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# Associations Between Childhood Victimization, Adult Victimization, and Physical Health Among Sexually Diverse Adults at Different Stages of Life

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## Abstract

**Purpose:** Research examining health disparities in sexually diverse populations is quite variable. The purpose of the present article was to shed light on the conflicting findings pertaining to minority stress and health by examining the potential impact of age, childhood victimization, and different measurements of health.

**Methods:** The present research used data from the Generations Study, a questionnaire study of sexually diverse adults (ages 18–60) surveyed between 2016 and 2019. We modeled direct and indirect links among (1) childhood exposure to physical or sexual abuse, (2) adult exposure to victimization or harassment, and (3) adult physical health status, assessed both subjectively and objectively. Participants were 1398 sexually diverse adults (e.g., lesbian, gay, bisexual); the present work only utilizes wave one of the data collected in 2016.

**Results:** We found that both childhood abuse and adult harassment/victimization predicted sexually diverse adults' health status, but these associations only manifested as diagnosable disease outcomes among adults over 50. Associations between childhood abuse and adult health were partly attributable to the fact that abuse-exposed children were disproportionately exposed to harassment and victimization as adults.

**Conclusion:** Our research makes a novel contribution to our understanding of the health effects of stigma by pinpointing the multiple, cascading pathways through which adversity relates to health.

**Keywords:** adult victimization, childhood victimization, objective health, subjective health

## Introduction

A GROWING BODY of research has documented significant physical health disparities affecting sexually diverse individuals (i.e., those who are not exclusively heterosexual). Sexually diverse adults show disproportionately high rates of heart disease, hypertension, elevated cholesterol, asthma, arthritis, and functional disability, however, many of these findings are variable and require further investigation.<sup>1</sup> Because of these disparities and inconsistencies in the findings, numerous medical organizations have called for greater research on the underlying causes of these health disparities.<sup>2–5</sup> *Stigma-related stress* is thought to be one of these causes. Meyer's "minority stress" model,<sup>6</sup> posits that cumulative psychological stress caused by social marginali-

zation, harassment, and everyday discrimination takes a toll on sexually diverse individuals' physical and mental health.

Studies linking "minority stress" exposure to physical health outcomes have yielded mixed findings.<sup>7</sup> What accounts for this variability? One possibility is that few of the larger studies outlining these disparities consider the influence of *childhood* stress exposure, which is known to negatively impact health across populations.<sup>1</sup> Furthermore, population studies show that ~30% of sexually diverse adults report childhood or adolescent maltreatment<sup>1</sup> and previous research suggests that some of the health disparities observed in sexually diverse adults are attributable to childhood stress exposure.<sup>8</sup> Therefore, to fully understand the ways in which health disparities manifest in sexually diverse populations a consideration of early adversity exposure is critical.

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Another possibility concerns variability in the measurement of health, which is sometimes operationalized as disease burden and sometimes operationalized as subjective perceptions. Because there is a lack of consistency across studies in how to measure health, it is not surprising that the findings are inconsistent given that the experiences of minority stress are unlikely to affect all mental and physical health problems equally.

It is important that future work in this area clearly articulates what their measurement of health is and to measure physical health and mental health independently of one another. The present research addresses both of these possibilities, using a large national sample of sexually diverse adults, and seeks to disentangle the processes through which different types of adversity, experienced at different stages of life, contribute to sexual minority health disparities.

### *Lifespan approaches to adversity and health*

Lifespan approaches to adversity and health have identified several mechanisms through which adversity relates to health: *Cumulative stress* processes are those involving the progressive dysregulating effects of repeated and cumulative activation of biological stress–response systems.<sup>9,10</sup> *Biological embedding* refers to the enduring, “programming” effects of early experiences on brain development, such that childhood adversity may shape longer-term patterns of biological stress responsivity in a manner that might augment health risks in later life.<sup>11–15</sup> *Sensitization* approaches extend the biological embedding approach to suggest that some of the “programming” effects of childhood adversity may actually magnify an individual’s psychological and biological reactivity to adult adversity. Hence, everyday stressors may provoke stronger responses, and have more negative long-term health effects, among individuals who had high levels of childhood stress.<sup>16–18</sup>

*Cascade* approaches focus on childhood experiences as well, but they also emphasize the developmental relationship between childhood and adult adversity, and the multiple mechanisms through which victimized children may be exposed to revictimization as adults.<sup>19–21</sup> A major strength of the cascade model is that it takes into account the fact that childhood and adult victimization are not independent events. Many of the environmental conditions that increase a youth’s risks for victimization remain stable into adulthood, increasing the likelihood of revictimization. In addition, numerous *within-person* processes may increase individuals’ vulnerability to revictimization, such as stress-related changes in cognitive, affective, and behavioral functioning that alter the likelihood of developing nurturant versus violent social ties in adulthood.<sup>22–26</sup> In essence, cascade approaches consider adult victimization to be one of the potential *outcomes* of childhood victimization, and hence we cannot understand the long-term health risks of childhood maltreatment without taking into account its covariation with adult maltreatment, which has its own suite of health consequences.<sup>27</sup>

Revictimization is a common phenomenon among adversity-exposed youth, and it has been attributed to multiple mechanisms. For example, many of the family and community conditions which increase a child’s vulnerability to adversity (low parental monitoring, low access to social sup-

port, isolation, economic stress, etc.) remain stable over time, potentially maintaining an individual’s vulnerability to harm throughout adulthood. In addition, studies show that maltreated children often show alterations in cognitive, affective, and behavioral functioning (such as more fearful appraisals of social cues and more hostile responses to interpersonal conflict), which may increase their vulnerability to the anger and aggression of others.<sup>27–31</sup> Clearly, we cannot understand the sources of health disparities in sexually diverse populations without modeling the health consequences of childhood *and* adult victimization as distinct but nonindependent phenomena.

In addition, we need more specificity in our definitions of “health effects.” Some studies focus on individuals’ self-reported perceptions of wellbeing (e.g., how often they feel under the weather, how many days a month they fell ill, how often they are troubled by different symptoms),<sup>32</sup> whereas others focus on the presence or absence of acute or chronic conditions, functioning limitations, and mental health difficulties.<sup>33</sup> While the presence of chronic or acute illness is clearly a strong predictor of mortality, past research shows that subjective health is also a strong predictor of future health and mortality.<sup>34–36</sup> Although both subjective health and objective health independently predict survival and mortality later in life, research has found inconsistent associations *between* them.<sup>37–39</sup> These inconsistent findings might reflect the influences of unmeasured third variables, such as age and early adversity.

Although we might presume that age has parallel influences on subjective and objective health, self-report *measures* of subjective versus objective health show different patterns of association with age, potentially reflecting the differential salience of self-perceived physical status versus diagnosable conditions at different life stages and over different stretches of time.<sup>40</sup> Many health conditions may affect an individual’s day-to-day subjective wellness long before they progress to the level of diagnosable disease; hence, for younger individuals, variation in health status might be better captured by subjective reports than by objective disease burden. Individuals’ social contexts may also play a role: Subjective health reports in older adults might be influenced by their expectations regarding age-related health declines, and the degree to which they are able to compare themselves favorably to their age mates.<sup>41,42</sup>

Collectively, these findings indicate that subjective and objective indices of health are overlapping but distinct phenomena, with potentially different drivers for individuals at different stages of life. Accordingly, studies seeking to model links among adversity, victimization, and health should treat subjective and objective health as two distinct outcomes, instead of two different measures of the same latent construct. This approach is better suited to disentangling associations between adversity and wellbeing at different life stages, especially given that the cognitive/affective, biological, and behavioral sequelae of victimization *and* revictimization may unfold at different rates and over many years.<sup>43,44</sup>

Associations between adversity and health over time are further complicated by the *intersections* between different social identities and social positions (i.e., age, gender, race/ethnicity, socioeconomic status, sexual orientation, race), which may shape both the likelihood of victimization

at different stages of life and the impact of victimization on health-relevant processes. Extensive work shows that although different forms of social marginalization have different manifestations and are associated with different social experiences,<sup>45</sup> some theoretical work suggests that intersecting forms of marginalization can dramatically reduce individuals' opportunities for social safety and support, potentially magnifying their health risks,<sup>1</sup> while also constraining their access to health care and health insurance.<sup>46</sup> Accordingly, our analytical plan is designed to test for independent effects of race/ethnicity as well as moderating effects.

To summarize, the current study tests *direct and indirect* links among (1) recollected exposure to physical or sexual maltreatment in childhood or adolescence, (2) recollected exposure to physical or emotional victimization in adulthood, (3) current self-reported objective health (i.e., total disease burden), and (4) current subjective physical health (feelings of wellness, recollected sick days, etc.). We test the following hypotheses:

- H1: Sexually diverse individuals who were physically or sexually abused as children will report higher rates of adult victimization (in the form of harassment, bullying, physical violence, sexual violence, verbal threats, and property damage). This prediction is consistent with previous research on revictimization in sexually diverse populations but includes a broader range of victimization experiences, such as verbal threats, harassment, and property damage.<sup>30</sup>
- H2: Sexually diverse individuals who were physically or sexually abused as children will have poorer physical health outcomes, independent of their exposure to adult victimization. This prediction is consistent with both *cumulative stress* and *biological embedding* models of childhood adversity. Cumulative stress models suggest that all victimization experiences contribute incrementally to long-term health risks, and biological embedding approaches suggest that childhood victimization is particularly influential. Unique health consequences of childhood adversity are well documented.
- H3: Sexually diverse individuals who were victimized as *adults* will have poorer physical health outcomes, independent of their exposure to childhood abuse. This prediction is based on *cumulative stress* models of adversity, which underlie the minority stress model of health disparities in sexually diverse populations.<sup>7</sup> This model argues that cumulative exposures to psychological stress repeatedly activate the body's stress-response systems regardless of when they occur.<sup>47</sup>
- H4. In addition to any direct effects of childhood abuse on adult health (modeled in H2), will be *indirect* effects of childhood abuse on adult health that operate through adult revictimization. In essence, some of the linkage between childhood victimization and adult health status (modeled in H1) is attributable to the fact that childhood victimization amplifies individuals' likelihood of adult victimization.

## Methods

### Participants and recruitment

We used data from the publicly available Generations study, a comprehensive assessment of the health and well-being of 1520 sexually diverse adults between 18 and 60 years of age,<sup>48</sup> collected between 2016 and 2019. For our an-

TABLE 1. DEMOGRAPHIC VARIABLES FOR THE FULL SAMPLE

Variable	N (%)
Gender identity	
Woman	735 (52.6)
Man	663 (47.4)
Sexual orientation	
Lesbian	283 (20.2)
Gay	521 (37.3)
Bisexual	470 (33.6)
Queer	62 (4.4)
Same-gender loving	20 (1.4)
Other	42 (3.0)
Race	
Asian	4 (0.3)
Black/African American	166 (11.9)
Hispanic/Latino	149 (10.7)
Middle Eastern	1 (0.07)
Native Hawaiian/Pacific Islander	1 (0.07)
White	866 (61.9)
American Indian	3 (0.2)
Other	208 (14.9)

alyses, we excluded participants who were gender diverse,\* leaving a final sample size of 1398 (Lesbian = 20.2%, Gay = 37.3%, Bisexual = 33.6%, Queer = 4.4%, Same gender loving = 1.4%, Other = 3.0%). A particular strength of the Generations dataset is the inclusion of multiple age cohorts of sexually diverse individuals: The youngest cohort ( $N=599$ ) ranges in age from 18 to 26, the middle cohort ( $N=348$ ) ranges from 32 to 43, and the oldest cohort ( $N=451$ ) ranges from 50 to 60 (see Table 1 for full sample demographics).

Participants were given a 25\$ gift card for participation. Due to this article being a secondary data analysis, institutional review board (IRB) review was not needed. The Generations study was approved by the IRB across study institutions. Full information and data are available to the public through Inter-University Consortium for Political and Social Research Data Sharing for Demographic Research.

### Measures

**Sexual abuse.** Sexual abuse was measured using three items from the Adverse Childhood Experiences questionnaire asking participants how often anyone at least 5 years older than them had (1) touched them sexually, (2) tried to make them touch the older person sexually, and (3) forced them to have sex before the age of 18 (0 = never, 1 = once, 2 = more than once). To create a composite measure, we first dichotomized each of the questions, where 0 = no experience of sexual abuse, and 1 = one or more experiences of

\*Given recent work showing that gender diverse individuals (those who identify as transgender, gender queer, gender non-conforming, agender and two spirit) report disproportionately high rates of negative physical and mental health outcomes, coupled with the small proportion of gender diverse participants in the present sample, we excluded them from the current analysis. Future work aimed at examining health disparities across subpopulations within the broader sexual and gender diverse (SGD) community should specifically study how these processes differ for cisgender and gender diverse SGD individuals.

sexual abuse. We then took the sum of the dichotomized sexual abuse items to create a final index of sexual abuse, ranging from 0 to 3.

**Nonsexual abuse.** Nonsexual abuse was measured using three items from the Adverse Childhood Experiences questionnaire asking participants how often their parents (1) fought physically, (2) hurt them in any way physically, and (3) insulted or swore at them before age 18 (0=never, 1=once, and 2=more than once). Our composite measure of nonsexual abuse used the same method as the sexual abuse measure, resulting in a scale of 0–3.

**Victimization.** We measured adult victimization using a 5-item questionnaire<sup>49</sup> that assesses how many times participants had experienced various acts of adult victimization, including being threatened, verbally insulted, robbed, and physically attacked between the age of 18 and the time of filling out the survey (e.g., 1 = 0 times, 4 = three or more times). We averaged the five items to create a composite measure of victimization.

**Subjective health problems.** Our subjective health measure had two components measuring health-related quality of life. The first component asked participants how many of the last 30 days their (1) physical and (2) mental health had not been good.<sup>50</sup> Responses ranged from 0 to 30 and were averaged between the two questions, then standardized. The second component was a single item, which read “Would you say that in general your health is ...” with response options from 1 (poor) to 5 (excellent). This item was reverse coded and standardized so that higher scores indicated worse health. The two components had a correlation of 0.53 ( $p < 0.001$ ), thus we averaged them together to create a final measure of subjective health problems.

**Objective health problems.** Participants filled out a checklist indicating if they had ever been diagnosed with any of 23 health conditions at any point in their life. We computed a score of objective health problems by taking a subset of 18 of those conditions and calculating a sum of items that they checked off (i.e., 0=no health problems, 1=1 condition, etc.). Our measure included the following conditions: hypertension, high cholesterol, heart disease, heart attack, stroke, emphysema, asthma, ulcer, diabetes, impaired fasting glucose/high blood sugar, arthritis, blood clots in legs or lungs, osteoporosis or loss of bone density, thyroid problems, liver disease, chronic obstructive pulmonary disorder, Crohn’s disease or ulcerative colitis, and kidney disease.

**Race.** Race was included in our models as a binary variable, where 0=White/Caucasian and 1=Non-White.

#### Data analysis

We used a series of structural equation models to test our hypotheses. All models were run separately for older (over 50 years of age) versus younger cohorts (between 18 and 43 years of age). In each model, we allowed for both direct and indirect paths between childhood victimization and adult health (subjective health status and physical health problems), specifying adult victimization as a potential me-

diating factor. Finally, we corrected for multiple tests using the Benjamin–Hochberg procedure, specifying a false discovery rate of 5%. Models were fit using maximum likelihood and fit for both models was excellent [Younger cohort:  $\chi^2(2)=0.19$ ,  $p=0.91$ , comparative fit index (CFI)=1.00, Tucker–Lewis index (TLI)=1.037, root mean square error approximation (RMSEA)=0.0, standardized root mean square residual (SRMR)=0.003; Older cohort:  $\chi^2(2)=1.13$ ,  $p=0.57$ , CFI=1.00, TLI=1.032, RMSEA=0.0, SRMR=0.013].

## Results

### Descriptive statistics

For full descriptive statistics of all study variables, see Table 1. Approximately 33% of participants reported at least one type of sexual abuse and ~60% reported at least one type of nonsexual abuse during childhood (Table 2). In addition, the mean ( $M$ ) for victimization was 1.96 (range: 1–4) with a standard deviation ( $SD$ ) of 0.81. Finally, ~57% of participants reported at least one health problem ( $M=1.17$ ,  $SD=0.48$ ). Full results for each model are reported in Tables 3 and 4.

### Hypothesis 1: revictimization

Consistent with the literature on revictimization, adults in our sample who reported being physically or sexually abused as children also reported disproportionately high levels of adult victimization (i.e., both nonsexual and sexual abuse were associated with higher levels of victimization in the younger cohort; sexual abuse:  $\beta=0.19$ ,  $p < 0.001$ ; nonsexual abuse:  $\beta=0.35$ ,  $p < 0.001$ ) and the older cohort (sexual abuse:  $\beta=0.20$ ,  $p=0.001$ ; nonsexual abuse:  $\beta=0.21$ ,  $p < 0.001$ ). We also included race as a predictor of adult victimization in both models. Although race was not a significant predictor for the older cohort ( $\beta=-0.00$ ,  $p=0.99$ ), it was a significant predictor of adult victimization for the younger cohort ( $\beta=-0.13$ ,  $p < 0.001$ ) suggesting that White individuals in the sample report greater rates of adult victimization than participants of color.

### Hypothesis 2: direct effects of childhood abuse

**Younger cohort.** Neither sexual nor nonsexual abuse was related to objective health problems among the younger adults in our sample, after controlling for adult exposure to victimization (sexual abuse:  $\beta=0.02$ ,  $p=0.71$ ; nonsexual abuse:  $\beta=0.07$ ,  $p=0.13$ ). However, there was a significant

TABLE 2. DESCRIPTIVE STATISTICS FOR ALL STUDY VARIABLES

Variable	Mean	SD	Minimum	Maximum	N
Sexual abuse	0.78	1.15	0	3	1285
Nonsexual abuse	1.34	1.12	0	3	1206
Victimization	1.96	0.81	1	4	1392
Objective health problems	1.17	1.48	0	10	1398
Subjective health problems	-0.05	0.86	-1.59	2.7	1389

*SD*, standard deviation.

TABLE 3. PATH ESTIMATES FOR THE YOUNGER COHORT MODEL

<i>Outcome</i>	<i>Predictor</i>	<i>Standardized direct effect (path)</i>	<i>Standard error</i>	<i>p</i>	<i>Standardized indirect effect (path)</i>	<i>Standard error</i>	<i>p</i>
Victimization	Sexual abuse	(a) 0.19	0.03	<0.001			
	Nonsexual abuse	(f) 0.35	0.03	<0.001			
	Race	-0.13	0.05	<0.001			
Objective health problems	Victimization	(e) 0.12	0.06	0.004			
	Sexual abuse	(g) 0.02	0.04	0.71	(ae) 0.02	0.01	0.02
	Nonsexual abuse	(d) 0.07	0.04	0.13	(fe) 0.04	0.01	0.005
Subjective health problems	Victimization	(b) 0.19	0.04	<0.001			
	Sexual abuse	(h) 0.07	0.03	0.10	(ab) 0.04	0.01	0.002
	Nonsexual abuse	(c) 0.14	0.03	<0.001	(fb) 0.07	0.01	<0.001

direct effect of nonsexual abuse (but not sexual abuse) on subjective health (sexual abuse:  $\beta=0.07$ ,  $p=0.10$ ; nonsexual abuse:  $\beta=0.14$ ,  $p<0.001$ ).

**Older cohort.** There was a significant direct effect of nonsexual abuse on objective health problems for older adults ( $\beta=0.14$ ,  $p=0.01$ ), indicating that older adults with greater exposure to nonsexual childhood abuse reported more objective health problems, independent of adult victimization. However, there was no direct effect of sexual abuse on objective health problems ( $\beta=0.08$ ,  $p=0.16$ ), and no direct effects of sexual or nonsexual abuse on subjective health problems (sexual abuse:  $\beta=0.08$ ,  $p=0.17$ ; nonsexual abuse:  $\beta=0.07$ ,  $p=0.20$ ).

#### *Hypothesis 3: direct effects of adult victimization*

**Younger cohort.** We found significant direct effects of adult victimization on both subjective and objective health problems; specifically, individuals reporting higher adult victimization reported greater objective and subjective health problems ( $\beta_{\text{objective}}=0.12$ ,  $p=0.004$ ,  $\beta_{\text{subjective}}=0.19$ ,  $p<0.001$ ).

**Older cohort.** We found significant direct effects of adult victimization on both subjective and objective health problems; specifically, individuals reporting higher adult victimization reported greater objective and subjective health problems ( $\beta_{\text{objective}}=0.14$ ,  $p=0.02$ ,  $\beta_{\text{subjective}}=0.23$ ,  $p<0.001$ ).

#### *Hypothesis 4: indirect effects of childhood abuse, through the pathway of adult revictimization*

**Younger cohort.** We found significant indirect effects of both sexual and nonsexual abuse on both objective health (sexual abuse:  $\beta=0.02$ ,  $p=0.02$ ; nonsexual abuse:  $\beta=0.04$ ,  $p=0.005$ ) and subjective health (sexual abuse:  $\beta=0.04$ ,  $p=0.002$ ; nonsexual abuse:  $\beta=0.07$ ,  $p<0.001$ ). Hence, childhood sexual and nonsexual abuse increases younger individuals' risks for subjective and objective health problems through the pathway of adult revictimization.

**Older cohort.** We found significant indirect effects of both sexual and nonsexual abuse on subjective health (sexual abuse:  $\beta=0.05$ ,  $p=0.01$ ; nonsexual abuse:  $\beta=0.05$ ,  $p=0.004$ ), but not objective health (the indirect pathways for objective health were statistically significant, but they did not remain so after correcting for multiple tests).

TABLE 4. PATH ESTIMATES FOR THE OLDER COHORT MODEL

<i>Outcome</i>	<i>Predictor</i>	<i>Standardized direct effect (path)</i>	<i>Standard error</i>	<i>p</i>	<i>Standardized indirect effect (path)</i>	<i>Standard error</i>	<i>p</i>
Victimization	Sexual abuse	(a) 0.20	0.04	0.001			
	Nonsexual abuse	(f) 0.21	0.04	<0.001			
	Race	0.00	0.10	0.99			
Objective health problems	Victimization	(e) 0.14	0.12	0.02			
	Sexual abuse	(g) 0.08	0.08	0.16	(ae) 0.03	0.04	0.042
	Nonsexual abuse	(d) 0.14	0.18	0.01	(fe) 0.03	0.04	0.047
Subjective health problems	Victimization	(b) 0.23	0.06	<0.001			
	Sexual abuse	(h) 0.08	0.05	0.17	(ab) 0.05	0.04	0.01
	Nonsexual abuse	(c) 0.07	0.05	0.20	(fb) 0.05	0.04	0.004

Hence, as with the younger cohort, childhood abuse increases older adults' subjective health problems through the pathway of adult revictimization.

## Discussion

The present research advances our understanding of physical health disparities in sexually marginalized individuals by showing both direct paths and indirect paths from recollected childhood maltreatment to adult subjective and objective health, and showing that these patterns differ for older versus younger individuals. Our findings support cascade models of adversity and health by showing that adult revictimization is one of the pathways through which childhood victimization relates to adult health among sexually diverse individuals.

Participants with histories of childhood victimization were disproportionately likely to report adult victimization, and these *adult* experiences of victimization predicted self-reported objective and subjective health. The fact that some of the health consequences of childhood victimization operate *indirectly*, through the pathway of adult revictimization, has important implications for intervention, as it suggests that identifying individuals at risk for revictimization may be an underutilized strategy for promoting the health of sexually diverse adults who have experienced childhood adversity.

Another important finding of this research concerns the differences between the predictive pathways for younger (under 50) versus older (over 50) adults, particularly regarding objective disease burden versus subjective assessments of health status. All of the diagnosable health problems assessed in the Generations project are exacerbated by the normative declines of aging (cardiovascular disease, stroke, elevated cholesterol, etc.) and also take considerable time to develop. Accordingly, variation in objective health problems may prove a less reliable index of health status for younger than older adults. This may help to explain why recollected childhood victimization showed direct associations with objective health problems only in respondents with older and more vulnerable bodies.

We do not interpret this finding to suggest that childhood victimization is unrelated to objective health conditions in younger individuals, but that their effects might not manifest as diagnosable disease until later in life. This suggests that by using health assessments that include sensitive, predisease markers of health risk, future research will be better able to identify the sexually diverse individuals at greatest risk for adversity-related health problems later in life and develop targeted interventions.

For younger adults, histories of childhood victimization were more strongly associated with subjective self-reported health status than objective health problems. On one hand, this might lead us to predict that the health effects of childhood victimization will *eventually* manifest as objective health problems once the same respondents grow a little older. Yet if this were the case, we would expect that childhood victimization would predict *both* subjective and objective health in older adults, whereas we found that only the latter effect (on objective health) was observed for older adults. This may reflect the fact (noted earlier) that subjective health status may have a different meaning for older and

younger adults; given that most older adults expect to have some degree of health decline as they age, they may have different thresholds for appraising and evaluating their health than do younger adults, and their subjective appraisals may be affected by their reference group.<sup>41,42</sup>

Such findings underscore the value of assessing both subjective and objective health in studies of the health consequences of social marginalization: These two outcomes may have a different meaning for individuals at different stages of life course development. Specifically, assessments of subjective health may prove more closely linked to mental health problems (such as anxiety and depression), which may influence participant's perceptions and appraisals of health status. Extensive research has shown that individuals exposed to childhood victimization show elevated mental health problems,<sup>51</sup> which may amplify subjective awareness of physical health problems. This may prove less influential for older adults given that older individuals generally appraise their mental health more positively.<sup>52</sup>

A key finding of the present research is that childhood victimization has *indirect* links with adult health through the pathway of adult revictimization (i.e., adult experiences of victimization and harassment that occur among individuals who were also exposed to maltreatment as children). There has been less empirical attention to the health consequences of adult revictimization among sexually diverse individuals than heterosexual individuals, but a growing body of research suggests that revictimization may be an important contributor to health disparities in sexually diverse individuals.<sup>30,53–55</sup> Our findings support this view. The fact that some of the health effects of childhood victimization could be attributed to adult experiences of victimization and harassment shows that we need to view the health consequences of sexual and social marginalization from a life course perspective, and we must take into account the fact that experiences of adult victimization have their own childhood predictors and precursors.

As noted earlier, many of the environmental conditions (such as neighborhood violence, economic hardship, etc.) that increase a child or adolescent's risks for sexual and non-sexual victimization persist over time, and hence the "effects" of childhood victimization must be understood as effects that include the entire developmental context in which victimization occurs. When an individual's developmental context consistently enhances their vulnerability to harm, health problems may be particularly likely to develop over time. Further research should investigate these processes more rigorously, perhaps by establishing links between the types of contexts in which sexually diverse individuals are most likely to be exposed to childhood versus adult victimization.

We must also devote attention to the cascading psychological and behavioral correlates of childhood victimization, which may increase sexually diverse individuals' risks for adult revictimization, such as stress-related changes in cognitive, affective, and behavioral functioning that alter individuals' access to supportive versus exploitive social ties<sup>22–26</sup> and their responses to hostile social encounters.<sup>27–31</sup> Addressing the *entire developmental pathway* from childhood victimization to adult revictimization to adult health is essential to designing effective health-promoting interventions for sexually diverse individuals.

### Limitations

We acknowledge that the study has several limitations. First, the self-report measures used in the present study have well-known limitations. For example, childhood abuse was measured with the Adverse Childhood Experiences scale, which has strong predictive validity for many health outcomes, but relies on a small number of retrospectively reported “yes” or “no” questions to index the complex experience of childhood adversity. Similarly, “yes/no” measures of disease burden fail to represent the fact that some individuals may experience more severe levels of some conditions than others, and in the present study we cannot confirm the existence of severity of specific conditions. Furthermore, the present article only examined cisgender sexually diverse individuals and excluded gender-diverse adults from our examination. As reviewed elsewhere,<sup>47</sup> gender-diverse individuals show increased risks for experiencing childhood victimization, adult victimization, and poor health when compared with cisgender individuals, and the unique forms of stigma that they experience suggest that they may show different developmental pathways from victimization to health status.<sup>1</sup>

### Conclusion

In summary, our results make a significant contribution to understanding the multiple, cascading pathways through which sexually diverse adults’ exposure to victimization influences their health status, and underscore the value of adopting a lifespan developmental approach to understanding and addressing these processes.

### Authors’ Contributions

J.A.: conceptualization, analysis, writing, and editing. S.A.B.: assisted analysis, writing, editing, and assisted conceptualization. L.M.D.: supervision, assisted analysis, writing, and editing.

### Author Disclosure Statement

All of the authors report no conflicts of interest.

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