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The Influence of Childhood Physical Abuse on Adult Health Status in Sexual Minority Women: The Mediating Role of Smoking

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Abstract

Background—Among women in the general population, childhood physical abuse (CPA) is associated with poor adult health status and engagement in health risk behaviors. Sexual minority women (SMW) are at elevated risk of CPA, have higher rates of smoking, and may be at higher risk for poorer general health. In this study, we examined the influences of CPA on health status in a diverse sample of SMW. We hypothesized that SMW with a history of CPA would report poorer health than those without such histories and that early onset of smoking—an important health risk behavior—would mediate the relationship between CPA and current health status.

Methods—Structural equation modeling was used to evaluate the influence of CPA on early health risk behavior (i.e., age of smoking onset) and current perceived health status in a community based sample of 368 SMW.

Results—More than one fifth of the sample (21.5%) reported a history of CPA. One fourth of the sample was current smokers; the average age of smoking onset was 19 to 20 years old. The mean level of self-rated health status was between “fair” and “good.” When relationships were simultaneously estimated, the effect of CPA on health status was mediated by two sequential smoking factors: CPA was associated with earlier age of smoking onset, and age of smoking onset was associated with current smoker status. Being a current smoker had a negative effect on perceived health status.

Implications for Practice and/or Policy—These results suggest that tobacco use is an important pathway by which CPA influences current health status. Prevention and early intervention initiatives should focus on the reduction of CPA among SMW to eliminate the long-term health consequences of adverse childhood events among SMW.

Childhood physical abuse (CPA) is common in the general population, with prevalence rates for relatively severe forms of physical abuse, such as hitting with a fist or kicking, ranging from 15.8% to 28% (Briere & Elliott, 2003; Goodwin, Hoven, Murison & Hotopf, 2003;

Hussey, Chang & Kotch, 2006). In the past decade, several research teams have examined rates of CPA among sexual minority women (SMW; lesbian, bisexual, and women who have sex with women; e.g., Austin et al., 2008; Balsam, Rothblum & Beauchaine, 2005; Corliss, Cochran & Mays, 2002; Friedman et al., 2011; Hughes, McCabe, Wilsnack, West & Boyd, 2010; Stoddard, Dibble, & Fineman, 2009). Using the National Survey of Midlife Development, Corliss and associates (2002) examined parental maltreatment during childhood among lesbian, gay, bisexual, and heterosexual adults. Compared with heterosexual women, lesbian/bisexual women reported higher rates of major physical maltreatment (i.e., kicked, bit, hit) by family members. Austin and colleagues (2008) obtained similar findings with reports of more severe, frequent, and persistent physical abuse as children among lesbian and bisexual women compared with heterosexual women. Combined, the research that has emerged over the past decade shows a clear pattern of elevated risk for CPA among SMW. However the majority of this research has been descriptive in nature (documenting elevated rates of CPA) and has not examined the long-term consequences of adverse childhood experiences on key outcomes. One long-term outcome of interest is physical health status. An emerging body of literature suggests numerous disparities in health outcomes based on sexual orientation. For example, SMW report a greater variety of health conditions and limitations compared with heterosexual women (Cochran & Mays, 2007; Conron, Mimiaga, & Landers, 2010; McNair, Szalacha, & Hughes, 2011) including overall lower ratings of perceived health and health quality of life (Conron, et al., 2010; Fredriksen-Goldsen, Kim, Barkan, Balsam, & Mincer, 2010). Despite the known disparities in rates of CPA based on sexual orientation, few studies have explored the relationships between CPA and health in this population or examined the mechanisms by which CPA may negatively influences health status (Lehavot & Simoni, 2011).

CPA and Physical Health Outcomes

Experiences of CPA have long been known to negatively impact the mental health of adults in the general population (for reviews, see Fergusson & Mullen, 1999; Finkelhor & Hashima, 2001; Holmes & Slap, 1998). More recently, researchers have described associations between adverse childhood experiences and adult physical health (Anda et al., 1999; Dube, Cook & Edwards, 2010; Walker et al., 1999; Dembo, Dertke, Borders, Washburn, & Schmeidler, 1988; Thompson, Potter, Sanderson, & Maibach, 1997). For example, Dube and colleagues (2010) examined health outcomes associated with adverse childhood experiences in a large, probability-based sample of adults. Respondents who reported childhood adversities were significantly more likely to rate their current health as poor/fair. Other studies have linked experiences of CPA with specific disorders including migraines (Fuller-Thomson, Baker, & Brennenstuhl, 2010a; Tietjen & Peterlin, 2011), heart disease (Fuller-Thomson, Brennenstuhl, & Frank, 2010b), cancer (Fuller-Thomson & Brennenstuhl, 2009a), and osteoarthritis (Fuller-Thomson, Stefanyk & Brennenstuhl, 2009b).

The multiple pathways by which adverse childhood experiences influence adult health status remain under investigation; however, one explanation for the relationship between CPA and poor health is that maltreatment in childhood may lead to the early initiation of risky health behaviors (Rodgers et al., 2004). Several studies have linked tobacco use among adolescents with a history of CPA (Anda et al., 1999; Jun, Rich-Edwards, Boynton-Jarrett & Wright, 2008; Csoboth, Birkás, & Purebl, 2003; Simantov, Schoen, & Klein, 2000). For example, in a college-aged sample of women, those reporting childhood abuse were three times more likely to be early smokers and seven times more likely to be a current smoker (De Von Figueroa-Moseley, Abramson, & Williams, 2010). A similar relationship between CPA and smoking has been observed among sexual minority youth. Using data from the Nurses'

Health Study II, Jun and colleagues (2010) found that childhood abuse contributed to the elevated rates of tobacco and alcohol use among sexual minority adolescents.

Smoking prevalence rates among adult SMW far exceed those of their heterosexual counterparts (King, Dube, & Tynan, 2012). For example, based on data from the California Health Interview Survey, Tang and colleagues (2004) found that the prevalence of smoking among lesbians and bisexual women was approximately 70% higher than that among heterosexual women (25% vs. 15%). Even after controlling for age, race, education, income, and urban/rural status, lesbians (odds ratio [OR], 1.95) and bisexual women (OR, 2.08) were more likely to smoke than heterosexual women. These basic patterns have been reported in numerous probability and nonprobability samples across the United States (e.g., Gruskin, Greenwood, Matevia, Pollack, & Bye, 2007; Lee, Griffin, & Melvin, 2009; Pizacani et al., 2009). In addition to higher smoking prevalence rates, SMW begin smoking at earlier ages than heterosexual women. In a study of sexual minority youth, lesbian/gay and bisexual youths smoked their first cigarette at younger ages, were more likely to be current smokers, and had higher frequency of smoking. Among past-year smokers, sexual minority females smoked more cigarettes daily and scored higher on nicotine dependence than completely heterosexual females (Corliss et al., 2012).

Disparities in CPA, smoking, and health status among women based on sexual orientation represent poorly understood public health concerns (Boehmer, Miao, Linkletter, & Clark, 2011; Gruskin et al., 2007; Lee et al., 2009; Sanchez, Meacher, & Beil, 2005; Tang et al., 2004). Early initiation and continued use of tobacco as a consequence of childhood trauma is a plausible linkage between childhood trauma and adult health outcomes in this population. Given the higher than expected rates of CPA, smoking, and poor health status observed among SMW, this subgroup of women provides an opportunity to more closely examine the long-term impact of CPA on the health of adult women and to test hypothesized pathways that may link them.

Specific Aims

Using data from the Chicago Health and Life Experiences of Women (CHLEW), a longitudinal study of risk and protective factors for heavy drinking and drinking-related problems, we examined whether CPA was associated with cigarette smoking (age of initiation and current smoking status) and whether cigarette smoking mediated the relationship between CPA and perceived health status in adult SMW.

Methods

Participants

A volunteer sample was recruited for the CHLEW study using sampling methods designed to minimize the limitations and maximize the strengths of convenience sampling strategies. Clusters of social networks (e.g., formal community-based organizations and informal community social groups) and individual social networks, including those of women who participated in the study, were used. The study was advertised in local newspapers and on flyers posted in churches and bookstores, and distributed to individuals and organizations via formal and informal social events and social networks. Advertisements described the study as an effort to better understand the health and life experiences of women who identify as lesbian and encouraged interested women to call for a screening interview. A brief screening interview was administered to determine eligibility (sexual identity, 18 years old or older, English speaking, and residence in the greater Chicago metropolitan area).

Procedures

In 2001 and 2002, CHLEW study staff recruited and interviewed 447 English-speaking women who met the eligibility criteria. Approximately 4 years after baseline data were collected, women in the study were invited to participate in a follow-up interview. Wave 2 follow-up interviews were conducted with 384 women for a response rate of 85.9%. Lost to follow-up were 33 (7.4%) women who could not be located, 10 (2.2%) who were deceased, 10 (2.2%) who refused, and 8 (1.8%) who were located but were unable to participate for various reasons (e.g., scheduling conflicts). The strategies used to promote retention between waves 1 and 2 included asking participants to provide contact information for at least two friends/relatives and sending newsletters, birthday and holiday cards, and letters with return postcards requesting address changes or confirmation.

Face-to-face, structured interviews were conducted in a private setting (usually the respondent's home) by female interviewers. Interviewers received extensive training in general interviewing techniques as well as study-specific training that included attention to potentially sensitive topics, such as sexual experience and substance use. After a description of the study's purposes and procedures, participants were asked to read and sign a consent form. The interviews averaged 90 minutes. The CHLEW survey questionnaire was adapted from the National Study of Health and Life Experiences of Women, a national longitudinal study of women in the general population (see, for example, Wilsnack, Wilsnack, & Klassen, 1984; Wilsnack, Klassen, Schur, & Wilsnack, 1991). The National Study of Health and Life Experiences of Women questionnaire was designed in cooperation with the National Opinion Research Center and was used to collect data from more than 1,600 women between 1981 and 2001 (e.g., see Wilsnack et al., 1984; Wilsnack, Wilsnack, Kristjanson, & Harris, 1998; Wilsnack et al., 1991) on the individual and combined effects of a large number of factors associated with women's drinking. In addition to small changes in the wording of some questions to be more inclusive of lesbians' experiences, additional questions about sexual orientation (e.g., sexual identity development milestones) were added to the CHLEW. The protocols for waves 1 and 2 of the study were reviewed and approved by the University of Illinois at Chicago Institutional Review Board.

Study Variables

All the variables in the current study are from wave 1 of the CHLEW study with the exception of age of smoking onset, which was not asked in wave 1.

Perceived health status—A self-rated, 4-point Likert scale (poor, fair, good, and excellent; coded 1–4, respectively) item was used to assess perceived health status. Available research suggests strong, statistically significant, age-adjusted associations between levels of self-reported perceived health and mortality from all causes (Kaplan et al., 1996).

CPA—To assess CPA, respondents were first asked, “When you were growing up, were you physically hurt or injured by your parents or other family members?” Response options ranged from 0 (never) to 5 (very often). Respondents who reported any CPA (rarely, sometimes, often, or very often) were asked a follow-up question regarding their self-perception of CPA (“Do you feel that you were physically hurt or abused by your parents or other family members when you were growing up?”). Responses were dichotomized as 0 (no CPA) or 1 (CPA).

Age of smoking onset—Smoking onset was assessed by asking respondent's age at which she first started smoking fairly regularly. We categorized smoking onset as 10 years or younger, 11 to 12, 13 to 14, 15 to 16, 17 to 18, 19 to 20, and 21 or older.

Current smoking status—Current smoking status was based on responses to the question, “Do you currently smoke cigarettes?” (0 [no]; 1 [yes]).

Sexual identity—Respondents were asked, “How do you define your sexual identity?” with the response options of exclusively lesbian, mostly lesbian, bisexual, mostly heterosexual, exclusively heterosexual, other, or prefer not to answer. All women in the current study identified as exclusively lesbian, mostly lesbian, or bisexual.

Sociodemographic variables—We included four sociodemographic variables (age, race/ethnicity, household income, educational level) known to be associated with health status and cigarette smoking (U.S. Department of Health and Human Services, 2001) as control variables. Race was assessed using standard U.S. Census questions. Given the heterogeneity of women in the “other” race/ethnicity category (e.g., Asian/Pacific Islander, Native American, multiracial; $n = 23$), only women who identified as non-Hispanic White, non-Hispanic Black, or Hispanic/Latina were retained in the analyses. Ordinal variables were created to represent income levels—1 (<\$20,000), 2 (\$20,000–\$39,999), 3 (\$40,000–\$74,999), 4 (≥\$75,000)—and educational levels—1 (high school or less), 2 (some college), 3 (college graduate), or 4 (graduate/professional degree).

Data Analysis

Using M-plus, we conducted path analyses with observed variables to examine the effects of CPA on current health status, and the mediated effects of age of smoking onset and current smoking status on the relationship between CPA and health status. Overall model fit was assessed using the model fit chi square test, root mean squared error of approximation (RMSEA), and comparative fit index (CFI; Jorsekog & Sorbom, 1981; Fan, Thompson & Wang, 1999). We used the mean and variance-adjusted weighted least-squares method, suitable for models that include categorical endogenous variables (Muthén, du Toit, & Spisic, 1997, *Robust inference using weighted least squares and quadratic estimating equations in latent variable modeling with categorical and continuous outcomes, unpublished manuscript*), to estimate the model. Cases with missing data on key variables were excluded from final analyses (<10% of sample).

Results

Sample Characteristics

As shown in Table 1, the average age of the women at baseline was 37.4 years. More than half of the women (55.5%) identified as non-Hispanic White; 25.6% were Black non-Hispanic, and 18.9% were Latina. Comparisons of respondents’ race/ethnicity with 2000 census data indicated that the sample closely reflected the distribution of the population in Cook County, Illinois, where the large majority of CHLEW participants lived (Chicago Fact Finder, 2005). Unlike the general Cook County population, but similar to other lesbian samples, the respondents were well educated overall; 59.7% had a bachelor’s degree or higher. About 24% of the sample had annual household incomes under \$20,000, and one quarter of the respondents had incomes of \$75,000 or more. Slightly more than one fifth of the sample (21.5%) reported a history of CPA and 25% of the sample reported current smoking. Of current smokers, about 48% of respondents started smoking regularly before the age of 21. Nearly 24% of the sample reported that their health was “fair or “poor”; only 28.7% said that their health was excellent.

Associations between CPA, smoking, and health—As overall model fit tests, all three fit statistics indicated an excellent fit. The p -value for the model fit chi-square (2.65, $df = 2$) was .27, and CFI and RMSEA were .99, and .03, respectively. Sexual identity was not

associated with CPA, health status, age of smoking onset, or current smoking status (data not shown). However, socioeconomic factors were associated with outcomes of interest. Higher education was positively associated with perceived health status and age of smoking onset ($\beta = 0.16$ and $\beta = 0.16$, respectively). Higher household incomes were positively associated with current health status ($\beta = 0.14$) and negatively associated with current smoking ($\beta = -0.32$). When relationships were simultaneously estimated, CPA did not have a direct effect on perceived health status, although a borderline relationship ($\beta = -0.09$) was observed. A significant effect of CPA on self-reported health status was found to be mediated both by age of smoking onset and current smoking status. Earlier age of smoking onset increased the likelihood of being a current smoker ($\beta = -0.49$), which in turn had a negative effect on perceived health status ($\beta = -17$; Figure 1).

Discussion

Consistent with the extant literature, the prevalence of CPA in the current study was higher than observed among women in the general population. The long-term health consequences associated with adverse childhood experiences among SMW is one of several unanswered questions in the literature. Previous research among women in the general population has demonstrated a link between childhood abuse and adult health outcomes (Anda et al., 1999; Dube et al., 2010). The self-perceived health status—"fair to good"—was lower than expected given the high levels of education and income of our study participants. Ratings of health status differed based on history of CPA with those participants experiencing reporting lower health rates compared with those without an abuse history. However, differences in health status by abuse history did not attain significance in our sample. Instead, the relationship between CPA and health status was influenced by smoking behaviors. One quarter (25%) of participants reported current smoking. CPA was associated with earlier age of smoking initiation, earlier age of smoking onset increased the likelihood of being a current smoker, and being a current smoker had a negative effect on current health status. Our findings were consistent with those reported by Lehavot and Simoni (2011), with smoking prevalence rates being higher among SMW with a history of CPA. However, these authors did not find that smoking mediated the relationship between CPA and physical health problems. Measurement factors may account for the differing results observed between our study and previous studies. Health status in the Lehavot and Simoni study was assessed using self-reported history of any of seven chronic medical conditions (i.e., arthritis, diabetes, and hypertension) whereas we used a measure of global perceived health status. It may be that a global indicator of perceived health is more sensitive in studies of relatively young samples as was the case for our study (average age, 37.4 years) and the Lehavot and Simoni study (average age, 33.7 years). Future research should collect more systematic measures of health and health status among SMW across the lifespan to better understand the relationships between CPA and health.

Although elevated compared with published data on heterosexual women, rates of CPA in our sample were lower than rates for SMW reported by Austin and colleagues (2008) and Hughes and associates (2010), but higher than Balsam and co-workers (2005) and the same as Stoddard and associates (2009). Variations in reported rates of CPA across study samples are likely, in part, owing to differences in operational definitions of CPA. In general, single questions that assess self-perception of childhood maltreatment—such as the question used to assess CPA in the current study—result in lower estimates (Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011). A recent report by the Institute of Medicine Report on lesbian, gay, bisexual, and transgender health emphasized the need for the inclusion of sexual orientation on national health surveys to more accurately determine prevalence rates for a range of health and life experiences among sexual minorities (Institute of Medicine, 2011). Measures of sexual orientation and gender identity are currently available and others

are being cognitively tested to identify those questions or sets of questions that consistently yield accurate and reliable data on these important demographic items. Given the known disparities, measures of sexual orientation and gender identity should be routinely collected as part of all mental and physical health studies.

Beyond measurement concerns, the typically higher rates of CPA among SMW warrant ongoing research into the causes and consequences of CPA among this subgroup of women (Austin et al., 2008; Balsam et al., 2005). Several explanations for the elevated rates of childhood victimization observed among sexual minorities have been posited. One of these is that sexual minority youth are more likely to be abused as the direct result of homophobia. For example, atypical gender expression causes some youth to be targeted for abuse. Studies have found that girls who grow up to be lesbians are more likely to report cross-sex-typed childhood behavior than heterosexual females (Bailey & Zucker, 1995), and that gender nonconformity has been identified as a strong predictor of lifetime exposure to childhood physical, psychological, and sexual abuse (Roberts, Rosario, Corliss, Koenen, & Austin, 2012). Given the associations between childhood gender atypical behavior or gender nonconformity and a negative parent-child relationships (Alanko et al., 2011), pediatricians, school health providers, and mental health professionals should consider abuse screening for this vulnerable population.

Researchers have also found that that within the same household, gay, lesbian, and bisexual youth are more likely to be abused than their heterosexual siblings (Balsam et al., 2005), that sexual minority youth who disclose their sexual orientation to their families are more likely to report physical and verbal abuse than those who have not disclosed (D'Augelli, Hershberger, & Pilkington, 1998), and youth are more likely to be abused when they self-disclose their sexual orientation at earlier as opposed to older ages (Pilkington & D'Augelli, 1995). Finally, several researchers have suggested that an indirect path related to risk behavior may help to explain elevated rates of CPA rates among sexual minority children. Specifically, sexual minority youth are believed to experience greater psychosocial stressors because of stigma and marginalization based on their minority sexual orientation, and such stressors are believed to lead to greater risk behaviors, including the use of alcohol, cigarettes, and other drugs. Participation in risky behaviors may, in turn, contribute to greater parental abuse. Future research should focus on understanding the mechanisms related to elevated rates of CPA among sexual minority youth and the development of primary (reducing the prevalence of CPA) and secondary prevention (reducing the negative outcomes of CPA) approaches.

In our sample, we observed a nonsignificant trend for lower rated health status for women with a history of CPA. Additional research is needed to better understand the direct mechanisms underlying the negative impact of abuse on health outcomes among SMW. For example, changes in brain neuroregulatory systems are hypothesized to account for the enduring effects of abuse experiences in childhood (Anda et al., 2006; Teicher, 2000; Heim & Nemeroff, 2001). Animal studies have demonstrated that chronic exposure to extreme stressors negatively impacts regions of the brain that are responsible for memory and learning (Gould & Tanapat, 1999), affect regulation (Bremner, 2003a), social attachment (Caldji, Francis, Sharma, Plotsky, & Meaney, 2000), and brain development (Gould, McEwen, Tanapat, Galea, & Fuchs, 1997). Studies of adult clinical populations with known trauma have confirmed many of the links between trauma and brain response observed in animal studies (Bremner, 2003b; Carrion et al., 2002; De Bellis & Thomas, 2003). Additional research is needed with SMW to examine the long-term impact of CPA on health status and the pathways contributing to this influence.

Over the past two decades, smoking rates among women have decreased substantially. However, smoking rates among SMW remain elevated compared with those of heterosexual women. Two factors are known to contribute to higher overall prevalence rates among SMW: A greater likelihood of smoking initiation among younger women and a lower likelihood of smoking cessation among adult smokers. This study achieved the goal of identifying smoking as an important mediator of the relationship between negative childhood experiences and adult health status. Smoking as a response to stress is well established in the empirical literature (Cohen, Kamarck, & Mermelstein, 1983). One hypothesis is that SMW may begin smoking as a means of coping with adverse childhood experiences. However, future research is needed to investigate this hypothesis, as well as to identify other mechanisms through which CPA leads to early smoking initiation. In addition, providers and community health agencies should assess for and target physically abused sexual minority youth for smoking prevention interventions with the goal of interrupting the progression from childhood abuse, to engagement in health risk behaviors, and subsequent poor health status.

As we continue to learn more about the role of CPA and other psychosocial risk factors associated with smoking behaviors among SMW, engaging these women in smoking cessation treatments is a priority. Health care providers have been shown to be highly influential in helping to change negative health behaviors, and the clinical encounter represents an important opportunity to assess readiness to quit smoking, provide advice to quit, link individuals with smoking cessation treatment options, and follow-up on patients' success with smoking cessation. Providers, both mental and physical health, can promote these and other effective treatments for tobacco cessation and help to disrupt a key pathway to poor health among SMW with a history of CPA. Organizations that specifically serve the needs of SMW such as the Lesbian Community Care Project in Chicago and the Mautner Foundation in Washington, DC, also play vital roles in providing holistic and culturally competent care aimed at mitigating the negative health consequences of abusive childhood experiences among SMW. Models of supportive care developed in these settings could serve as foundations for best practices and pave the way for more systematic research to be conducted on how best to improve the health and well-being of SMW with childhood abuse histories.

Strengths and Limitations

This study contributes to the literature describing the long-term impact of CPA on health outcomes by examining the links between CPA and health in a subpopulation of women with elevated rates of CPA. Methodologic strengths of the study were a large, diverse, community-based sample not selected on the basis of a health problem or behavior. Recruitment approaches in the CHLEW study were designed to minimize the limitations of convenience sampling strategies. Analyses controlled for a variety of demographic characteristics that might have otherwise confounded the association between sexual identity and health status. However, as with most studies of SMW's health, our sample was selected using nonprobability methods. Although probability samples are preferable, they typically overrepresent White, middle-class lesbians who are comfortable disclosing their sexual orientation. Future studies should replicate the study findings using a combination of probability and convenience samples inclusive of SMW from diverse backgrounds. Another limitation was our reliance on retrospective reporting of CPA, which is affected by memory and willingness to report sensitive data (Johnson & Richter, 2004). As such, we cannot rule out memory as a potential source of bias in our study. In addition, although we relied on self-reports for smoking status, self-report has been established as a fairly reliable indicator of smoking status (Ferraro & Su, 2000; Patrick et al., 1994). Although biochemical verification (i.e., measurement of cotinine levels) of smoking status is the gold standard in

tobacco research, it is prohibitive in most behavioral studies. However, underestimation of smoking prevalence rates based on self-report has been shown to be minimal in U.S. study samples (0.6%; West, Zatonski, Przewozniak, & Jarvis, 2007).

Conclusion

Research aimed at understanding the individual and contextual determinants of poor health outcomes among vulnerable populations is vitally important (U.S. Department of Health and Human Services, 2011). Our study results provide a unique contribution to the literature by identifying an important pathway by which CPA negatively impacts the health of SMW. The results from this study have direct implications for both research and practice. Additional research is needed to examine factors that are associated with elevated risk for CPA among sexual minority youth to inform interventions to prevent and or to mitigate the detrimental impact of abuse in this population group. Further, educators, health care providers, and social service providers working with youth should be aware of the additional risk for physical abuse among sexual minority youth and provide culturally competent services to these individuals and their family members. Finally, providers working with adult SMW should carefully assess for histories of CPA and where present, address these abuse histories as part of comprehensive care.

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Figure 1.

A path model of childhood physical abuse and health status ($n = 328$). Model $\chi^2 = 2.65$ ($df = 2$) $p = .27$. CFI = .99; RMSEA = .03. Note: Statistically not significant paths ($p > .10$) are not presented. Standardized coefficients with nondirectional p -values are presented: $^{\dagger}p < .1$; $*p < .05$; $**p < .01$; $***p < .001$.

Table 1Descriptive Statistics ($n = 328$)

	<i>n</i>	% or Mean (SD)
Health status		
Poor	26	7.9%
Fair	54	16.5%
Good	154	47.0%
Excellent	94	28.7%
Age	328	37.4 (12.0)
Race/ethnicity		
Black	84	25.6%
Hispanic	62	18.9%
White	182	55.5%
Sexual identity		
Lesbian	230	70.1%
Mostly lesbian	88	26.8%
Bisexual	10	3.1%
Education		
High school or less	36	11.0%
Some college	96	29.3%
Bachelor's degree	86	26.2%
Graduate/professional degree	110	33.5%
Income (US\$)		
<19,999	78	23.8%
20,000–39,999	77	23.5%
40,000–74,999	90	27.4%
75,000	83	25.3%
Childhood experience of physical abuse	71	21.5%
Age of smoking onset (yrs)		
10	5	1.5%
11–12	12	3.7%
13–14	21	6.4%
15–16	46	14.0%
17–18	42	12.8%
19–20	29	8.8%
21	173	52.7%
Current smoker	82	25.0%