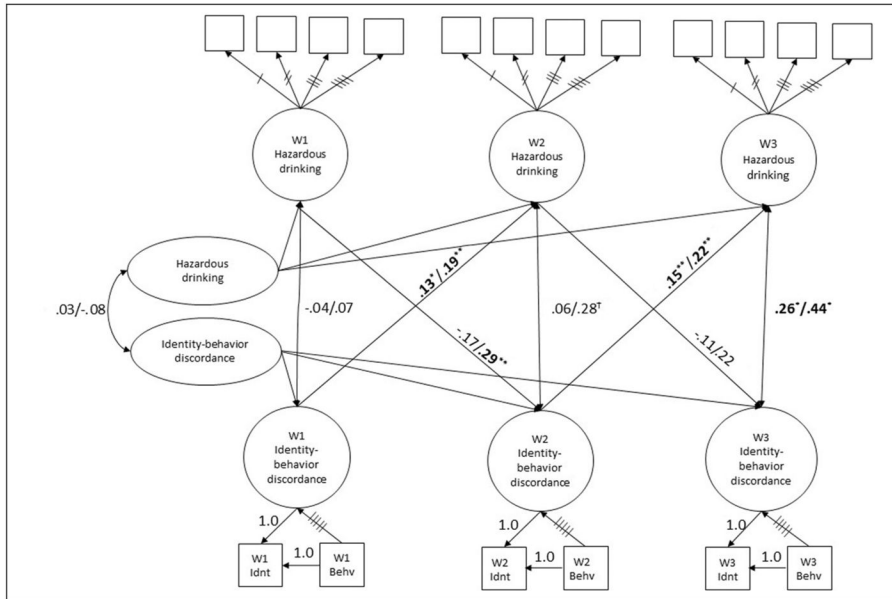
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**Figure 1.** Overall Longitudinal Cross-lagged Model Depicting Associations between Hazardous Drinking and Sexual Identity-Behavior Discordance (n = 411).  
 Note: Unstandardized estimates are shown. Standard errors are presented in parentheses. Bisecting lines depict equality constraints. W = wave; Idnt = sexual identity; Behv = sexual behavior.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



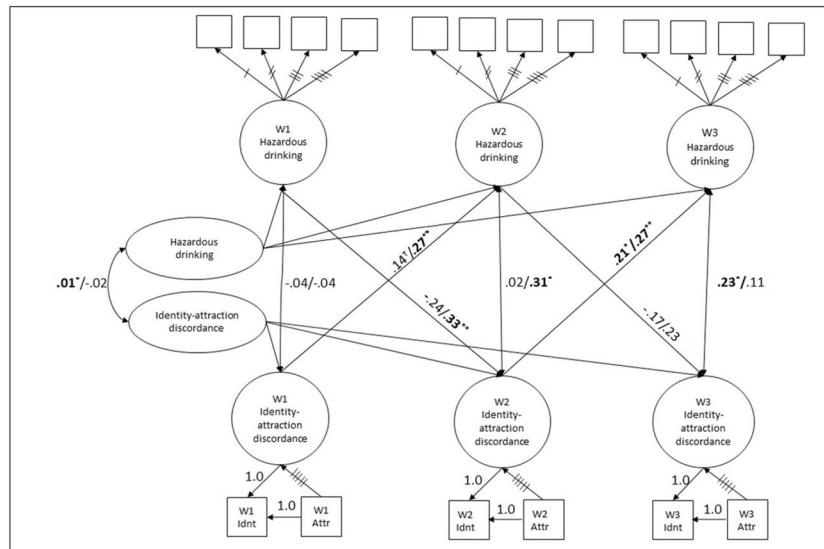
**Figure 2.** Overall Longitudinal Cross-lagged Model Depicting Associations between Hazardous Drinking and Sexual Identity-Attraction Discordance (n = 437).  
*Note:* Unstandardized estimates are shown. Standard errors are presented in parentheses. Bisecting lines depict equality constraints. W = wave; Idnt = sexual identity; Attr = sexual attraction.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



**Figure 3.** Multigroup Longitudinal Cross-lagged Model Depicting Associations between Hazardous Drinking and Sexual Identity-Behavior Discordance for Sexual Minority Women in Younger and Older Adulthood.

*Note:* Estimates preceding slash are for women in younger adulthood (< 40 years of age; n = 251). Estimates following slash are for women in older (> 40 years of age, n = 160) adulthood. Unstandardized estimates are shown. Standard errors are presented in parentheses. Bisecting lines depict equality constraints. W = wave; Idnt = sexual identity; Behv = sexual behavior.

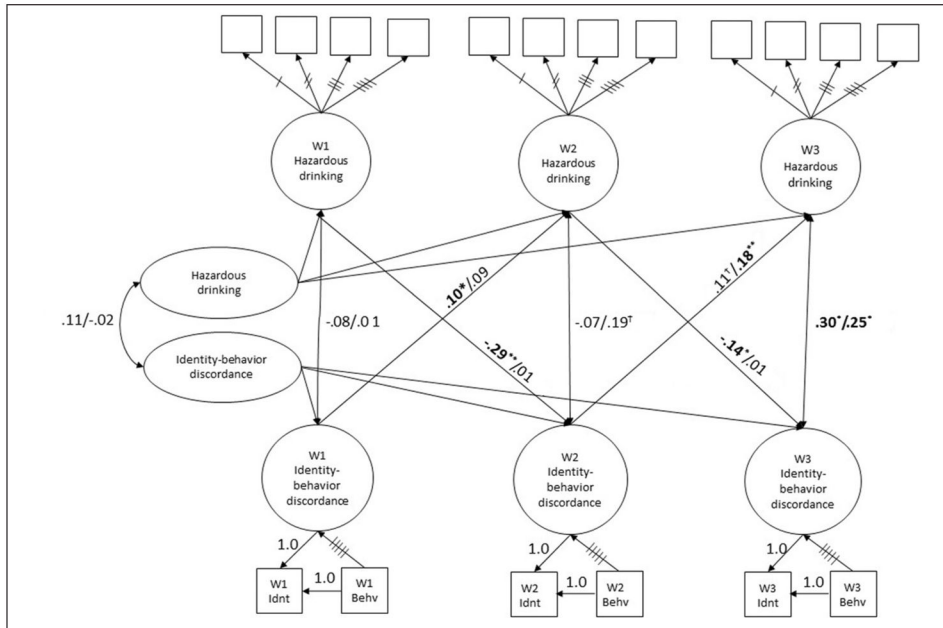
†*p* < .10, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001.



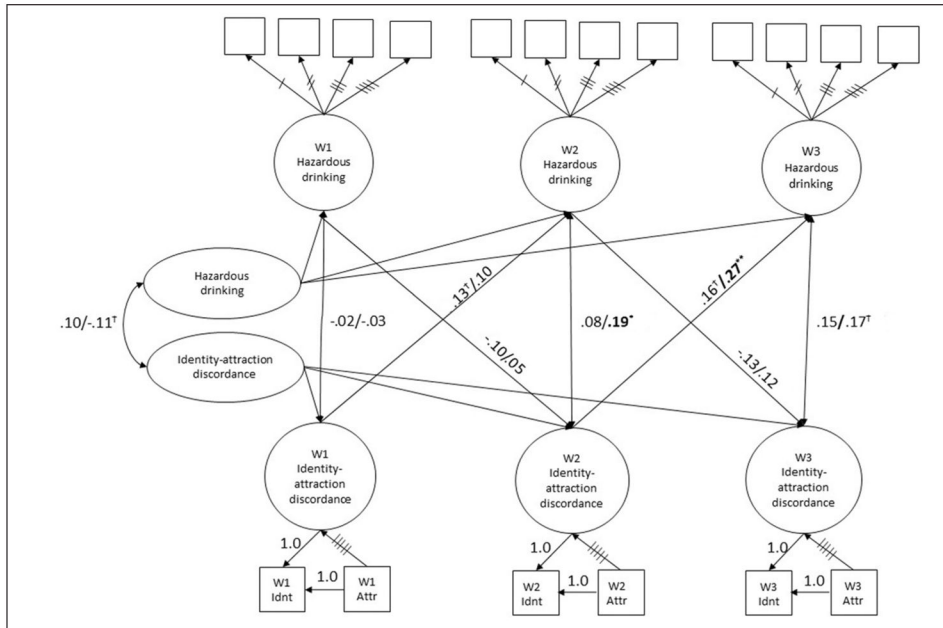
**Figure 4.** Multigroup Longitudinal Cross-lagged Model Depicting Associations between Hazardous Drinking and Sexual Identity-Attraction Discordance for Sexual Minority Women in Younger and Older Adulthood.

*Note:* Estimates preceding slash are for women in younger adulthood (< 40 years of age; n = 253). Estimates following slash are for women in older (≥ 40 years of age, n = 184) adulthood. Unstandardized estimates are shown. Standard errors are presented in parentheses. Bisecting lines depict equality constraints. W = wave; Idnt = sexual identity; Attr = sexual attraction.

† $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



**Figure 5.** Multigroup Longitudinal Cross-lagged Model Depicting Associations between Hazardous Drinking and Sexual Identity-Behavior Discordance for White and Ethnic-racial Minority Sexual Minority Women.  
*Note:* Estimates preceding slash are for white sexual minority women (n = 187). Estimates following slash are for ethnic-racial minority sexual minority women (n = 224). Unstandardized estimates are shown. Standard errors are presented in parentheses. Bisecting lines depict equality constraints. W = wave; Idnt = sexual identity; Behv = sexual behavior. †*p* < .10, \**p* < .05, \*\**p* < .01, \*\*\**p* < .001.



**Figure 6.** Multigroup Longitudinal Cross-lagged Model Depicting Associations between Hazardous Drinking and Sexual Identity-Attraction Discordance for White and Ethnic-racial Minority Sexual Minority Women.

*Note:* Estimates preceding slash are for white sexual minority women (n = 207). Estimates following slash are for ethnic-racial minority sexual minority women (n = 230). Unstandardized estimates are shown. Standard errors are presented in parentheses. Bisecting lines depict equality constraints. W = wave; Idnt = sexual identity; Attr = sexual attraction. † $p < .10$ , \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



Sample Characteristics for Total Sample and Split by Age and Race-ethnic Group, Chicago Health and Life Experiences of Women 2000–2010 (N = 447).

Table 1

	<u>Total Sample</u>		<u>40 Years</u>		<u>41 Years</u>		<u>Racial-ethnic Minority</u>		<u>White</u>	
	n	%	n	%	n	%	n	%	n	%
<i>Age</i>										
30	141	32	—	—	—	—	82	35	59	28
31–40 years	128	29	—	—	—	—	83	35	45	21
41–50 years	104	23	—	—	—	—	56	24	48	23
51 years	74	17	—	—	—	—	13	6	61	29
<i>Race</i>										
African American	123	28	84	31	39	22	—	—	—	—
Hispanic/Latina	88	20	63	23	25	14	—	—	—	—
White	213	48	104	39	109	61	—	—	—	—
Other	23	5	18	7	5	3	—	—	—	—
<i>Education</i>										
High school	62	14	40	15	22	12	47	20	15	7
Some college	135	30	96	36	39	22	91	39	44	21
Bachelor's	118	26	76	28	42	24	54	23	64	30
Graduate/professional	132	29	57	21	75	42	42	18	90	42
<i>Employment</i>										
Full-time	305	68	179	67	126	71	151	65	154	72
Part-time	51	11	30	11	21	12	25	11	26	12
Unemployed, looking	45	10	34	13	11	6	29	12	16	8
Unemployed, not looking	46	10	26	10	20	11	29	12	17	8
<i>Income</i>										
< \$20,000	111	25	84	31	27	15	70	30	41	20
\$20,000–\$39,999	113	26	71	26	42	24	68	29	45	21
\$40,000–\$74,999	121	27	69	26	52	29	60	26	61	29
\$75,000	96	22	41	15	55	31	33	14	63	30

	<u>Total Sample</u>		<u>40 Years</u>		<u>41 Years</u>		<u>Racial-ethnic Minority</u>		<u>White</u>	
	<u>N = 447</u>		<u>n = 269</u>		<u>n = 178</u>		<u>n = 234</u>		<u>n = 213</u>	
	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
<i>Relationship</i>										
Living with partner	196	46	117	43	79	44	88	38	108	52
Not living with partner	97	23	63	23	34	19	55	24	42	20
Not in committed relationship	136	32	81	30	55	31	80	34	56	27
<i>Parental status</i>										
Ever children	140	31	70	26	70	39	92	39	48	23
Children at home	90	21	61	23	29	16	60	26	30	15

Note. *Ever children* and *children at home* were measured with a binary response options. Racial-ethnic minority participants self-identified as black/African American, Latina/Hispanic, Native American, Asian/Pacific Islander, or “other” race-ethnicity.

**Table 2**

Estimated Factor Scores over Time for Hazardous Drinking and Identity-behavior Discordance Based on Observed Sexual Orientation Dimensions, Chicago Health and Life Experiences of Women 2000–2010 (n = 411).

	n	Hazardous Drinking		Identity-behavior Discordance		Wave 1 Hazardous Drinking		Wave 2 Hazardous Drinking		Wave 3 Hazardous Drinking		Wave 1 Identity-behavior Discordance		Wave 2 Identity-behavior Discordance		Wave 3 Identity-behavior Discordance		
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M
<b>Overall</b>	411	.01	1.93	.00	.07	.01	2.08	-.36	2.57	-.64	2.03	-.298	.85	-3.10	.65	-2.96	.77	
<b>Wave 1 sexual identity</b>																		
Only heterosexual	0																	
Mostly heterosexual	0																	
Bisexual	11	.52	1.77	-.12	.08	.74	1.98	.49	2.47	.18	2.03	-.52	1.21	-.17	1.10	.22	1.25	
Mostly homosexual	111	.15	1.88	-.04	.09	.18	2.01	.10	2.52	.12	2.05	-.36	1.01	-.08	.80	-.04	1.11	
Only homosexual	287	-.07	1.96	.02	.06	-.12	2.11	-.07	2.60	-.06	2.03	.14	.68	.04	.56	.01	.55	
<b>Wave 1 sexual behavior</b>																		
Only men	3	.20	2.17	-.12	.18	.15	2.28	.50	3.27	-.67	1.87	2.85	1.00	.10	1.73	.45	.52	
Mostly men	18	.53	1.66	-.02	.09	.39	1.82	.97	2.22	.41	1.87	2.07	.65	.10	.69	.43	1.09	
Equally men and women	21	.91	2.25	-.01	.09	1.01	2.43	1.22	3.02	.74	2.54	1.37	.68	-.13	.75	.32	1.42	
Mostly women	90	.43	1.72	-.02	.09	.49	1.88	.52	2.34	.38	1.85	.31	.64	.06	.94	-.06	.79	
Only women	270	-.20	1.95	.01	.06	-.24	2.09	-.29	2.57	-.18	2.04	-.35	.41	-.02	.47	-.03	.66	
<b>Wave 2 sexual identity</b>																		
Only heterosexual	2	-.98	1.91	-.32	.12	-.95	1.90	-2.11	2.56	-1.84	.39	-.16	.00	-1.4	2.12	-.47	.71	
Mostly heterosexual	7	.25	1.72	-.19	.05	.32	1.99	-.21	2.13	.15	1.91	.70	1.21	-.18	1.38	.43	.97	
Bisexual	20	.72	1.74	-.11	.08	.88	1.90	.61	2.45	.68	2.01	.54	1.17	-.15	1.21	.78	1.38	
Mostly homosexual	75	.55	1.72	-.06	.06	.62	1.86	.56	2.31	.35	1.94	.05	1.08	-.56	.66	-.21	1.00	
Only homosexual	239	-.39	1.93	.03	.04	-.47	2.03	-.44	2.61	-.32	2.02	-.06	.72	.15	.23	-.05	.47	
<b>Wave 2 sexual behavior</b>																		
Only men	5	-.03	1.75	-.12	.14	-.1	1.66	-.04	3.12	-.29	1.72	.64	.84	1.90	1.92	-.07	.74	
Mostly men	9	.62	1.61	-.08	.08	.99	1.94	.48	1.99	.52	1.71	.73	1.45	.88	.67	.86	1.03	
Equally men and women	14	.19	1.62	-.05	.11	.07	1.74	.24	2.25	.42	1.81	.56	1.54	.75	1.01	.65	1.27	

	n	Hazardous Drinking		Identity-behavior Discordance		Wave 1 Hazardous Drinking		Wave 2 Hazardous Drinking		Wave 3 Hazardous Drinking		Wave 1 Identity-behavior Discordance		Wave 2 Identity-behavior Discordance		Wave 3 Identity-behavior Discordance	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Mostly women	28	1.25	1.96	-.02	.13	1.34	2.14	<b>1.69</b>	<b>2.65</b>	1.07	2.21	.38	.96	<b>.32</b>	<b>1.03</b>	.15	.92
Only women	289	-.27	1.88	.01	.06	-.33	1.99	<b>-.35</b>	<b>2.52</b>	-.27	1.99	-.09	.76	<b>-.12</b>	<b>.49</b>	-.10	.64
<b>Wave 3 sexual identity</b>																	
Only heterosexual	6	-.04	1.56	-.18	.16	-.05	1.73	.09	2.44	<b>-1.59</b>	<b>1.20</b>	.68	.75	.34	2.68	<b>-.30</b>	<b>.52</b>
Mostly heterosexual	7	.53	1.64	-.12	.06	.42	1.5	.90	2.47	<b>-.53</b>	<b>2.03</b>	.56	1.25	.17	.93	<b>-.54</b>	<b>1.81</b>
Bisexual	37	.37	1.73	-.10	.07	.43	1.9	.40	2.32	<b>-.15</b>	<b>1.80</b>	.39	1.14	-.08	.93	<b>-.05</b>	<b>1.38</b>
Mostly homosexual	65	.28	2.08	-.05	.06	.26	2.19	.31	2.80	<b>.05</b>	<b>2.28</b>	-.17	.99	-.26	.66	<b>-.55</b>	<b>.66</b>
Only homosexual	197	-.26	1.89	.04	.03	-.31	2.00	-.33	2.53	<b>-.10</b>	<b>1.99</b>	-.08	.68	.06	.37	<b>.08</b>	<b>.21</b>
<b>Wave 3 sexual behavior</b>																	
Only men	14	.09	1.53	-.11	.12	.10	1.64	-.01	2.17	<b>-.16</b>	<b>1.99</b>	.70	1.10	.32	.83	<b>1.53</b>	<b>1.56</b>
Mostly men	11	.35	2.05	-.10	.13	.53	2.31	.29	2.78	<b>-.26</b>	<b>1.92</b>	.03	1.17	.15	2.26	<b>.67</b>	<b>.92</b>
Equally men and women	17	.89	1.61	-.04	.08	.93	1.73	1.11	2.11	<b>.77</b>	<b>2.15</b>	.61	.97	-.19	.75	<b>.74</b>	<b>1.36</b>
Mostly women	34	.75	1.93	-.02	.09	.75	2.09	.95	2.70	<b>.78</b>	<b>2.02</b>	.34	1.13	-.07	.59	<b>.21</b>	<b>.83</b>
Only women	241	-.20	1.91	.01	.06	-.25	2.02	-.25	2.55	<b>-.17</b>	<b>2.06</b>	-.12	.76	-.02	.50	<b>-.21</b>	<b>.60</b>

Note: Sexual minority women (SMW) who were missing either of the two sexual orientation indicator variables at any given wave (e.g., women who reported that they were not sexually active, Wave 1, n = 6; Wave 2, n = 20; Wave 3, n = 21) were excluded from structural equation modeling analyses (n = 36). SMW who reported a sexual identity as “other” (Wave 1, n = 2; Wave 2, n = 6; Wave 3, n = 6) or “transgender” (n = 4 at Wave 3 only) are not included in this table but retained in analyses. Bolded values highlight factor scores corresponding to sexual orientation dimensions observed at that same wave of data collection. Factor scores are centered at each respective wave. Higher (more positive) estimated identity-behavior discordance scores reflect sexual behavior that is more opposite sex-oriented than sexual identity, whereas lower (more negative) scores reflect sexual behavior that is more same sex-oriented than contemporaneous sexual identity.

**Table 3**

Estimated Factor Scores over Time for Hazardous Drinking and Identity-attraction Discordance Based on Observed Sexual Orientation Dimensions, Chicago Health and Life Experiences of Women 2000–2010 (n = 437).

	n	Hazardous Drinking		Identity-attraction Discordance		Wave 1 Hazardous Drinking		Wave 2 Hazardous Drinking		Wave 3 Hazardous Drinking		Wave 1 Identity-attraction Discordance		Wave 2 Identity-attraction Discordance		Wave 3 Identity-attraction Discordance	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
<b>Overall</b>	437	-.02	1.68	.00	.05	-.02	1.81	-.26	2.13	-.49	1.63	-.2.11	.58	-2.11	.57	-2.06	.71
<b>Wave 1 sexual identity</b>																	
Only heterosexual	0																
Mostly heterosexual	0																
Bisexual	11	.54	1.51	-.07	.05	.71	1.68	.50	1.99	.26	1.51	-.45	.60	-.02	.60	-.29	.54
Mostly homosexual	111	.17	1.61	-.02	.06	.22	1.71	.21	2.05	.22	1.62	-.20	.59	.09	.75	.06	.93
Only homosexual	287	-.13	1.70	.01	.04	-.13	1.84	-.11	2.16	-.09	1.64	.07	.53	-.04	.48	-.01	.61
<b>Wave 1 sexual attraction</b>																	
Only men	0																
Mostly men	2	1.65	.30	-.13	.03	1.61	.50	1.96	1.04	.73	.80	1.23	.71	-.20	1.41	-.70	.71
Equally men and women	38	-.04	1.55	-.02	.06	-.05	1.66	-.08	1.89	.08	1.63	.81	.71	.03	.62	.18	.86
Mostly women	172	.00	1.60	.00	.06	.01	1.70	.07	2.04	.04	1.55	.24	.55	.11	.67	.11	.83
Only women	225	-.05	1.76	.00	.04	-.02	1.92	-.05	2.24	-.04	1.70	-.34	.26	-.09	.45	-.10	.55
<b>Wave 2 sexual identity</b>																	
Only heterosexual	2	-.64	1.44	-.13	.05	-.84	1.48	-1.73	1.95	-1.28	.80	-.27	.00	-1.20	.00	-.70	.71
Mostly heterosexual	6	.30	1.55	-.11	.02	.21	1.79	-.40	2.10	-.05	1.60	.40	.82	-1.37	.98	-.36	.69
Bisexual	21	.79	1.55	-.07	.05	.84	1.66	.66	2.02	.69	1.59	.40	.86	-.30	.62	-.01	.98
Mostly homosexual	81	.42	1.49	-.02	.05	.46	1.62	.43	1.91	.34	1.50	.03	.64	-.16	.47	.06	.86
Only homosexual	257	-.38	1.67	.02	.04	-.39	1.77	-.36	2.15	-.28	1.63	-.04	.53	.06	.49	-.01	.52
<b>Wave 2 sexual attraction</b>																	
Only men	0																
Mostly men	9	.58	1.45	-.07	.09	.59	1.56	.61	2.18	.52	1.72	.07	.50	.69	1.69	-.33	.79
Equally men and women	28	.45	1.56	-.03	.08	.53	1.64	.51	1.98	.46	1.46	.48	.97	.37	.74	.07	.96

	n	Hazardous Drinking		Identity-attraction		Discordance		Wave 1 Hazardous Drinking		Wave 2 Hazardous Drinking		Wave 3 Hazardous Drinking		Wave 1 Identity-attraction		Wave 2 Identity-attraction		Wave 3 Identity-attraction	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Mostly women	133	.14	1.72	.00	.05	.15	1.81	.24	2.18	.20	1.70	.06	.60	.22	.72	.14	.77		
Only women	201	-.43	1.60	.01	.04	-.44	1.72	-.50	2.05	-.39	1.54	-.10	.48	-.23	.21	-.09	.51		
<b>Wave 3 sexual identity</b>																			
Only heterosexual	6	-.04	1.37	-.13	.04	-.04	1.54	-.12	2.02	-.96	.88	.23	.55	-.05	.76	-.86	.82		
Mostly heterosexual	7	.50	1.40	-.11	.03	.44	1.31	.58	2.11	-.16	1.60	-.27	.58	-.36	.90	-.77	1.13		
Bisexual	43	.26	1.60	-.06	.04	.29	1.72	.28	1.96	.01	1.47	.17	.83	.03	.72	-.35	.71		
Mostly homosexual	66	.22	1.80	-.03	.04	.23	1.92	.27	2.32	.13	1.83	.08	.57	-.05	.53	-.32	.51		
Only homosexual	213	-.28	1.64	.02	.03	-.27	1.74	-.28	2.10	-.15	1.62	-.03	.55	.00	.49	.09	.51		
<b>Wave 3 sexual attraction</b>																			
Only men	4	-.57	.97	-.02	.18	-.59	1.00	-.91	1.05	-.75	1.74	-.02	.50	-.22	.82	1.30	3.00		
Mostly men	14	.12	1.55	-.05	.08	.05	1.63	.11	2.08	-.26	1.39	.23	.52	-.07	1.10	.30	1.10		
Equally men and women	40	.47	1.27	-.03	.07	.58	1.39	.50	1.63	.43	1.31	.28	.93	.02	.62	.35	1.24		
Mostly women	110	.03	1.78	.01	.05	.04	1.87	.12	2.25	.05	1.74	.11	.57	.12	.59	.25	.67		
Only women	172	-.26	1.69	.01	.04	-.27	1.80	-.28	2.16	-.16	1.70	-.11	.50	-.08	.44	-.31	.44		

Note: Sexual minority women (SMW) who were missing either of the two sexual orientation indicator variables at any given wave were excluded from structural equation modeling analyses (n = 10). SMW who reported a sexual identity as "other" (Wave 1, n = 2; Wave 2, n = 7; Wave 3, n = 6) or "transgender" (n = 4 at Wave 3 only) are not included in this table but retained in analyses. Bolded values highlight factor scores corresponding to sexual orientation dimensions observed at that same wave of data collection. Factor scores are centered at each respective wave. Higher (more positive) estimated identity-attraction discordance scores reflect sexual attraction that is more opposite sex-oriented than sexual identity, whereas lower (more negative) scores reflect sexual attraction that is more same sex-oriented than contemporaneous sexual identity.