



# Sexual Self-Concept After Child Maltreatment: The Role of Resilient Coping and Sexual Experience Among U.S. Young Adults

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## Abstract

Evidence supports sexual experience as normative and health-promoting for many, but this picture is less clear for people with histories of adversity. Amazon Mechanical Turk (MTurk) was used to garner data from a sample of 362 young adults (aged 18–25) wherein 44.5% ( $n = 161$ ) identified as women. We assessed longitudinal associations between child maltreatment and sexual self-concept, as mediated by sexual behaviors and sexual partners, and whether resilient coping moderated these associations using structural equation modeling. Although both child maltreatment and resilient coping were directly associated with aspects of sexual experience, only resilient coping was directly associated with sexual self-concept. In addition, we found support for sexual experience as a mediator between child maltreatment/resilient coping and sexual self-concept. Specifically, cumulative maltreatment was associated with more sexual partners, which was associated with higher sexual self-monitoring. Resilient coping was associated with more sexual partners and more sexual behaviors, which was associated with higher sexual self-monitoring and higher sexual self-consciousness, sexual assertiveness, sexual self-esteem, and sexual motivation, respectively. Thus, sexual behaviors and sexual partners operated independently. Findings contrast messaging that sexual experience is universally risky regardless of maltreatment history. Rather, sexual experience may foster positive sexual self-concept for some. Sexual health advocates must attend to differences between sexual behaviors and sexual partners in relation to sexual well-being, and support resilience in the sexual domain.

**Keywords** Sexual self-concept · Child maltreatment · Sexual health · Sexual experience · Resilience

## Introduction

Sexual self-concept is defined as a multidimensional subjective component of a person's sexuality that refers to how one perceives themselves as a sexual person (Birnbaum & Reis, 2006; Breakwell & Millward, 1997; Hensel et al., 2011; Impett & Tolman, 2006; O'Sullivan & Brooks-Gunn, 2005;

Rostosky et al., 2008; Zimmer-Gembeck et al., 2011). It is central to one's overall sense of self and strongly influenced by adolescent and young adult sexual experiences (Harden, 2014; Lacelle et al., 2012; Suleiman et al., 2017; for a review, see Tolman & McClelland, 2011). It is through such "sexual learning" experiences that people develop sexual and relational self-awareness and skills (Crone & Dahl, 2012; Fortenberry, 2014; Suleiman et al., 2017), contributing to their subsequent sexual well-being (Horne & Zimmer-Gembeck, 2005). Sexual self-concept is also forged through nonsexual life experiences. Childhood adversity and trauma (e.g., child maltreatment), for instance, can negatively influence sexual self-concept (Feiring et al., 2009; Finkelhor & Browne, 1985; Lemieux & Byers, 2008; Niehaus et al., 2010; Roemmele & Messman-Moore, 2011) as well as sexual health outcomes, such as adult sexual risk behavior (Wilson & Widom, 2008), number of lifetime sexual partners and unprotected sexual intercourse (Senn & Carey, 2010), and earlier initiation of partnered sexual experiences (Black et al., 2009).

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Fortunately, negative sexual health outcomes for people with histories of child maltreatment are not universal (Fava et al., 2018). Resilient coping is an individual process that facilitates positive adaptation (Sinclar & Wallston, 2004), lowers distress, and buffers the negative impact of child maltreatment on health and well-being (Beutel et al., 2017; Kliem et al., 2015; Wingo et al., 2010). Unfortunately, research to date has not examined sexual experiences as mediators of the association between child maltreatment and sexual self-concept in young adults.

### Sexual Self-Concept and Young Adult Sexual Experiences

Sexual self-concept is one facet of a person's global self-concept and is itself multidimensional. Some specific components of sexual self-concept include sexual anxiety, sexual self-efficacy, sexual self-monitoring, and fear of sex (for complete list of components and their definitions, see Snell et al., 2011). Developing a healthy sexual self-concept is an important part of becoming an autonomous and healthy sexual being (Fortenberry, 2014). As such, sexual self-concept is likely influenced by diverse inputs and experiences, both positive and negative.

National survey research highlights the diversity of young adults' sexual experiences across multiple partners (Herbenick et al., 2010; National Center for Health Statistics, 2017; Twenge et al., 2015). For example, among a national sample of adolescents and adults, solo masturbation (91.8%) and oral sex with a female partner (both receiving [73.5%] and giving [70.9%]) were the most common sexual behaviors for young men, while solo masturbation (76.8%), receiving oral sex from a male partner (79.7%), and vaginal intercourse (85.6%) were the most common sexual behaviors for young women, ages 20–24 (Herbenick et al., 2010). In addition to being common, engaging in sexual behavior is empirically linked to general positive outcomes, such as feelings of happiness (Blanchflower & Oswald, 2004); well-being the next day (Burlinson et al., 2007; Kashdan et al., 2018); enhanced positive mood (Fortenberry et al., 2005); higher levels of self-esteem, increased ability to voice one's opinions in relationships, body self-esteem (Brody et al., 2002; Horne & Zimmer-Gembeck, 2006); and more romantic appeal (Golden et al., 2016). Engaging in sexual behaviors has also been empirically linked to outcomes related to sexual self-concept such as more sexual interest (Fortenberry & Hensel, 2014), more sexual satisfaction (Golden et al., 2016; Impett & Tolman, 2006), and more sexual openness and sexual self-esteem and less sexual anxiety (Hensel et al., 2011). These findings suggest that for many young people, positive sexual self-concept may be cultivated through sexual experience.

Another way to conceptualize sexual experience is in terms of sexual partnerships. While the number of sexual

partners is typically viewed as an epidemiologic risk factor for sexually transmitted infections, there are also potentially positive individual effects of having had more sexual partners, such as sexual satisfaction (Carvalho & Costa, 2015; Pedersen & Blekesaune, 2003). Accordingly, exploring one's sexuality through sexual relationships may not be a negative indicator of sexual health and well-being, rather this may be another way that people come to learn about themselves as sexual beings. Indeed, many scholars now frame adolescent and young adult sexual experiences (both behaviors and partnerships) as learning opportunities that can cultivate well-being (e.g., Fortenberry, 2014; Hensel et al., 2011; Higgins et al., 2011; Lacelle et al., 2012; Pedersen & Blekesaune, 2003; Vasilenko et al., 2014). Fortenberry (2014) draws a comparison between learning to ride a bicycle and sexual learning, with both requiring practice, potential risk, learning from mistakes, and incremental improvements in competence, confidence, and performance.

### Young Adult Sexuality and Child Maltreatment

Outside of sexual experiences, nonsexual life experiences, such as child maltreatment (i.e., sexual, physical, emotional abuse, and/or neglect by a caregiver), can negatively impact a person's sexual self-concept, in addition to their general sense of self-worth, self-concept, and self-esteem (Shen, 2008; Turner et al., 2010; Winstok, 2015). Historically, researchers focused on negative sexual outcomes associated with sexual abuse, a line of research indicating that people who experience sexual abuse may become confused about sexual norms and standards, have distorted views of sexual intimacy (Matorin & Lynn, 1998; Putnam, 2003), develop negative attitudes about their bodies and sexuality (Lemieux & Byers, 2008; Meston et al., 2006; Reissing et al., 2003; Van Bruggen et al., 2006; Wenninger & Heiman, 1998), and incorporate feelings of shame and guilt into their self-image (Feiring et al., 2009; Roemmele & Messman-Moore, 2011). In more recent years, researchers have observed associations between child maltreatment, defined broadly, with negative sexual behavioral outcomes (physical abuse, sexual abuse, and neglect, Wilson & Widom, 2008) and diminished sexual function and sexual satisfaction (physical abuse, emotional abuse, and sexual abuse, Seehuus et al., 2015). For example, Black et al. (2009) examined whether child maltreatment before the age of 12 (i.e., physical, emotional, and sexual abuse, and neglect) predicted sexual intercourse within a sample of adolescents. Indeed, these researchers found that maltreatment, regardless of type, predicted sexual intercourse by age 14 and 16, suggesting that diverse forms of maltreatment may be related to sexual outcomes. Similarly, other researchers have found evidence of positive sexual health among those with maltreatment histories (defined broadly), with physical and emotional abuse being significant

predictors—not sexual abuse—of sexual health trajectories (Fava et al., 2018). Researchers of a more recent study of intimate couple dyads found significant associations between physical, emotional, and sexual abuse as well as physical and emotional neglect with lower sexual function, lower sexual satisfaction, and higher sexual distress (Vaillancourt-Morel et al., 2021). Thus, while there is a robust body of literature demonstrating an association between sexual abuse and negative sexual outcomes, contemporary research does not support this singular association (e.g., Jones et al., 2010; Wilson & Widom, 2008). This line of research is important given how common polyvictimization is (i.e., experience of multiple forms of adversity) and that research consistently finds a graded association between adversity and outcomes—cumulative child maltreatment tends to be more harmful and related to indicators of greater sexual risk than experiencing only one form of maltreatment (e.g., Cicchetti, 2013; Seehuus et al., 2015). Together, these findings illustrate the negative impact that child maltreatment, broadly defined, can have on multiple aspects of sexual well-being.

### Young Adult Sexuality, Child Maltreatment, and Resilient Coping

Resilience is a multilevel process of adaptation in response to adversity (Masten & Monn, 2015; Theron, 2016) shaped by intrapersonal characteristics (e.g., temperament, problem-solving skills, self-efficacy), contextual factors (e.g., social support, belonging to a group), and coping resources employed to modulate adverse experiences (Arditti, 2015; Tippens, 2017). Specifically, resilient coping is a pattern of cognitive and behavioral efforts to manage internal and external demands that is grounded in tenacity, optimism, and active problem solving and that promotes positive growth during and following adversity (Beutel et al., 2017; Sinclair & Wallston, 2004; Walker-Williams & Fouché, 2018). Furthermore, resilient coping supports healthy adaptation among people with histories of maltreatment despite stressful, adverse, or traumatic circumstances (Liu, 2015) and buffers distress (Beutel et al., 2017) and depression (Wingo et al., 2010).

Resilient coping may also influence sexual self-concept (and related constructs) despite experiences of child maltreatment. For example, Fava et al. (2018) used the National Longitudinal Study of Adolescent Health data to create a multidimensional measure of sexual health: relational (e.g., expressing love), psychological (e.g., condom self-efficacy, esteem), and physical (e.g., safe sexual behaviors/choices). Results supported three different developmental trajectories of sexual health: resilient (i.e., stable level of sexual health from early adolescence to young adulthood), survival (i.e., decline in sexual health from over time), and improving (i.e., increases in sexual health from early adolescence into young

adulthood). Individuals in classes characterized by greater sexual health also reported engaging in more sexual behaviors in adolescence than those in the least healthy sexual health class, indicating that not all sexual experience is harmful, and that sexual health and well-being is possible even for those who have experienced maltreatment (Fava et al., 2018). Similarly, Guyon et al. (2020) examined profiles of sexual self-concept among people who had experienced childhood sexual abuse. They also found evidence of three distinct groups: confident and non-preoccupied (i.e., normative sexual self-concept, with fewer negative sexual outcomes), demeaning and depressive (i.e., lowest average score of sexual esteem, and the highest score of sexual depression), and hyperconfident and preoccupied (i.e., highest average score of sexual esteem and sexual preoccupation). The confident and non-preoccupied group, which included the largest number of participants, is comparable to Fava et al.'s (2018) resilient group and resonates with findings from the more general resilience literature wherein health and well-being are possible outcomes despite childhood adversity and trauma (e.g., Bonanno, 2005; Le Brocq et al., 2010).

### Study Overview

Grounded in the developmental frameworks of sexual learning and resilience, six dimensions of sexual self-concept are explored among young adults as a function of child maltreatment and of resilient coping. We hypothesized that (1) child maltreatment would be directly associated with one or more dimensions of sexual self-concept, (2) these associations (if present) would be mediated by one or both measures of sexual experiences (i.e., number of sexual behaviors and number of sexual partners), and (3) mediated associations of child maltreatment and dimensions of sexual self-concept would be moderated by resilient coping. More specifically, we believed that child maltreatment would be associated with more sexual behaviors, which would in turn be related to higher levels of sexual self-concept (both positive and negative), and that child maltreatment would be associated with more sexual partners, which would in turn be associated with higher levels of negative sexual self-concept. Furthermore, we thought that resilient coping would moderate the effect of child maltreatment on sexual self-concept.

## Method

### Participants

The sample for the current study ( $n = 362$  US residents;  $M_{\text{age}} = 22.46$ ,  $SD = 2.08$ , range 18–25 years) came from a study on young adults' sexual histories. Thirteen participants were excluded due to being older than 25 ( $n = 4$ ) or

having missing data on the age variable ( $n = 9$ ). Of the participants, 161 (44.5%) identified as women and 201 (55.5%) as men. Though not a clinical sample, 169 (46.7%) participants reported a history of child maltreatment where psychological abuse was most prevalent (29.3%), followed by emotional neglect (27.6%), physical abuse (20.7%), sexual abuse (11.6%), and physical neglect (10.2%). In terms of racial/ethnic identity, about two-thirds identified as White (246; 68.0%), 54 (14.9%) identified as Asian, South Asian, or Pacific Islander, 25 (6.9%) identified as Latinx, 21 (5.8%) identified as Black/African American, 13 (3.6%) identified as multiracial, two identified as Native American (0.6%), and one identified as Middle Eastern (0.3%). A majority of the sample identified as heterosexual (289; 79.8%), 44 (12.2%) identified as bisexual, 15 (4.1%) as lesbian or gay, seven (1.9%) as questioning, four (1.1%) as asexual, and three (0.8%) as queer. With regard to education, the largest proportion (157; 43.1%) of participants had some college experience but did not have a college degree and 115 (31.8%) had a Bachelor's degree. Forty-four (12.2%) had a high school diploma or GED, and 32 (8.8%) had earned an Associate's degree. Twelve (3.3%) participants had a graduate degree. Two participants (0.6%) had not graduated high school or earned their GED.

## Procedure

The survey data in the current study were components of a larger project by the fourth author via the crowdsourcing labor service, Amazon Mechanical Turk (MTurk; [www.mturk.com](http://www.mturk.com); Bay-Cheng, 2017). MTurk is a platform for advertising various tasks (i.e., human intelligence activities; HITs) that employers (requesters) are looking for workers (Turkers) to complete (for a detailed description of MTurk, see Berinsky et al., 2012; Paolacci & Chandler, 2014). Requesters post notices of HITs, which are only visible to Turkers who meet basic eligibility criteria (e.g., country of residence, MTurk work record). Turkers scan the possible HITs and select any they would like to complete. Their submitted work is then either approved and compensated by the requester or, if unsatisfactory, rejected and the Turker is not paid. MTurk is a convenient and affordable means of data collection, with multiple demonstrations of data quality and credibility of data (Berinsky et al., 2012; Crump et al., 2013; Goodman et al., 2013; Hauser & Schwarz, 2016; McCredie & Morey, 2019), including for studies of sensitive topics (Gryzman, 2015; Schleider & Weisz, 2015).

Inclusion criteria for the larger study required that Turkers have at least a 98% approval rating on past HITs and reside in the US. The initial HIT involved a 5-item screening questionnaire, for which Turkers received \$0.10, to identify prospective participants in the study's intended age range of 18–25. In Fall 2014, a HIT for the survey was created and eligible

prospective participants (602 of 1865 Turkers who completed the screening questionnaire) were invited through the MTurk system to participate. The notice identified the study's focus on sexuality. Of 602 eligible prospective participants, 375 completed the survey, which was hosted on SurveyMonkey and took about 20 min to complete. Participants were paid \$2 through the MTurk system for their participation. Six months later in Spring 2015, the same participants were recontacted through MTurk and invited to complete a follow-up survey: 249 did so (66.4% retention rate) and were paid \$4 for their participation.

## Measures

### Child Maltreatment

An abbreviated version (i.e., 5 yes/no items) of the Adverse Childhood Events Scale (ACES; Felitti et al., 1998) was used to assess child maltreatment experiences consistent with previous research (Bay-Cheng et al., 2021). Each item asked participants whether they had experienced a specific form of neglect or abuse prior to age 18: psychological abuse (e.g., being insulted, belittled, threatened) by a parent or another adult in the household; physical abuse (e.g., being pushed, grabbed, hit resulting in marks or injury) by a parent or other adult in the household; sexual abuse (e.g., being touched, experiencing attempted or performed intercourse) by someone at least five years older; emotional neglect (e.g., feeling unloved, unimportant, unsupported); and physical neglect (e.g., lacking food or clean clothes, parents incapacitated by substance use). *Yes* responses were assigned a value of 1; *No* responses were coded as 0. This measure was administered at baseline. The sum of the five variables served as a cumulative measure of child maltreatment, with scores ranging from 0 (i.e., no experiences of any type of child maltreatment) to 5 (i.e., experienced each type of child maltreatment at least once).

### Resilience

The Brief Resilient Coping Scale (BRCS; Sinclair & Wallston, 2004) measured participants' resilience. The BRCS asks participants to rate four items (e.g., "I believe I can grow in positive ways by dealing with difficult situations") on a 5-point Likert scale ranging from 1 (*doesn't describe me at all*) to 5 (*describes me very well*). This measure was administered at baseline. The four items were summed to create a composite resilience variable, with total scores ranging from 4 to 20, where higher scores indicated more resilient coping. Cronbach's alpha for this scale was 0.71.

## Sexual Behaviors

Participants were asked, “With how many different partners have you had any of the following experiences?” and provided a list of six behaviors: (1) performed oral sex; (2) received oral sex; (3) penetrated someone vaginally (with a part of my body or object); (4) been vaginally penetrated (with a part of someone’s body or object); (5) penetrated someone anally (with a part of my body or object); and (6) been penetrated anally (with a part of someone’s body or object). Participants listed separately the number of men and the number of women with whom they had engaged in each behavior using a scale of 0 (*none*) to 10 (*ten or more*). This measure was administered at baseline. All reported behavior—across acts and partner gender—were summed to create a pseudo-count of sexual experience, with scores theoretically ranging from 0 to 120 sexual acts (i.e., at least 10 experiences of all six behaviors with both men and women partners (Bay-Cheng, 2017)).

## Relationship/Sexual Partners

Participants reported the number of men and, separately, the number of women with whom they had been in any of the following seven types of relationships: casual dating; serious relationship lasting less than a year; serious relationship lasting more than a year; engagement; long-term commitment (e.g., marriage, civil union, domestic partnership); repeated non-romantic sexual encounters with someone (e.g., friends with benefits); and isolated non-romantic sexual encounters (e.g., hook-up). As in the case of sexual behaviors, reports for each relationship type by partner gender were recorded on a scale from 0 (*none*) to 10 (*ten or more*). This measure was administered at baseline. All tallies—across relationship type and partner gender—were summed to create a pseudo-count of relationship sexual experience, with scores theoretically ranging from 0 to 140 partners (i.e., at least 10 experiences of all seven relationship types with both possible partner genders (Bay-Cheng, 2017)).

## Sexual Self-Concept

Six subscales of the Multidimensional Sexual Self-concept Questionnaire (MSSCQ; Snell et al., 1991) were used as indicators of sexual self-concept at the 6-month follow-up: *Sexual Self-consciousness* (The tendency to think and reflect about the nature of one’s own sexuality; e.g., “I am very aware of my sexual feelings and needs”); *Sexual Assertiveness* (The tendency to be highly decisive, self-reliant, and assertive about the sexual aspects of one’s life; e.g., “When it comes to sex, I usually ask for what I want”); *Sexual Self-Monitoring* (The tendency to be aware of the public impression which one’s sexuality makes on others; e.g., “I’m concerned about

how the sexual aspects of my life appear to others”); *Sexual Motivation* (The motivation and desire to be involved in a sexual relationship; e.g., “I’m motivated to devote time and effort to sex”); *Sexual Self-esteem* (A generalized tendency to positively evaluate one’s own capacity to engage in healthy sexual behaviors and to experience one’s sexuality in a satisfying and enjoyable way; e.g., “I feel good about the way I express my own sexual needs and desires”); and *Sexual Depression* (The experience of feelings of sadness, unhappiness, and depression regarding one’s sex life; e.g., “I feel sad when I think about my sexual experiences”). This measure was administered at follow-up, which occurred 6 months after baseline. Each subscale consists of five items measured using a 5-point Likert scale ranging from 1 (*not at all true of me*) to 5 (*very true of me*), where higher subscale scores indicated higher tendencies of each component of sexual self-concept. Sexual self-monitoring and sexual depression are viewed as negative components of sexual self-concept, so higher scores for these subscales are less desirable, whereas the other four subscales are viewed as positive indicators of sexual self-concept, so higher scores for these subscales are desirable and deemed healthy. Cronbach’s alpha for each subscale ranged between 0.75 (Monitoring) and 0.93 (Motivation, Depression). Composite scores for each subscale were created by averaging across items.

## Analysis Strategy

All variables were assessed for missing values using SPSS MVA. Percent missing for model variables ranged from 0 to 2% for baseline measures and from 30.9% to 33.1% for follow-up variables. To reduce bias due to missing values, an auxiliary variable approach was used (Graham, 2009). Variables that were related to missing values were identified using a missing values analysis and included as auxiliary variables using a saturated correlates approach (Graham, 2003); these variables aid in estimation but do not otherwise affect the model results (i.e., they are not serving as covariates). The included auxiliary variables were Conformity to Feminine Norms Inventory total score (CFNI-45; Parent & Moradi, 2010), Conformity to Masculine Norms Inventory total score (CMNI-46; Parent & Moradi, 2011), Investment Model Scale score (IMS; Rusbult et al., 1998), Sexual Relationship Power Scale control subscale at baseline and follow-up (SRPS; Pulerwitz et al., 2000), and Sexual Coercion Scale total score (SCS; Aalsma & Fortenberry, 2010).

Primary analyses were conducted using structural equation modeling (SEM) in Mplus 7.2. Full-information maximum likelihood estimation with robust standard errors (MLR) was used to reduce bias due to missing values and to diminish the impact of any minor violations of normality (in addition to the auxiliary variables described above). Interaction analyses between child maltreatment and resilient coping

**Table 1** Participant characteristics on key study variables

| Participant Characteristics (range) | Total ( <i>n</i> = 362)   | %           |
|-------------------------------------|---------------------------|-------------|
|                                     | <i>Median</i> (IQR)       |             |
| Number of Sexual Behaviors (0–120)  | 8.0 (12.0)                |             |
| Number of Partners (0–140)          | 6.0 (9.0)                 |             |
|                                     | <i>Mean</i> (SD)          |             |
| ACE (0–5)                           | 1.01 (1.31)               |             |
|                                     | Any type                  | 46.7        |
|                                     | Neglect <sup>b</sup>      | 30.1        |
|                                     | Psychological abuse       | 29.3        |
|                                     | Physical abuse            | 20.7        |
|                                     | Sexual abuse              | 11.6        |
| Resilience (4–20) (1–5)             | 13.47 (3.10)              |             |
| MSSCQ Subscales <sup>a</sup> (1–5)  |                           |             |
|                                     | Sexual self-consciousness | 3.57 (.88)  |
|                                     | Sexual self-assertiveness | 3.13 (.99)  |
|                                     | Sexual self-monitoring    | 2.46 (.83)  |
|                                     | Sexual self-esteem        | 3.12 (1.03) |
|                                     | Sexual depression         | 1.96 (1.07) |
|                                     | Sexual motivation         | 3.18 (1.13) |

The significance of italics was to distinguish quantitative scale information from %

Data reflect baseline survey reports unless otherwise noted. IQR = Interquartile range. MSSCQ = Multidimensional Sexual Self-Concept Questionnaire. <sup>a</sup>Administered at 6 month follow-up. <sup>b</sup>Emotional or physical neglect

were calculated as the product of the mean-centered variables of interest. Tests of indirect effects were conducted using the joint significance test, which performs comparably to commonly used approaches such as bootstrapping (MacKinnon et al., 2002); the MLR estimator precluded the use of bootstrapping for indirect effects. The statistical model that was tested assessed how the association between baseline cumulative child maltreatment experience, resilience, and their interaction and follow-up sexual self-concept outcomes was mediated by the number of sexual behaviors and number of sexual relationship partners each participant reported. This model was completely prospective given the nature of the data. All direct paths were also included.<sup>1</sup>

## Results

### Direct Effects

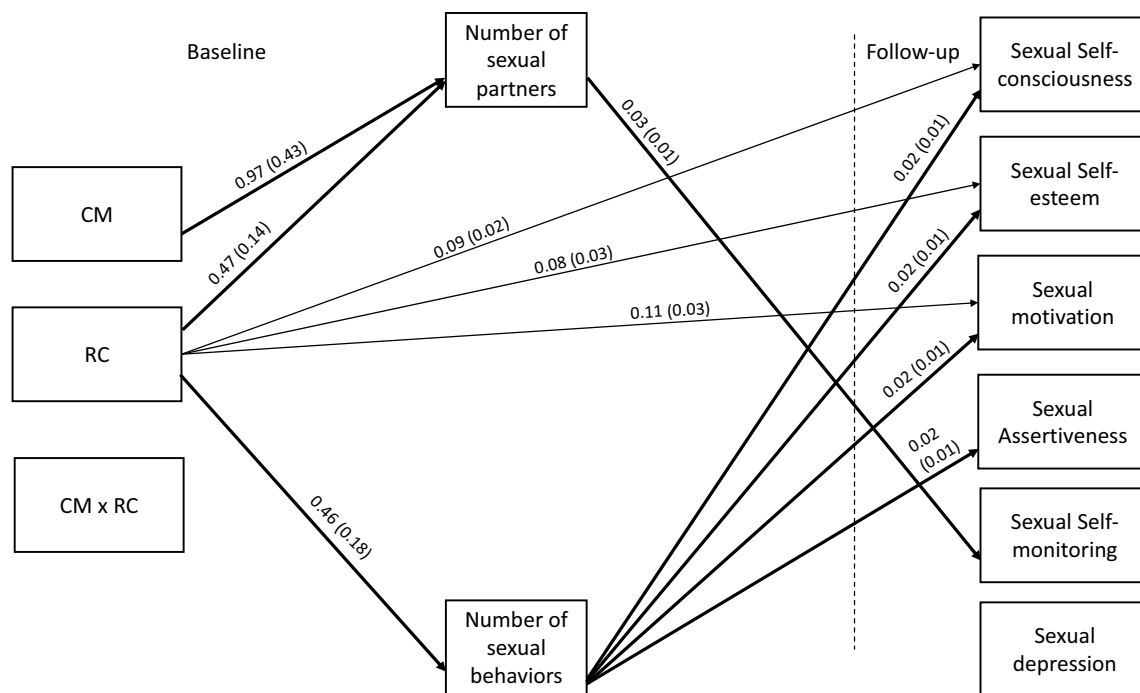
Table 1 presents participant data on key study variables. Tests of model fit (e.g., chi-square, RMSEA, SRMR, and CFI) are not available because this model has 0 degrees of freedom.

<sup>1</sup> Despite no hypotheses about the main effect of resilient coping on outcomes, the main effect was included to correctly estimate the interaction (Cohen et al., 2003).

Unstandardized coefficients for direct effects of child maltreatment and resilient coping are presented in Fig. 1. Since a 1-unit change in a predictor is not always meaningful, partially standardized effect sizes (i.e., the change in outcome for a 1 standard deviation change in the predictor) are noted for all effects. No direct effects were noted for the interaction term of child maltreatment and resilient coping or with the Sexual Depression subscale.

Significant direct effects were noted for child maltreatment and number of sexual partners ( $b = 0.965$ ,  $SE = 0.431$ ,  $p = .025$ , std effect = 1.26). Significant direct effects were noted for resilient coping and number of partners ( $b = 0.469$ ,  $SE = 0.144$ ,  $p = .001$ , std effect = 1.45) and number of sexual behaviors ( $b = 0.459$ ,  $SE = 0.183$ ,  $p = .012$ , std effect = 0.6). These significant associations were all positive in direction, meaning that more child maltreatment experiences and higher levels of resilient coping were associated with more sexual partners and higher levels of resilient coping was associated with more sexual behaviors.

No significant direct effects were found between child maltreatment and any of the six subscales of sexual self-concept. Significant direct effects were noted between resilient coping and three of the six subscales of sexual self-concept: sexual self-consciousness ( $b = 0.086$ ,  $SE = 0.021$ ,  $p < .001$ , std effect = 0.27), sexual self-esteem ( $b = 0.083$ ,  $SE = 0.025$ ,  $p = .001$ , std effect = 0.26), and sexual motivation ( $b = 0.105$ ,  $SE = 0.026$ ,  $p < .001$ , std effect = 0.33). The



**Fig. 1** SEM model of significant paths. Unstandardized path coefficients (standard errors). *CM* child maltreatment, *RC* resilient coping. Non-significant paths and covariates are not depicted in the model. Significant paths are based on  $p < .05$ . Thin black lines indicate significant direct path, and bold lines indicate significant direct path and

mediation. Residual correlation between mediators ( $r = .814$ ) was included in the model but not shown for simplicity. Saturated correlates included to account for missingness are not shown in this figure for simplicity

significant associations between resilient coping and certain sexual self-concept subscales were all positive in direction, meaning that higher levels of resilient coping were associated with more sexual self-consciousness, sexual self-esteem, and sexual motivation.

Significant direct effects were identified between number of sexual partners and sexual self-monitoring ( $b = 0.027$ ,  $SE = 0.008$ ,  $p < .001$ ,  $std\ effect = 0.25$ ), but no other sexual self-concept subscale. This significant association was positive in direction, meaning that having more sexual partners was associated with higher levels of sexual self-monitoring. Significant direct effects were noted between number of sexual behaviors and four of six subscales of sexual self-concept: sexual self-consciousness ( $b = 0.015$ ,  $SE = 0.006$ ,  $p = .011$ ,  $std\ effect = 0.17$ ), sexual self-esteem ( $b = 0.016$ ,  $SE = 0.008$ ,  $p = .034$ ,  $std\ effect = 0.18$ ), sexual motivation ( $b = 0.023$ ,  $SE = 0.008$ ,  $p = .006$ ,  $std\ effect = 0.26$ ), and sexual assertiveness ( $b = 0.019$ ,  $SE = 0.009$ ,  $p = .029$ ,  $std\ effect = 0.22$ ). These significant associations were all positive in direction, meaning that having had more sexual behaviors was associated with higher levels of sexual self-consciousness, sexual self-esteem, sexual motivation, and sexual assertiveness.

In terms of overall prediction, the total  $R^2$  value for number of sexual partners was 0.04 ( $SE = 0.02$ ,  $p = .04$ ) and for number of sexual behaviors was 0.03 ( $SE = 0.02$ ,  $p = .13$ ),

indicating that the set of predictors (i.e., childhood maltreatment, resilient coping, and their interaction) accounted for a small (but significant) amount of variance in the number of sexual partners but not in the number of sexual behaviors. The total  $R^2$  for sexual self-concept outcomes was 0.16 ( $SE = 0.05$ ,  $p < .001$ ) for sexual self-consciousness, 0.09 ( $SE = 0.03$ ,  $p = .004$ ) for sexual self-assertiveness, 0.10 ( $SE = 0.03$ ,  $p = .002$ ) for sexual self-monitoring, 0.18 ( $SE = 0.04$ ,  $p < .001$ ) for sexual self-esteem, 0.02 ( $SE = 0.02$ ,  $p = .22$ ) for sexual depression, and 0.19 ( $SE = 0.04$ ,  $p < .001$ ) for sexual motivation, indicating that the set of predictors (i.e., childhood maltreatment, resilient coping, and their interaction, as well as number of sexual behaviors and number of sexual partners) accounted for a medium to large (and significant) amount of variance in all sexual self-concept outcomes except sexual depression.

## Mediation Analyses

Joint significance tests were used to identify potential mediational pathways between child maltreatment and sexual self-concept subscales and resilient coping and sexual self-concept subscales via sexual experiences (number of sexual partners and number of sexual behaviors; Fig. 1, striped coefficients). Specifically, number of sexual

partners mediated the associations of both child maltreatment (indirect effect = 0.026) and resilient coping (indirect effect = 0.013) with sexual self-monitoring. Number of sexual behaviors mediated the relation between resilient coping and sexual self-consciousness (indirect effect = 0.007), sexual assertiveness (indirect effect = 0.009), sexual self-esteem (indirect effect = 0.007), and sexual motivation (indirect effect = 0.010). In all cases, paths were positive, indicating that increased child maltreatment and/or resilient coping was associated with increased number of sexual behaviors and relationship partners, which was in turn associated with increased scores on measures of sexual self-concept (both positive and negative).

### Post hoc Analyses by Child Maltreatment Type

In contrast to much of the research on child maltreatment and sexual outcomes as well as our first hypothesis, we found no direct associations between cumulative child maltreatment and positive domains of sexual self-concept or sexual self-monitoring. Because others have found associations between distinct types of child maltreatment and sexual outcomes (e.g., Lemieux & Byers, 2008; Senn & Carey, 2010; Wilson & Widom, 2008), we conducted a point-biserial correlational post hoc analysis examining the association between child maltreatment types and sexual self-concept within our sample. In line with other researchers (Zurbriggen et al., 2010) who have found childhood emotional abuse to be the strongest predictor of adolescent sexual outcomes, we also found emotional abuse to be significantly associated with higher sexual self-monitoring (i.e., indicator of negative sexual self-concept; sensitivity to others' perceptions of their sexuality;  $r_{pb} = -0.136, p = .032$ ). In addition, physical abuse was also significantly associated with higher sexual self-monitoring ( $r_{pb} = -0.127, p = .045$ ) and emotional neglect was significantly associated with lower sexual motivation ( $r_{pb} = 0.126, p = .046$ ). We did not, however, find any other statistically significant associations between maltreatment types and sexual self-concept outcomes.

### Discussion

Analyses from this study helped to refine our understanding of the relation between child maltreatment and young adult sexual well-being in a few ways. First, findings indicate that child maltreatment has more of a bearing on sexual self-monitoring than other aspects of sexual self-concept. Second, we observed different patterns of findings for sexual behavior (i.e., positively associated with healthy dimensions of sexual self-concept) and the number of sexual partners (i.e., positively associated with negative dimension of sexual self-concept), suggesting the importance of distinguishing these two

facets of sexual experience despite their relatedness. Third, resilient coping was a robust predictor of sexual experience and diverse domains of sexual self-concept. While the effect sizes from sexual experience (mediator variables) to sexual self-concept subscales (dependent variables) may be considered modest, these are still important and significant given that sexual experience is typically examined in the context of negative outcomes. In addition, the effect sizes found in the current study are similar to previous research considering like associations (e.g., Kotiuga et al., 2022). We reflect on these and other findings next.

In contrast to our first hypothesis, cumulative child maltreatment was not directly associated with any domains of sexual self-concept or sexual behaviors; the only significant direct association was with number of sexual partners. Additional significant associations were revealed when we explored relations between individual types of maltreatment and sexual self-concept. Accordingly, we found that psychological and physical abuse were associated with sexual self-monitoring. Sexual abuse was not associated with any domains of sexual self-concept, and there were no significant associations between any type of maltreatment and positive domains of sexual self-concept. These findings diverge from conventional ideas about the relation between child maltreatment and sexual well-being.

Our second hypothesis, for which we found partial support, considered the mediational role of sexual experience—operationalized by number of sexual partners and number of sexual behaviors. Each of these constructs captures distinct aspects of the sexual development and learning of young adults, and each has distinct implications for sexual self-concept. Based on our analyses, cumulative child maltreatment was only associated with sexual self-concept (sexual self-monitoring) through its indirect association via number of sexual partners, not sexual behaviors. That is, child maltreatment was associated with more sexual partners, which in turn was associated with higher levels of sexual self-monitoring. Previous research has also linked child maltreatment to higher numbers of sexual partners (Luster & Small, 1997; Noll et al., 2011) and having more sexual partners to negative sexual outcomes, such as condom non-use (Ashenurst et al., 2017; Finer & Philbin, 2013). Explanations for these associations are not clear cut. However, a person with a history of child maltreatment may have more sexual partners because they are quick to end intimate relationships in an effort to temper conflict, distress, and traumatic reactions (MacIntosh, 2017), highlighting the interpersonal and relational difficulties noted in the child maltreatment literature (Colman & Widom, 2004; DiLillo et al., 2007; Furman et al., 2008; Kim & Cicchetti, 2010). Indeed, people who have experienced child maltreatment also have difficulty processing and regulating their emotions, which can lead to rumination, impulsive reactions to distress, and poor adaptation to emotional



conflict (McLaughlin et al., 2020). Accordingly, we may be witnessing the dynamic relation between number of partners and poor relationship skills or relational distress/traumatic reactions, the latter of which we did not measure in the current study.

A second explanation may exist in decades old research related to the ways in which child maltreatment shapes how a person views themselves, others, and the world coupled with more recent research on the neurobiological underpinnings of child maltreatment. That is, experiences such as sexual abuse can lead a person to hold shameful views of themselves and view others as unresponsive or abusive (Finkelhor & Browne, 1985), which can serve as fuel for increased sexual self-monitoring in the context of multiple failed relationships. More recent research suggests that these negative views may originate from neurobiological changes impacting a person's threat (i.e., enhanced threat detection and hostile attribution bias), reward (i.e., finding less pleasure in positive things), and memory (i.e., overgeneralizing autobiographical memories) systems resulting from the maltreatment experience (McCrary et al., 2022; McLaughlin et al., 2020). Applied to the current study, these findings suggest that people who experience child maltreatment may be more sensitive to others' judgements related to their sexuality and more likely to end a relationship instead of working through conflict or distressing emotions. Latent vulnerability theory (McCrary & Viding, 2015; McCrary et al., 2017) helps to explain this type of response as an adaptation for survival in a dangerous environment that provides short-term benefit (e.g., survive maltreatment in childhood), but confers risk in the long term (e.g., feel judged by others, negative sense of self related to one's sexuality; McCrary et al., 2017).

Unexpectedly, we also found that number of sexual partners mediated the relation between resilient coping and sexual self-monitoring, such that higher resilient coping was associated with more sexual partners, which in turn was associated with higher levels of sexual self-monitoring. This association adds a novel layer to the current findings and challenged us to think about the ways in which and for whom sexual self-monitoring may not be negative. Accordingly, there is research to suggest that sexual self-monitoring can help one take greater caution related to their sexual experiences when they are aware of others' judgments, thereby perhaps reducing sexual risk (Snell et al., 1991). In addition, healthy levels of sexual self-monitoring may also lead to greater awareness of one's own sexual feelings (Smolak et al., 2014). In offering these speculations, we do not intend to discount previous research that has shown how sexual self-monitoring can also lead to self-sexualizing behaviors, such as body surveillance and body shame (Smolak et al., 2014), but we do believe it is important to recognize that constructs such as sexual self-monitoring likely play out differently depending on a person's life experiences. Therefore,

someone with high levels of resilient coping may have more partners, but also be more likely to be selective in their sexual experiences and have a better sense of their own sexual feelings. Thus, they may be more likely to avoid the negative consequences often associated with having multiple partners and sexual self-monitoring. These results suggest that various cognitive-behavioral approaches to prevention of sexual sequelae of child maltreatment could benefit from focusing attention on factors associated with having multiple different partners, as well as factors associated with the choice of specific partners. This could be especially important during late adolescence and young adulthood, when accrual of experience with different sexual partners is highest.

In contrast, a broader repertoire of sexual behaviors seemed to be a vehicle for positive sexual self-concept. Partnered sexual activity—in terms of incidence and diversity of sexual behaviors—was directly related to higher levels of sexual self-consciousness, sexual assertiveness, sexual self-esteem, and sexual motivation—all positive domains of sexual self-concept. Furthermore, sexual behaviors mediated relations between resilient coping and multiple domains of positive sexual self-concept, in line with research promoting a sex-positive framework of sexuality (Harden, 2014) and holistic definition of sexual health (WHO, 2006, 2010), which purport sexual experience to be associated with sexual and relational competence and greater sexual well-being (Buzwell & Rosenthal, 1996; Fortenberry, 2014; Horne & Zimmer-Gembeck, 2005). Specifically, we found that even among those with histories of child maltreatment, greater resilient coping was related to more sexual behaviors, which was in turn related to higher levels of sexual self-consciousness, sexual assertiveness, sexual self-esteem, and sexual motivation. Indeed, previous research has found positive effects of sexual behavior when these experiences are consensual, safe, and developmentally appropriate. For instance, sexual activity has been correlated with lower levels of delinquency (Harden et al., 2008), higher levels of self-esteem, increased ability to voice one's opinions in relationships, body self-esteem (Brody et al., 2002; Horne & Zimmer-Gembeck, 2005), and feeling better about oneself (Maas & Lefkowitz, 2015; Vasilenko et al., 2015). Furthermore, sexual exploration has been found to be associated with greater sexual subjectivity, sexual assertiveness, willingness to voice opinions to a partner, and the rejection of sexual double standards among adolescent girls (Auslander et al., 2007; Horne & Zimmer-Gembeck, 2005). These findings highlight that simply using a count of sexual behaviors to determine risk may not be appropriate, as more sexual behaviors—despite a history of child maltreatment—were not a pathway to poor sexual outcomes in the current study. To the contrary, our results highlight sexual behaviors as a pathway to a more positive sexual self-concept and underscore that it is necessary to discuss the importance of choosing to

engage in sexual behaviors that are safe, wanted, and fulfilling within sexual health education and prevention programs. As others have noted, working to change the negative rhetoric around sexual activity and shift into a more trauma-informed, learning-based, sex-positive framework will help reshape the dominant discourse around adolescent and young adult sexual health (Fava & Bay-Cheng, 2013; Fava & Fortenberry, 2021; Fava et al., 2018; Fortenberry, 2014; Harden, 2014; Lamb & Plocha, 2011).

Another unique component of the current study was our incorporation of resilient coping in all analyses. Doing so allowed us to examine empirical associations in line with our underlying theoretical frameworks (i.e., trauma-informed, resilience, sex-positive). We found resilient coping to be significantly associated with various domains of sexual self-concept (both positive and negative) and responsible for more statistically significant effects than child maltreatment. Research has demonstrated that positive relational experiences in childhood act as a buffer between childhood adversity and outcomes in adulthood (Bethell et al., 2019). Knowing more about people's sexual and romantic relationships can help researchers understand when these intimate relationships are also sources of resilience and strength. In addition, our finding that more resilient coping was associated with more sexual partners which was in turn related to less favorable sexual self-concept may suggest that while participants believe they can respond to adversity in resilient ways, our measure of resilient coping did not account for feelings of inadequacy or distress in intimate relationships. Future research may need to include a more domain specific type of resilience as some have argued that measures of resilience should be related to the particular risk being studied (Fletcher & Sarkar, 2013), that differences in conceptualization, operationalization, and measurement can lead to variations in findings (Walsh et al., 2010), and that one area of resilience cannot be assumed to generalize to other areas (Sarkar & Fletcher, 2013). Ultimately, more research is needed that considers resilience alongside sexual self-concept and well-being as this association has not been routinely examined.

Some limitations should be considered in evaluation of data presented herein. Our sample consists of people who self-selected into our study about general life experiences as well as sexual and romantic experiences on a crowdsourcing platform, MTurk. MTurk is somewhat controversial as some believe it is susceptible to low-quality and/or fraudulent data from idiosyncratic participants (e.g., Kennedy et al., 2020). Yet others proffer that MTurk is reliable for collecting data in the behavioral and social sciences (Cobanoglu et al., 2021; Crump et al., 2013; Simcox & Fiez, 2014), it provides access to pools of attentive research participants who offer reliable and valid data (Hauser & Schwartz, 2016), and that MTurkers largely resemble the

general population (McCredie & Morey, 2019). Related to measurement, our independent variable of child maltreatment did not account for the multidimensional and complex nature of maltreatment experiences given that it aggregated across types of maltreatment to form a cumulative index, thereby not accounting for factors such as duration or perpetrator identity. However, measuring cumulative adversity and maltreatment is not without precedence in the literature. The items that were used from the ACE Scale (Felitti et al., 1998) in this study have been shown to be reliable in other research and cumulative maltreatment has been deemed an important and useful measure of child maltreatment and adversity (Mei et al., 2022). In fact, when compared to more fine-grained measures of adversity, a cumulative approach allowed researchers to obtain the same results (Bethell et al., 2017). In addition, our dependent variable of sexual self-concept was limited to specific subscales of sexual self-concept. While a standard overall measure of sexual health does not exist (Fava et al., 2018), considering more dimensions related to a holistic definition of sexual health and well-being could provide a more robust understanding of the association between the study constructs. Furthermore, the MSSCQ is not a trauma-specific measure, was not developed through a trauma-informed approach, and may be insensitive to the trauma-related consequences of child maltreatment (Baumann et al., 2021). A trauma-informed approach recognizes the prevalence of trauma, its impact across development, avoids re-traumatization, and supports people's resilience (Fallot & Harris, 2008; Harris & Fallot, 2001). This may have limited our ability to generalize our findings to people who have experienced child maltreatment, the trauma-sensitivity of the included items, and to evaluate the trauma-specific consequences of child maltreatment related to one's sexual self-concept.

While our approach is inclusive of diverse sexual behaviors and partners and thereby avoids being coitus—or hetero-centric, it does not consider the context or quality of various relationships. These may have important ramifications (Furman et al., 2008), especially for people with histories of child maltreatment (Baumann et al., 2021; de Montigny Gauthier 2019; Labadie et al., 2018). Furthermore, some researchers have observed a bidirectional association between sexual experience and sexual self-concept (e.g., Hensel et al., 2011; Kotiuga et al., 2022). While some aspects of sexual self-concept become salient in early adolescence before youth have engaged in any type of physical sexual experience (Ott et al., 2006), sexual self-concept may also simultaneously be impacted by sexual experiences, and it may then influence future sexual experiences (Longmore, 1998). It is likely that this association continues throughout life in an iterative manner (Hensel et al., 2011) and longitudinal data spanning different development periods would be best suited to examine the reciprocity between sexual self-concept and sexual

experience. Unfortunately, the data in the current study precluded us from examining these bidirectional effects, although we were able to examine a completely prospective model.

The current study was rooted in positive and normative views of sexuality. Accordingly, we sought to position sexual experiences as potential mechanisms of resilience and pathways to stronger sexual well-being. We found that the amount of one's sexual experience—in frequency or diversity of sexual behaviors—was not inherently “risky” or indicative of negative outcomes, even for some people with child maltreatment histories. In fact, sexual experience may promote sexual well-being under certain circumstances (e.g., safe, consensual, wanted sexual experiences), as evidenced by the significant associations between resilient coping and various aspects of positive sexual self-concept via sexual behaviors. However, our findings also highlight the importance of healthy sexual relationships, in line with previous research positing that child maltreatment may lead to relational difficulties (MacIntosh, 2017) and negative outcomes in sexual well-being (Vaillancourt-Morel et al., 2021). Accordingly, practitioners, policymakers, and researchers must attend to the positive, health-promoting aspects of sexual behavior, while also working to bolster the individual and contextual factors that foster youth resilience and support healthy relationships. Ultimately, a more integrated and holistic appreciation for the subjective and psychosocial aspects of sexuality as well as sexual experiences is necessary for the promotion of positive sexual development and health (Kotiuga et al., 2022; Potki et al., 2017). This is in accordance with the tenets of a sex-positive approach to development (Harden, 2014) and a trauma-informed approach to sexuality, which rejects the presumption of negative outcomes following adversity, appreciates the potential for resilience, and affirms all individuals' fundamental sexual rights (Fava & Bay-Cheng, 2013; Fava & Fortenberry, 2021).

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## Declarations

**Conflict of Interest** The authors have no competing interests to declare that are relevant to the content of this article.

**Ethical Approval** Data collection procedures were approved by the human research ethics committee at the university where the fourth author was on faculty when the study was active.

**Informed Consent** Informed consent was obtained from all participants.

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