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Laurie A. Drabble
San Jose State University, laurie.drabble@sjsu.edu

Amy A. Mericle
Alcohol Research Group

Cat Munroe
Alcohol Research Group

Angie R. Wootton
University of California - Berkeley

Karen F. Trocki
Alcohol Research Group

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Laurie A. Drabble, PhD [1]
Amy A. Mericle, PhD [2]
Cat Munroe, PhD [2]
Angie R. Wootton, MSW [3]
Karen F. Trocki, PhD [2]
Tonda L. Hughes, PhD, RN, FAAN [4]

1. College of Health & Human Sciences, San José State University, San José, CA.
2. Alcohol Research Group, Public Health Institute, Emeryville, CA
3. School of Social Welfare, University of California at Berkeley, CA
4. School of Nursing and Department of Psychiatry, Columbia University, New York, NY
Corresponding Author: Laurie A. Drabble, San José State University College of Health and Human Sciences, One Washington Square, San José, CA 95192-0049, laurie.drabble@sjsu.edu

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Abstract

Background: Reductions in structural stigma, such as gaining access to legalized same-sex marriage, is associated with positive psychological and physical health outcomes among sexual minorities. However, these positive outcomes may be less robust among sexual minority women (SMW). Methods: This study examined how perceptions of the impact of legalized same-sex marriage among SMW may 1) differ by demographic characteristics and 2) predict alcohol use disorder, depression, and self-perceived health. A diverse sample of SMW (N=446) completed an online survey in 2020 assessing the perceived impact of legalized same-sex marriage across six social-ecological domains: 1) personal impact, 2) stigma-related concerns, 3) couple impact, 4) family support, 5) work/school impact, and 6) local social climate towards LGBTQ people. Results: Perceived impact across multiple domains differed by relationship status and sexual identity (e.g., lesbian compared to bisexual identity); only family support differed by race/ethnicity. Stigma-related concerns (e.g., experiencing or witnessing hostility or discrimination because of sexual identity, despite legalized same-sex marriage) were associated with greater odds of depression and lower odds of reporting excellent, very good, or good health. Odds of depression were lower among participants who reported higher personal impact, a greater number of family members supportive of same-sex marriage, and a more positive local social climate. Family support also predicted self-perceived health. However, participants who perceived increased support in work/school contexts after legalized same-sex marriage had higher odds of alcohol use disorder. Conclusions: Overall, findings underscore the importance of

policy in improving health outcomes through reducing stigma-related concerns and improving social acceptance.

Keywords: sexual minority women; same-sex marriage; marriage equality; survey, alcohol use; depression; self-perceived health

Introduction

Access to legalized same-sex marriage is associated with positive psychological and physical health outcomes among sexual minorities (e.g., lesbian, gay, bisexual, and other individuals who identify as other than exclusively heterosexual). For example, studies in the U.S. conducted before the right to marry a same-sex partner was extended to all states found that sexual minorities living in states with equal marriage rights reported less psychological distress and better self-assessed health compared to those living in states without those rights (Hatzenbuehler et al., 2010; Kail et al., 2015; Kennedy & Dalla, 2020; Raifman et al., 2017; Riggle et al., 2017). Furthermore, in states that adopted (or were voting on) policies that explicitly restricted marriage rights to one man and one woman, sexual minorities reported higher rates of psychological distress and alcohol use disorders than those living in states without such restrictions (Fingerhut et al., 2011; Flores et al., 2018; Frost & Fingerhut, 2016; Hatzenbuehler et al., 2010; Maisel & Fingerhut, 2011; Riggle et al., 2009; Rostosky et al., 2010; Tatum, 2017). Studies from Australia and Europe found similar positive impacts of legalized same-sex marriage on sexual minority health and well-being (Boertien & Vignoli, 2019; Chen & van Ours, 2021; Perales & Todd, 2018; Saxby et al., 2020). Research findings suggest no effect, or modest positive effect, of same-sex marriage rights on heterosexual's health and well-being (Hatzenbuehler et al., 2017; Hatzenbuehler et al., 2010; Langbein et al., 2020; Perales & Todd, 2018; Tatum, 2017).

Stigma is experienced across social-ecological levels: individual, interpersonal, organizational (e.g., work), community, and structural (Hatzenbuehler & Pachankis, 2016; Hatzenbuehler et al., 2013; Rostosky & Riggle, 2016). Structural stigma, defined as policies and norms at the societal, institutional and cultural level that negatively affect the opportunities,

access, and well-being of a particular group (Hatzenbuehler & Link, 2014), is an important social determinant of health disparities among stigmatized populations (Hatzenbuehler, 2014; Hatzenbuehler et al., 2010; Hatzenbuehler et al., 2013). Reducing structural stigma, such as extending equal marriage rights to same-sex couples, is essential to improving health outcomes among sexual minorities (Hatzenbuehler, 2016; Hatzenbuehler et al., 2018). For example, studies comparing indicators of health and well-being before and after the rollout of same-sex marriage rights in the U.S. identified important reductions in social stigma (Ogolsky et al., 2019a, 2019b) and improved access to tangible benefits such as private health insurance (Carpenter et al., 2018; Carpenter et al., 2021; Tumin & Kroeger, 2020).

The effects of structural stigma may be amplified or weakened by experiences of stigma at individual, interpersonal, organizational, and community levels (Hatzenbuehler & Pachankis, 2016; Hatzenbuehler et al., 2013). Specifically, perceptions of the impact of same-sex marriage legalization could be influenced by the social climate in an individual's state or region (Hatzenbuehler et al., 2017; Woodford et al., 2015; Wootton et al., 2019), or by experiences of rejection by family, co-workers, or extended social networks (Drabble, Wootton, et al., 2020; Kennedy & Dalla, 2020; LeBlanc et al., 2018; Wootton et al., 2019). For example, qualitative research with SMW found that some participants perceived increased hostile comments and interactions with individuals opposed to same-sex marriage in their families, their workplace, or local communities after legalization of same-sex marriage (Riggle et al., 2018; Wootton et al., 2019). The overall perceived positive impact was diminished for some by the need to remain, or increase, vigilance against greater exposure to "hateful thoughts and opinions" (Wootton et al, 2019, p. 222). Processes associated with these kinds of proximal stressors, such as concealment and anticipated discrimination, can have negative effects on health outcomes, such as self-

reported health and psychological distress, which may influence the impact of social policy change on sexual minority stress and well-being (Williams et al., 2017)

It is important to study how perceptions of stigma across social-ecological levels may be related to key health and behavioral health indicators. Developing a more nuanced understanding of how stigma and changes in structural stigma, such as equal marriage rights, are perceived by sexual minority individuals may provide insights for future policy, community, or individual-level interventions. Such intervention are important to efforts to address persistent health disparities by sexual identity (Institute of Medicine, 2011). Specifically, it is important to investigate factors that account for disparities in physical health and behavioral health outcomes by sexual identity. For example, compared to heterosexuals, sexual minorities report higher rates of alcohol use disorders (Drabble, Mericle, et al., 2020; Hughes et al., 2020; McCabe et al., 2009), greater psychological distress (King et al., 2008; Plöderl & Tremblay, 2015), and poorer physical health (Gonzales & Henning-Smith, 2017; Gonzales et al., 2016; Simoni et al., 2017).

Studies related to perceptions of stigma and changes in structural stigma that focus explicitly on sexual minority women (SMW) are needed for several reasons. First, some health disparities (e.g., hazardous drinking and alcohol use disorder) are particularly pronounced among SMW compared to heterosexual women (Hughes et al., 2020), and these differences appear to persist over time despite changing policy contexts (Drabble, Mericle, et al., 2020). Second, although some of SMW's perceptions of same-sex marriage legalization may be similar to those of sexual minority men (SMM), such as greater social inclusion and acceptance (Badgett, 2011; Maisel & Fingerhut, 2011), SMW likely have unique experiences and perceptions that are important to understand. For example, some research has suggested that, compared to SMM, SMW may perceive access to legalized marriage as having a more positive impact on their lives

(Bosley-Smith & Reczek, 2018; Lee, 2018) and experience more distress when their relationships are not treated equally to those of heterosexuals (LeBlanc et al., 2018). Another study found that older married SMW experienced more lesbian, gay, bisexual and transgender (LGBT) microaggressions relative to their single counterparts, but no differences were found among SMM (Goldsen et al., 2017). Finally, it is also possible that protective health policies might be less likely to confer benefits to SMW. For example, research based on a probability sample from the Behavioral Risk Factor Surveillance System (BRFSS) found that access to legal same-sex marriage significantly increased health insurance coverage, access to care, and healthcare utilization among men, but not women, in same-sex households (Carpenter et al., 2021). Another recent study examining health outcomes in relation to state policy environment (states with comprehensive policy protections for sexual minorities vs. states with limited policy protections) found that SMW were more likely than heterosexual women to report poor/fair health regardless of policy environment; similar disparities among SMM were evident only in states with limited policy protections (Gonzales & Ehrenfeld, 2018). These authors noted that they were unable to identify causal mechanisms for this surprising finding. However, they pointed out that public policy can both "reinforce or reshape marital, social, and economic situations for women" that may impact health. Consequently, they called for additional studies that examine health impacts of LGB-protective policies by sex as well as other sociodemographic characteristics. Studies specific to SMW can provide possible insights into factors that explain persistent disparities among SMW (relative to SMM and heterosexual women), psychosocial resources that amplify the positive impact of policy protections on health and well-being, and directions for interventions that may buffer the impact of stigmatizing policy environments.

It is also important to investigate how perceptions of the impact of equal marriage rights vary across subgroups of SMW (e.g., based on race/ethnicity, sexual identity, relationship status). Few studies have explicitly examined differences in the perceived impact of same-sex marriage legalization by race/ethnicity, and fewer still focus on both sex and race/ethnicity (Drabble, Wootton, et al., 2021). However, these studies point to the need for additional research. For example, one longitudinal study of SMW before and after enactment of civil union legislation in one state found reductions in perceived stigma and discrimination after the legislation, and that effects were stronger among SMW of color than White SMW (Everett et al., 2016). Another study found no differences by race in perceptions that equal marriage rights for same-sex couples had a moderate to major impact on participants' lives (Lee, 2018). However, in analyses restricted to Black sexual minorities, SMW were more likely than SMM to view same-sex marriage legalization as having a major positive impact on their lives. Perceptions of same-sex marriage legalization may also vary by sexual identity and relationship status. For example, one study of the experiences of twenty-six married or engaged couples, consisting of one lesbian and one female bisexual partner, suggested that the right to marry fostered a sense of connection to community but also left some bisexual women feeling invisible within LGBTQ communities (Lannutti, 2007). In another study, Drabble, Wootton and colleagues (2020) found that concerns about policy protections beyond equal marriage rights were greater among single SMW than married SMW.

The Current Study

The current study was part of a larger mixed-methods study that examined how recognition of same-sex marriage in the U.S. may influence hazardous drinking, drug use and other health outcomes among SMW. The current study was guided by two questions: 1) how do

perceptions of same-sex marriage legalization differ among SMW based on sexual identity, race/ethnicity, and relationship status? and 2) what are the associations between perceptions of same-sex marriage legalization and alcohol use disorder, depression, and self-perceived health?

This study addresses several important gaps in the literature. First, we focus on perceptions and health outcomes of SMW, a population that has been underrepresented in research (Coulter et al., 2014; Institute of Medicine, 2011; Voyles & Sell, 2015). Understanding how stigma and changes in structural stigma (e.g.,equal marriage rights) may be perceived by SMW is important to the development of interventions designed to reduce persistent sexual identity-related health disparities among women (Institute of Medicine, 2011; Matsick et al., 2020). Second, we explore potential differences between subgroups of SMW, which is also important for informing the development of effective interventions for problems that are notably high among SMW, such as hazardous alcohol use (Hughes et al., 2020; Kidd et al., 2021). Finally, although research has established that structural stigma is an important driver of health disparities (Hatzenbuehler, 2014, 2016), less is known about how perceptions of stigma at different social-ecological levels may influence health and behavioral health outcomes among SMW. Therefore, it is important to explore ways that these perceptions may amplify, or undermine, the positive impact of policy protections on SMW health and well-being.

Methods

Participants and Data Collection

Study participants (n = 446) were recruited from a pool of 732 SMW (61% response rate) who were part of a larger parent study focusing on hazardous drinking, drug use, and other health outcomes. Participants in the parent study were recruited from two online panels: an LGBTQ-specific panel and a general population panel. The LGBTQ-specific panel was recruited by

Community Marketing & Insights (CMI). CMI maintains a diverse panel of LGBTQ participants across all states in the U.S., including 20,000 SMW. A second panel was recruited by MFour. This company maintains a general population panel with approximately 2.5 million active participants in the U.S. Eligibility for the original study was restricted to women over age 18 who resided in the U.S. and identified as lesbian, bisexual, or queer (not heterosexual or mostly heterosexual). The original study also over-sampled African American and Latinx SMW. All study participants were invited to participate in a survey in 2020 by one of the two panel companies, with reminders to those who had not completed the survey. The study invitation and consent form explained that participants were "invited to participate in a brief survey about your experiences and perceptions about marriage and marriage equality in the U.S. (after the 2015 Obergefell vs. Hodges Supreme Court decision that legalized same-sex marriage in all U.S. states)." Participants were compensated by the panel companies after survey completion. All procedures were approved by the Public Health Institute IRB.

Table 1 summarizes characteristics of participants in the current study. The final sample composition was 23% Black/African American, 33% Latinx, and 39% White. The majority of the sample identified as lesbian, 30 years old or older, and employed. More than one-fourth (28%) of the sample was legally married or in a legally recognized civil union or domestic partnership. The majority of participants (61%) were from the LGBTQ (CMI) panel and 39% were from the general population (MFour) panel.

INSERT TABLE 1 ABOUT HERE

Measures

Independent Variables

Selection of measures was informed by earlier qualitative studies and prior psychometric analyses (Drabble, Mericle, et al., 2021; Drabble, Wootton, et al., 2020; Riggle et al., 2018; Wootton et al., 2019). The domains across social-ecological levels (described below) were informed by the results of two qualitative studies. The first study involved in-depth telephone interviews in 2016 with 20 adult SMW about how legalization of same-sex marriage had impacted their lives. The second study was a national online survey that included both closed- and open-ended questions about the impact of legalization of same-sex marriage on perceptions of health and well-being (N=969 survey participants, 418 of whom responded to the open-ended questions). Methodological details and findings from these studies are reported elsewhere (Drabble, Wootton, et al., 2020; Riggle et al., 2018; Wootton et al., 2019). Data from these studies identified key domains of perceived impact of legalized same-sex marriage spanning multiple levels of a social-ecological spectrum, including individual impacts (e.g., personal emotional and tangible benefits); stigma-related concerns; interpersonal impacts (i.e., impacts for couples and family support); impacts on interactions in work/school contexts; and experience of the local social climate. Measures in the current study were informed by psychometric analyses of multiple measures related to the perceived impact of same-sex marriage legalization used the original study, with the same participants as in the current study (Drabble, Mericle, et al., 2021). A full description of measures is provided in Supplemental Table 1 and correlations between measures is provided in Supplemental Table 2.

Personal Impact. This scale included 9 items assessing level of agreement with statements about how the legalization of marriage for same-sex couples had impacted participants personally (e.g., I feel more accepted in society as an LGBTQ person; I am more comfortable being openly LGBTQ in public). The psychometric properties of these items were

analyzed using Rasch rating scale analysis (Andrich, 1978; Wright & Masters, 1982) to identify potentially misfitting items and optimize scale usage. The original 6-point Likert response scale was collapsed to 5-points ranging from Strongly disagree to Strongly agree. Scores were rescaled so that the mean item difficulty was anchored at 50 and a shift in 10 units up or down the measure equaled a shift in one logit. The result of this transformation produced a measure ranging roughly from 0 to 100, with higher scores reflecting more of the latent trait measured. Item separation and analogous measures calculated to represent traditional measures of reliability (e.g., Cronbach's alpha and KR-20) were high (0.87-0.90).

Stigma-Related Concerns. This measure consisted of 6 items assessing level of agreement with statements about the degree to which, despite the legalization of same-sex marriage, participants continued to have concerns about stigma and discrimination (e.g., witnessing hostility against others because of their sexual identity, concerns about experiencing discrimination because of their sexual identity). These items were also analyzed using Rasch rating scale analysis. Item separation and analogous measures calculated to represent traditional measures of reliability were high (0.79-0.85).

Couple Impact. This scale, administered only to participants who reported being in a romantic relationship, included 6 items assessing level of agreement with statements about how the legalization of same-sex marriage impacted participants and their romantic relationships (e.g., My partner and I are treated equally to heterosexuals; I am more likely to be open about my relationship with others). The psychometric properties of these items were high (0.81-0.87).

Family Support. This measure was constructed based on two statements about family support of same-sex marriage: "Immediate members of my family of origin (e.g., parents or caregivers, siblings) are supportive of same-sex marriage" and "Extended members of my family

of origin (e.g., aunts, uncles, cousins) are supportive of same-sex marriage." Response options (none, some, most, all) were averaged across items producing a score ranging from 1-4.

Work/School Impact. This measure was based on level of agreement (strongly disagree to strongly agree) with four statements completing the sentence "Since marriage legalization for same-sex couples…: I am more comfortable at work/school; My work/school is a more accepting environment; I have had more positive interactions with people in my work/school; I am more open about my sexual identity at work/school." Separate versions of these questions were asked of participants depending on whether they were students or employed. Only 23 respondents (5% of the sample) were students and not employed so responses were merged with employed respondents for analysis. These items were highly inter-correlated (Cronbach's alpha on these items=0.91), producing an average score across the items ranging from 1-6.

Local Social Climate. Participants were asked to rate the LGBTQ social climate on a scale from 1 to 10 (with 1 being the most negative and 10 the most positive) and were provided with the following clarifying definition: "By social climate we mean general attitudes, feelings, beliefs, and opinions about LGBTQ people." Participants rated the social climate towards LGBTQ people in both their neighborhood and in their city or town. These two items were averaged to create a single score.

Demographic and other sample characteristics. Sexual identity was assessed using a question that invited participants to select the category that best identified their sexual identity. Responses were used to create a 3-category variable (lesbian, bisexual, and queer/other identity). The queer/other category was constructed based on open-ended responses from participants who wrote in an identity other than lesbian or bisexual, such as queer, asexual, or aromantic. Other demographics included: race/ethnicity (Black/African American, Latinx, White, and other);

relationship status (married [married or domestic partner], cohabiting, in a relationship [not married or cohabiting], or single [not in a current relationship, including 15 participants who were divorced, widowed or separated]); employment status (employed/not employed); age (18-29, 30-49, 50+).

Outcome Variables

Alcohol Use Disorder. Past year alcohol use disorder (AUD) was assessed using criteria from 5th edition of the American Psychiatric Association's Diagnostic and Statistical Manual (DSM-5) (American Psychiatric Association, 2013). Participants were asked about symptoms in 11 domains (failure to fulfill role obligations; drinking despite social or interpersonal problems; drinking in physically hazardous circumstances; tolerance; withdrawal; using more than or for longer than intended; persistent desire to cut down/control use; giving up important activities; spending a lot of time getting alcohol, using or recovering from use; drinking despite physical or psychological problems; and craving). Based on the DSM-5 guidelines, individuals endorsing any 2 of the 11 criteria were classified as AUD positive (Grant et al., 2017; Hasin et al., 2013).

Depression. Depression was assessed based on the two-item PHQ-2 depression screener (Kroenke et al., 2010; Löwe et al., 2010). These questions asked about mood (During the past two weeks, how often have you been bothered by: feeling down, depressed, or hopeless?) and loss of interest or pleasure (During the past two weeks, how often have you been bothered by: Feeling little interest or pleasure in doing things?). Response options were: not at all (0), several days (1), more than half the days (2) and nearly every day (3). An aggregate score for the two items (0-6) was created. Then, following guidelines by Kroenke et al. (2010), a dichotomous variable was constructed to indicate probable depression (score of 3+).

Self-Perceived Health. Self-perceived health was based on participant responses to the question, "Would you say your health in general is excellent, very good, good, fair or poor?". The variable was dichotomized to compare those who reported excellent, very good, or good health to those who reported that their health was fair or poor. This global assessment of self-perceived health has been shown to be valid, reliable, and strongly associated with more extensive health measures (Shields & Shooshtari, 2001), and has been used in other studies with sexual minority populations (Gonzales & Ehrenfeld, 2018).

Statistical Analysis

To address the first research question, we examined whether the perceived impact of same-sex marriage legalization across various social-ecological domains varied by key demographic characteristics. Mean domain scores by sample characteristics were calculated, and differences were tested using OLS regression. Differences among categories associated with the sample characteristics were tested only if the overall test for the characteristic was significant based on a joint Wald test. To address the second research question, multivariable logistic regression models (one at a time) were tested to examine the relationship between perceived impact of legalized same sex marriage (scores for each of six scales) on health outcomes, adjusting for age, race/ethnicity, sexual identity, relationship status, employment status, and panel sample source.

Results

Impacts of Marriage Recognition: Demographic variations

Table 2 presents findings examining differences in domain scores by sample characteristics. Only one difference was found by race/ethnicity. Participants identifying as Black reported significantly lower scores for family support of same-sex marriage than

participants in the white, Hispanic/Latinx, and other racial/ethnic categories (M=2.31 vs. 2.80, 2.70, and 2.72, respectively). We also found a difference by employment status with respect to rating the local social climate towards LGBTQ people; social climate scores among those who were employed were significantly higher (more positive) than those who were unemployed (M=6.93 vs. 6.44). Panel sample scores related to the psychosocial impact of same-sex marriage legalization were similar with the exception of two domains: compared to participants recruited from the general panel sample, those from the LGBTQ-specific panel reported higher mean scores for stigma-related concerns (M=59.43 vs. 54.95) and more positive local social climates (7.27 vs. 6.11).

INSERT TABLE 2 ABOUT HERE

Scores for all scales except family support varied by sexual identity. Participants identifying as "Queer/something else" had lower personal impact scores than those identifying as lesbian (M=52.02 vs. 60.08) and significantly higher stigma-related concerns scores than lesbian and bisexual participants (M=68.29 vs. 57.88 and 54.76, respectively). Lesbian participants had higher (more positive) couple impact and school/work support scores than bisexual participants (M=59.10 vs. 51.16 and 4.48 vs. 4.03, respectively). They also had higher local social climate scores than their bisexual and queer/something else counterparts (M=7.08 vs. 6.54 and 5.96, respectively).

Several differences were also found in scale scores by relationship status. Single participants had lower personal impact scores than those in committed non-cohabiting, cohabitating, or married relationships (M=53.10 vs. 62.76, 58.62, and 62.72, respectively); they

also had lower social climate scores than those in committed non-cohabiting or married relationships (M=6.39 vs. 7.02 and 7.23, respectively). Married participants had lower scores on stigma-related concerns than participants who were single or in cohabitating relationships (M=54.44 vs. 59.96 and 58.77, respectively), but they had higher scores on family support (M=2.88 vs. 2.53 and 2.67, respectively) and work/school support (M=4.60 vs. 4.09 and 4.26, respectively).

Impact Scales and Health Outcomes

Table 3 summarizes results of multivariable logistic regression analyses assessing the impact of legalized same-sex marriage across the social-ecological domains on alcohol use disorder, health, and mental health. Higher scores on perceived positive personal impact of equal marriage rights were associated with lower odds of depression (aOR=0.98, p=0.003), whereas higher scores on stigma-related concerns were associated with lower odds of self-perceived good health (aOR=0.98, p=0.0035) and higher odds of depression (aOR=1.01, p=0.039). Higher scores on the family support measure were associated with higher odds of self-perceived good health (aOR=1.65, p=0.003) and lower odds of depression (aOR=0.73, p=0.035). Higher scores on perceived LGBTQ-positive social environment were associated with lower odds of depression (aOR=0.84, p=0.003), but higher scores on the work/school support measure were associated with higher odds of alcohol use disorder (aOR=1.30, p=0.047).

INSERT TABLE 3 ABOUT HERE

Discussion

The current study examined whether perceptions of stigma across social-ecological levels (e.g., individual, couple, workplace, community) differed among SMW, and the associations of stigma perceptions with alcohol use disorder, depression, and self-perceived health. Our findings

contribute to a more nuanced understanding of how stigma and changes in structural stigma impact the health and well-being of SMW. Findings can also be used to aid development of interventions designed to reduce health disparities by sexual identity.

Perceived impact of marriage legalization differed by demographic characteristics. Consistent with recent qualitative research that explored sub-group differences in impacts of legalized same-sex marriage among SMW (Drabble, Wootton, et al., 2020), participants across sexual minority identities and relationship statuses perceived positive personal impacts (all above 50 on a scale of 0 to100). However, perceived positive personal impact of marriage legalization was lower among 1) participants who were single, relative to those in other relationship categories, and 2) participants who identified as queer/something else, relative to lesbian-identified participants. Concerns about stigma despite marriage legalization were also common across participants, but they were significantly higher among those who identified as queer/something else compared to both lesbian and bisexual women and significantly lower among married participants than single or cohabiting participants. These findings underscore the importance of further research. First, emerging research suggests that there are unique minority stressors and health disparities for individuals with bisexual, pansexual or queer identities (Galupo, 2020), and there is a need for research to better understand the specific concerns, characteristics, strengths and vulnerabilities of these groups (Mereish et al., 2017). Second, ongoing research is needed to document structural and interpersonal stigma other than as related to marriage legalization. Experiences of stigma are complex, and although legalization of same-sex marriage is an important milestone in reducing structural stigma, SMW are still impacted by stigma at interpersonal (e.g., family rejection) and structural levels (e.g., health services and

housing) (Gonzales & Ehrenfeld, 2018; Haines et al., 2018; Lannutti, 2008; Raifman et al., 2018; Riggle et al., 2018).

Compared to single or cohabitating participants, those who were married perceived greater support for same-sex marriage among immediate and extended family members. Results of qualitative research studies suggest that perceived family support is complicated, and that familial support for same-sex marriage is distinct from social support of sexual minority individuals (Riggle et al., 2018; Thomas, 2014). Our study extends prior research by explicitly measuring perceived family of origin support for same-sex marriage. Familial disapproval of same-sex marriage, especially by parents, can be a profound source of stress and disappointment for SMW, and it may even act as an impediment to getting married (Lannutti, 2008, 2013). Political facets of same-sex marriage, and how these are echoed in family support or opposition of same-sex marriage, are important to how sexual minorities perceive same-sex marriage (Lannutti, 2018b). Same-sex couples who elect not to marry may feel that their relationships are less supported or perceived as less committed by family members or extended social networks (Lannutti, 2018a). Although legalized same-sex marriage appears to foster greater social acceptance of sexual minorities (Ogolsky et al., 2019b), family members who were disapproving of same-sex marriage before national legalization often remain disapproving (Riggle et al., 2018). Additional research is needed to better understand how familial support of same-sex marriage may change over time and how such changes impact the health and well-being of SMW.

In the current study, lesbian participants had higher (more positive) couple impact and school/work support scores than bisexual participants and they also rated their local social climate more positively than their bisexual and queer/something else counterparts. These

findings align with those of qualitative research suggesting that legalized same-sex marriage may be particularly important to lesbian-identified women (Drabble, Wootton, et al., 2020) and that it offers a sense of legitimization in family and community contexts, particularly for SMW in same-sex relationships (Drabble, Wootton, et al., 2020; Lannutti, 2007; Wootton et al., 2019). Furthermore, bisexual women may experience antibisexual prejudice (e.g. perceptions of sexual irresponsibility), invalidation and invisibility from family members (Todd et al., 2016) as well as in interactions with both heterosexual and lesbian/gay peers (Arriaga & Parent, 2019; Hayfield et al., 2018; Matsick & Rubin, 2018). Additional research is needed to explore bisexual women's attitudes toward same-sex marriage (Galupo & Pearl, 2008) and strategies for reducing bi-negativity and stigma at the individual, interpersonal, and community level (Feinstein et al., 2019).

We also found that perceptions of family support of same-sex marriage varied by race/ethnicity. This finding is consistent with those of Everett and colleagues (2016) and extend those of Lee (2018, 2020), who explored possible differences in the perceived impact of legalized same-sex marriage among sexual minorities by race/ethnicity. Although Lee (2020) found no differences by race/ethnicity in how much participants felt supported by family members *as an LGBT person*, they found that African American/Black SMW reported less family support *of same-sex marriage* relative to other race/ethnic groups. Black SMW appear to be more likely than Black SMM to perceive same-sex marriage legalization to be important to their lives (Lee, 2018, 2020). This difference may be driven, in part, by parenting status, which is more common among women, and sensitivity to the potential protections and respectability conferred by marriage (Lee, 2018, 2020). Furthermore, Lee (2020) found that compared to participants who perceived less homophobia, those who strongly believed that homophobia is a

problem in their racial communities were more likely to report that same-sex marriage legalization was extremely important to them. Although we found no differences by race/ethnicity in perceived individual impact of legalized same-sex marriage, differences in perceptions of family support of same-sex marriage or other protections of LGBTQ should be further examined in future research. Such research is important given studies documenting that family support has a positive influence on health and well-being among sexual minority people across race and ethnic identities (Kavanaugh et al., 2020; Roberts & Christens, 2021; Swendener & Woodell, 2017). Although navigating familial dynamics of acceptance or rejection may be challenging for many sexual minorities, research findings suggest that many African American/Black SMW in couples find adaptive strategies for sustaining relationships and negotiating participation in rituals with immediate and extended family. Strategies include deemphasizing their role as member of a couple in family gatherings and accepting family member willingness to welcome partners as fictive kin or close friends rather than lifelong partners (Glass, 2014; Glass & Few-Demo, 2013). How such negotiations might vary in the context of legalized same-sex marriage warrants future investigation.

In our study, perceived impact of legalized same-sex marriage was similar across the two panel samples, with a couple of exceptions: stigma related concerns and positive perceptions of local social climate were each higher among participants in the LGBTQ-specific panel sample than those in the general panel sample. Participants in the LGBTQ sample were likely more connected to LGBTQ communities than the general panel sample, as they were originally recruited from a wide range of sexual and gender minority networks. Sexual minorities with strong community connections may be more sensitive to both positive and stigmatizing facets of their social and political environment. The absence of significant differences in other measures

of perceived impact of sex-sex marriage or in health outcomes is worth noting, but there remains a need for research that examines health outcomes among SMW recruited using diverse sampling strategies (Boehmer et al., 2011; Drabble et al., 2018; Salway et al., 2019)

We found that perceived impact of same-sex marriage legalization predicted health outcomes in several areas. Higher scores on perceived positive personal impact of equal marriage rights were associated with lower odds of depression. These findings are congruent with recent research documenting the positive impact of living in policy contexts that allow or support same-sex marriage (Hatzenbuehler et al., 2017; Kail et al., 2015; Ogolsky et al., 2019a, 2019b; Tatum, 2017). Greater stigma-related concerns despite marriage legalization were associated with lower odds of good health and higher odds of depression. Perceived positive social climate toward LGBTQ people was also associated with lower odds of depression. These findings underscore the importance of sustained efforts to address dimensions of structural stigma that continue to impact sexual minorities beyond legalized same-sex marriage. For example, although support for same-sex marriage and LGBT rights generally increased in the U.S. after the supreme court decision granting same-sex marriage rights across states, approximately 40% of U.S. adults still favor exemptions to anti-discrimination laws (e.g., allowing small businesses to deny services to sexual minorities) for religious reasons (Kaufman & Compton, 2021). Emerging research indicates state-level religious exemption laws, such as permitting denial of health care to LGBTQ individuals or denying services to same-sex couples on the grounds of religious beliefs, are harmful to sexual and gender minorities (Raifman et al., 2018).

We found that perceived family support for legalized same-sex marriage was associated with higher odds of reporting good to excellent general health. Our finding points to the possibility that self-rated health may be influenced by proximal stressors, such as the degree to

which family members are affirming or rejecting of policies, such as same-sex marriage, designed to afford equal rights and protections to sexual minorities. Experiences of interpersonal stigma and structural stigma are each important drivers of disparities in physical health outcomes (Lick et al., 2013) and mental health outcomes (Everett et al., 2016) that are particularly pronounced among SMW relative to heterosexual women. Understanding interpersonal factors that affect SMW's health is important for informing intervention development. For example, strategies for coping with limited family support for same-sex marriage or sexual minority rights may be a fruitful focal point for interventions (Rostosky et al., 2004). Individual SMW and same-sex couples may benefit from interventions that encourage them to find ways to create safe spaces and connect with affirming social support to counteract the potentially hurtful impact of family members who oppose policy protections for sexual minorities (Glass, 2014; Glass & Few-Demo, 2013; Rostosky et al., 2004).

Unlike Hazenbuehler and colleagues (2010) who found higher rates of alcohol use disorder among sexual minorities living in states that prohibited same-sex marriage compared to those living in states without such prohibitions, we found no significant associations between perceived stigma and AUD. It is possible that direct measures of structural stigma are more salient to alcohol use disorder than our measure of perceived impact. Only one domain scale score predicted alcohol use disorder in our study, and in a surprising direction. Specifically, perceiving increased support in work/school was associated with higher odds of alcohol dependence. This finding may be an artifact of the way we framed these items in the survey. The stem for the four work/school survey statements was, "Since marriage legalization for same-sex couples…" Consequently, statements such as "I am more comfortable at work/school" invited participants to assess perceived *change* in the environment. We did not have a baseline measure

to assess the degree to which participants perceived their work/school environments to be hostile or accepting before legalized same-sex marriage. This omission means it is not possible to discern whether participants who disagreed with statements were employed or attending school in environments that were consistently positive both before and after institutionalization of same-sex marriage. Second, discrimination in employment, education, and everyday interpersonal interactions remain common in the U.S. (Casey et al., 2019), and even study participants who experienced positive changes in their work/school environments may still experience minority stress in these contexts. Findings from qualitative research suggests that, although same-sex marriage legalization may have contributed to SMW's greater sense of acceptance and safety in the workplace, they remained vigilant about when and with whom it is safe to disclose their identities (Wootton et al., 2019). Third, the impact of national legalized same-sex marriage on SMW experiences in the workplace are likely complicated by the fact that a Supreme Court decision prohibiting discrimination against employment based on sexual or gender identity (2020) lagged national legalization of same sex marriage (2015) by five years. Although the workplace environment might be perceived as more welcoming as a result of same-sex marriage legalization, qualitative research findings suggest that many SMW living in states with limited employment protections experienced a sense of disconnect between having the right to marry but few protections against being fired or treated unfairly on the basis of their sexual identity (Wootton et al., 2019).

Limitations and Directions for Future Research

Findings should be interpreted in the context of study limitations. While the sample was drawn from a parent study with a large panel sample of SMW across the U.S., participants were not recruited using probability sampling methods. Therefore, the findings have limited

generalizability. For example, SMW in the sample had notably high levels of educational attainment; only 13% reported having attained only a high school education or less, compared to approximately 37% of women in the U.S. (U.S. Census Bureau, 2020). The sample included only SMW. Although there is a need for research specific to the concerns of SMW (Institute of Medicine, 2011), the findings of this study may not be applicable to SMM or to gender minorities. The current and parent studies oversampled African American and Latinx SMW; although the diversity of the sample was a strength of the study, findings may be less representative of Asian, Pacific Islander, Native American, or individuals from other racial or ethnic communities.

There are also limitations associated with the study design. First, respondents completed the survey at a single point in time; consequently, we are not able to analyze objective measures of perceptions or experiences of stigma before and after national legalization of same-sex marriage. Second, we may underestimate the protective effect of other positive elements of the participant's social and policy environment. For example, participants might report little or no improvements in personal feelings of acceptance "because of same-sex marriage legalization" if they were already living in supportive social contexts. Furthermore, it may be difficult to disentangle the perceived effects of same-sex marriage legalization from potential experimenter effects; for example, given the focus of the study, respondents might have been motivated to provide answers that were favorable to same-sex marriage legalization. Finally, we did not fully account for characteristics of the study participants' environment that may have impacted health outcomes, such as whether they lived in urban or rural contexts or whether their state of residence allowed for same-sex marriage before the U.S. Supreme Court decision that mandated equal access to marriage.

Given the relatively recent policy shift which legalized same-sex marriage across all states in the U.S., the effect of legalized same-sex marriage on health and behavioral health outcomes may evolve over time, especially as additional policy changes that intersect with marriage or LGBTQ community life are enacted, such as employment nondiscrimination. There is also a need for ongoing research to identify whether SMW's stigma-related experiences shift over time, or whether stigmatizing experiences persist in some family, workplace, or local community environments. Furthermore, our research focused on just three health conditions. Future research is needed to investigate a broader range of health outcomes, including severity of substance use and mental health disorders as well as physical health concerns such as asthma, poor sleep, and cardiovascular disease risk. Finally, there is a need for research to better develop interventions that facilitate coping with stigma in family, work, and community contexts, which appear to persist despite legalization of same-sex marriage.

Conclusion

Monitoring the direct effects on health behavior and health outcomes of policies that protect or restrict the rights of sexual and gender minority populations remains important. At the same time, persistent health disparities in some populations, such as SMW, underscore the value of research that explores perceptions of policy changes, as well as interpersonal and community-level factors that may amplify or undermine the potential positive impact of those policies.

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Table 1. Sample characteristics (N=446)

	n	%
Sexual Identity		
Lesbian	271	60.8%
Bisexual	141	31.6%
Queer or other	34	7.6%
Relationship Status		
Married	124	27.8%
Relationship (cohabiting)	102	22.9%
Relationship (not cohabitating)	65	14.6%
Single or dating	155	34.8%
Race/ethnicity		
Black/African American	102	22.9%
Latinx	147	33.0%
White	173	38.8%
API, AIAN, or other race/ethnicity	24	5.4%
Employment Status		
Employed	344	77.1%
Unemployed	102	22.9%
Data Source		
LGBTQ panel	272	61.0%
General population panel	174	39.0%

Table 2: Psychosocial impact scores by demographic characteristics

	Personal Impact (9 Items and 5 Response Categories)		Stigma-related Concerns (6 Items and 5 Response Categories)		Couple Impact (6 Items and 5 Response Categories)		Average Family Support Score (2 items and 4 Response Categories)		Average Work/School Support Score (4 items and 6 Response Categories)		Local Social Climate (2 Items, Rated from 1-10)	
	M (SE)	p	M (SE)	p	M (SE)	p	M (SE)	p	M (SE)	p	M (SE)	p
Age		0.62		0.15		0.70		0.82		0.79		0.16
18-29	57.40 (1.37)		59.49 (1.26)		55.66 (2.20)		2.71 (0.06)		4.30 (0.09)		6.69 (0.15)	
30-49	59.17 (1.39)		56.15 (1.17)		56.71 (2.09)		2.66 (0.06)		4.37 (0.09)		6.79 (0.14)	
50+	59.04 (1.91)		57.55 (1.73)		59.08 (2.64)		2.70 (0.09)		4.26 (0.14)		7.19 (0.22)	
Race/Ethnicity		0.56		0.46		0.25		<0.01		0.45		0.12
White	58.78 (1.21)		56.63 (1.19)		53.48 (2.20)		2.80 (0.06)	W>B	4.23 (0.10)		6.93 (0.16)	
Black	57.53 (2.13)		57.18 (1.45)		58.90 (3.20)		2.31 (0.08)	B<W; B<L; B<O	4.41 (0.12)		6.75 (0.18)	
LatinX	59.37 (1.58)		58.69 (1.52)		58.60 (2.12)		2.79 (0.07)	L>B	4.39 (0.11)		6.89 (0.15)	
Asian/Other	53.92 (3.18)		61.31 (2.34)		61.52 (4.50)		2.72 (0.16)	O>B	4.13 (0.20)		5.94 (0.33)	
Sexual Identity		0.03		<0.01		0.02		0.57		<0.01		<0.01
Lesbian/Gay	60.08 (1.16)	L>O	57.88 (0.98)	L<O	59.10 (1.58)	L>B	2.71 (0.05)		4.48 (0.07)	L>B	7.08 (0.11)	L>B; L>O
Bisexual	56.83 (1.38)		54.76 (1.35)	B<O	51.16 (2.69)	B<L	2.65 (0.07)		4.03 (0.11)	B<L	6.54 (0.17)	B<L
Queer/Something else	52.02 (3.35)	O<L	68.29 (2.39)	O>L; O>B	60.68 (4.87)		2.59 (0.15)		4.15 (0.23)		5.96 (0.41)	O<L
Relationship Status		<.01		0.03		0.07		<0.01		<0.01		<0.01
Single	53.10 (1.54)	S<R; S<C; S<M	59.96 (1.32)	S>M	---		2.53 (0.07)	S<M	4.09 (0.10)	S<M	6.39 (0.16)	S<R; S<M
Non-cohabiting	62.76 (2.19)	R>S	56.74 (1.95)		54.45 (3.10)		2.68 (0.10)		4.36 (0.17)		7.02 (0.24)	R>S
Cohabitating	58.62 (1.58)	C>S	58.77 (1.51)	C>M	53.83 (2.18)		2.67 (0.08)	C<M	4.26 (0.12)	C<M	6.86 (0.18)	
Married	62.72 (1.63)	M>S	54.44 (1.51)	M<S; M<C	60.33 (2.01)		2.88 (0.07)	M>S; M>C	4.60 (0.09)	M>S; M>C	7.23 (0.17)	M>S
Employment Status		0.16		0.47		0.25		0.37		0.22		0.02
Employed	59.10 (1.01)		57.38 (0.85)		57.49 (1.50)		2.70 (0.04)		4.34 (0.06)		6.93 (0.10)	E>U
Unemployed	56.19 (1.71)		58.70 (1.79)		53.59 (3.09)		2.62 (0.09)		4.13 (0.19)		6.44 (0.20)	U<E

Panel Source		0.23		<0.01		0.84	0.93	0.95		<0.01
LGBTQ	59.26 (1.09)		59.43 (0.89)	L>G	56.51 (1.73)		2.69 (0.05)	4.32 (0.07)	7.27 (0.11)	L>G
General Population	57.13 (1.43)		54.95 (1.37)	G<M	57.07 (2.15)		2.68 (0.06)	4.31 (0.11)	6.11 (0.14)	G<L

NOTES. All scale scores (except the Avg Family Support, Avg School/Work Support, and Local Social Climate scores) are based on measures created using Rasch Analysis conducted in WINSTEPS. Rating scale categories were collapsed to enhance psychometric properties of the measures. Scores were rescaled so that the mean item difficulty was anchored at 50 and a shift in 10 units up or down equaled a shift in one logit. The result of this transformation is a measure that ranges roughly from 0 to 100, depending on the upper/lower level of the latent trait. Means scores by category were calculated and differences in scores by demographic characteristics were tested using OLS regression. Differences between categories were only tested if the overall test for the characteristic was significant based on a joint Wald test.

Table 3. Multivariate models predicting alcohol use disorder, self-reported health, and depression

	DSM AUD 2+			Depression			Excellent/Very Good or Good Health		
	OR	SE	p	OR	SE	p	OR	SE	p
Personal Impact	1.00	0.01	0.786	**0.98**	**0.01**	**0.003**	1.01	0.01	0.103
Stigma-related Concerns	1.01	0.01	0.420	1.01	0.01	0.039	**0.98**	**0.01**	**0.035**
Couple Impact	1.01	0.01	0.418	0.99	0.01	0.084	1.01	0.01	0.068
Family Support	1.21	0.21	0.283	0.73	0.11	0.035	**1.65**	**0.28**	**0.003**
Work/School Support	**1.30**	**0.17**	**0.047**	0.85	0.09	0.138	1.03	0.13	0.831
Local Social Environment	1.06	0.08	0.433	**0.84**	**0.05**	**0.003**	1.14	0.08	0.056

NOTES. The relationship between various domain scores and drinking, health, and mental health measures were examined using multivariable logistic regression models that adjusted for age, race/ethnicity, sexual identity, relationship status, employment status, and data source. Analyses included subsample of participants for whom outcome was relevant: couple impact among participants in any partnered relationships status (n= 278); work/school support among participants who were employed or in school (n=374).

Supplemental Table 1. Measures assessing the impacts of same-sex marriage legalization

Domains and Items
Personal Impact [1]
Because of same-sex marriage legalization…
I feel more accepted in society as an LGBTQ person.
I feel safer in my neighborhood.
I am more comfortable being openly LGBTQ in public.
I feel validated as an LGBTQ person.
It is easier to plan for my future.
Same-sex relationships are more accepted.
It is easier to be open with people about my sexual identity.
In general, I feel safer.
I believe that LGBTQ people are more accepted as part of everyday life.
Stigma-related Concerns[1]
Even though same-sex marriage is legal….
I witness hostility against others because of their sexual identity.
There is now a backlash against same-sex marriage.
I am concerned about experiencing discrimination because of my sexual identity.
There is now a backlash against LGBTQ people in general.
I experience hostility against me because of my sexual identity.
I am concerned about traveling to conservative or unfamiliar places.
Couple Impact[1]
Because of same-sex marriage legalization…
My partner and I are treated equally to heterosexuals.
Other people treat my relationship with greater respect.
My relationship is treated as more "legitimate".
I am more likely to be open about my relationship with others.
Now I share more details about my relationship with other people.
I am less likely to hide the fact that I am in a relationship with a same-sex or gender non-binary partner.
Family Support[2]
Please mark whether each of the following statements would apply to all, most, some or no members of your family …
Immediate members of my family of origin (e.g., parents, caregivers and siblings) are supportive of same-sex marriage.
Extended members of my family of origin (e.g., aunts, uncles, cousins) are supportive of same-sex marriage.
Work/School Impacts[1]

Since marriage legalization for same-sex couples …

I am more comfortable at work/school.

My workplace/school is a more accepting environment.

I have had more positive interactions with people in my workplace/school.

I am more open about my sexual identity at work/school.

I am more careful about disclosing my sexual identity at work/school (reverse coded)

Note: A school specific version of this questions was asked of individuals who were non-working students, then merged with parallel work items for analysis.

Social Climate [3]

Please rate the social climate toward LGBTQ people on a scale from 1 to 10 (with 1 as the most negative and 10 as the most positive) By social climate we mean general attitudes, feelings, beliefs, and opinions about LGBTQ people

The social climate towards LGBT people in *your neighborhood* is generally…

The social climate towards LGBT people in *your city or town* is generally…

Supplemental Table 2: Pearson correlations between scales measuring the impact of legalized same sex marriage

Variable	*n*	M	SD	Personal Impact	Stigma-related concerns	Couple impact	Family support	Work/ school impact	Political and social environment
Personal impact	445	58.4	18.4	-	-	-	-	-	-
Stigma-related concerns	445	57.7	16.2	-.225**	-	-	.-	-	-
Couple impact	278	56.7	22.5	.648**	-.146*	-	-	-	-
Family support	438	2.7	.8	.216***	-.170***	.264***	-	-	-
Work/school	375	4.3	1.1	.546***	-.092	.589***	.214***	-	
Political and social environment	445	6.8	1.9	.307***	-.186***	.261***	.310***	.259***	-

* $p < .05$; **p < .01 *** p < .001

NOTES. Correlations represent the recommended items and recommended number of categories with higher scores reflecting greater agreement with statements, as specified in Supplemental Table 1, with the exception of the LGBT Community Impact Scale. In the LGBT Community Impact scale, higher mean indicates higher levels of disagreement.