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Intergenerational Continuity Of Sexual Violence Victimization: A Socio-Ecological Examination Of Risk

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INTERGENERATIONAL CONTINUITY OF SEXUAL VIOLENCE VICTIMIZATION: A SOCIO-ECOLOGICAL EXAMINATION OF RISK

by

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This dissertation, submitted by Angela Minnich in partial fulfillment of the requirements for the Degree of Doctorate of Psychology from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.

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Title Intergenerational Continuity of Sexual Violence Victimization: A Socio-ecological examination of Risk

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Abstract

The present study examined intergenerational continuity of sexual violence victimization across the lifespan within mother-daughter dyads. Because increased risk for sexual violence in daughters is not the fault of the mother, this study examined risk factors across socio-ecological levels (i.e., individual, familial, and community risk factors) and the interplay across risk levels. Undergraduate and community dwelling mother-daughter dyads (N=202) completed self-report measures of Childhood Sexual Abuse (CSA), adolescent/adult sexual violence victimization (ASV), demographics, psychopathology, parenting, abuse and abuser characteristics, intimate partner violence (IPV), rape culture, and sexual education characteristics. Multiple mediation, moderation, and DYADIC analyses were implemented to test study hypotheses. Results support intergenerational continuity across the life span between mothers and daughters. For individual level risk factors, maternal psychopathology (i.e., PTSD, depression, alcohol use), age of abuse onset, and knowledge of maternal sexual violence victimization increased risk for intergenerational continuity. Regarding familial level factors, positive parenting served as a significant protective factor while abuse perpetrated by a relative or a male significantly increased risk of intergenerational continuity. For community level factors, risk for intergenerational continuity was increased by exposure to increased hostility toward women within participants' communities and diversity related topics in sexual education courses. Interplay across levels was present whereby positive parenting served as a protective factor against effects of maternal psychopathology on intergenerational continuity of sexual violence.

Findings emphasize the positive impact of positive parenting in prevention of sexual violence for future generations and should be a key target of intervention for sexually abused mothers.

Intergenerational Continuity of Sexual Violence Victimization: A Socio-Ecological Examination of Risk

Sexual violence victimization is defined as a committed or attempted sexual act, including penetration, nonpenetrative sexual contact, or noncontact acts such as verbal sexual harassment, by another person without freely given consent or against someone who is unable to consent (Basile & Smith, 2011). Such violence can be perpetrated via several tactics including use of completed or threatened physical force, altered consciousness, and coercion (Anderson et al., 2018; Basile & Smith, 2011; Koss & Oros, 1982). While sexual violence victimization is a pervasive public health problem across genders, this experience is especially prevalent for women as 20% of women in the United States have experienced completed or attempted rape in their lifetime and over 40% have experienced other forms of sexual violence victimization (e.g., sexual contact and sexual coercion; Breiding, et al., 2014). While women are more likely to experience their first incidence of sexual violence prior to age 18, women between ages 18 and 26 represent a high-risk population for experiencing sexual violence victimization with 4.7% reporting sexual violence victimization in the previous year and 1 in 5 college women reporting sexual assault exposure since beginning college (Basile et al., 2007; Krebs, et al., 2007). While staggering, these rates tend to underestimate the prevalence of sexual violence victimization for racially minoritized groups (Basile & Saltzman, 2002).

While the perpetrator is solely responsible for sexual violence, several risk factors for sexual violence victimization have been identified within the literature. For example, certain demographic characteristics have been linked to higher likelihood to be victimized such as race. More specifically, Black, Hispanic, and American Indian/Alaskan Native women evidence increased risk for rape victimization than white women (Basile & Saltzman, 2002). Importantly,

economic insecurity also reflects a risk factor for sexual violence victimization as research shows those reporting housing and food insecurity were more likely to experience SV than those with security in these areas (Breiding et al., 2017). Additionally, childhood maltreatment, especially childhood sexual abuse (CSA), is linked to increased risk as individuals with CSA histories are 3 to 5 times more likely to experience sexual violence victimization in adulthood than any other type of childhood maltreatment (Sarkar & Sarkar, 2005, Walsh et al., 2012). Substance use reflects a more complicated risk factor as studies have reported mixed findings on whether alcohol increases risk. However, forced substance use is an identified SV perpetration tactic suggesting being in settings with increased exposure to substances may increase an individual's risk for sexual violence victimization (Basile & Smith, 2011; Waterman & Lefkowitz, 2020).

Experiencing sexual violence victimization is associated with far reaching functional and psychological outcomes that are burdensome for both those experiencing sexual violence victimization and society. For example, this experience represents a significant economic burden. Research suggests the estimated lifetime cost of rape is over $3 trillion (Peterson et al., 2017). Additionally, those experiencing sexual violence victimization evidence diminished educational and occupational performance relative to those without this experience (Howard et al., 2019; Loya, 2015; Mengo & Black, 2016). Regarding psychological outcomes, sexual violence victimization is linked to increased risk for several mental health disorders including posttraumatic stress disorder (PTSD), generalized anxiety disorder (GAD), and depression (Basile et al., 2014; Chen et al., 2010; Dubosc et al., 2012; Zinzow et al., 2012). Additionally, sexual violence victimization is linked to increased interpersonal difficulties across romantic, social, and occupational relationships (Basile & Smith, 2011).

1.1 Intergenerational Continuity of sexual violence victimization

As illustrated above, sexual violence is a pervasive public-health concern and therefore, prevention is essential. The Social-Ecological model represents a comprehensive framework for understanding risk for violence and aims to understand and prevent this risk across individual, relationship (microsystem), community (mesosystem), and societal levels (macrosystem; Krug et al., 2002). Previous research on sexual violence has largely focused on individual factors including history of abuse, substance use, and mental health; investigation of the micro- and macrosystem within the sexual violence literature is significantly lacking. Intergenerational transmission and continuity of trauma are well-supported phenomena within the current body of literature. While used interchangeably throughout the literature, intergenerational continuity refers to increased likelihood to be abused if your parent was also abused even when this parent is not the perpetrator, while intergenerational transmission refers to the parent as the perpetrator (Berlin et al., 2011). For the purposes of this study, intergenerational *continuity* will be investigated.

There is currently a dearth of literature examining intergenerational continuity of adolescent and adult sexual violence victimization (ASV) specifically. To this writer's knowledge, there is currently only one study examining this relationship during adulthood (Testa et al., 2011). Rather, much of the literature on intergenerational continuity focuses on sexual victimization in childhood, or the relationship between child maltreatment and adult intimate partner violence. However, approximately 50% of individuals who experience ASV also have a history of CSA (Roodman & Clum, 2001) highlighting the importance of investigating intergenerational continuity of sexual violence across the lifespan and risk factors perpetuating continuity.

CSA appears to evidence significant risk for intergenerational continuity, especially between mothers and daughters with almost 40% of children of those with CSA exposure also reporting this experience (Grunsfeld, 2018; Trickett et al., 2011). CSA's effects are far reaching and pervasive illustrated by links in CSA identified in up to three generations (McCloskey, 2013). One study found that of mothers with ASV, 50.3% of their daughters also reported this experience compared to 41.6% of daughters of non-victimized mothers (Testa et al., 2011); however, more research is necessary to understand this putative relationship.

While these mothers are not responsible for their child's abuse, their children are more likely to have this experience due to several risk factors related to their CSA experience (Borelli et al., 2019). This relationship may be best explained via a developmental framework. Developmental psychopathology theory aims to identify the interaction between biological, psychological, and social-contextual characteristics of development to prevent maladaptive and psychopathological outcomes (Cicchetti & Toth, 2009). In this context, sexual trauma instigates psychopathology which in turn disrupts developmental trajectories and subsequent normative processes such as parenting behaviors and emotion regulation which ultimately results in intergenerational continuity of this trauma (Cicchetti & Toth, 2009).

1.2 Mechanisms for Intergenerational Continuity of Sexual Violence Victimization

The socio-ecological model is based on Bronfrenbrenner's (1979, 1986) theory designed to better understand human development that posits that individuals are impacted by the various systems that surround them. This model posits that health is impacted by the interaction between characteristics of the individual, their relationships, and the community and allows for a holistic examination of risk (Kilanowski, 2017). Since its inception, this theory has been adapted and

applied to various aspects of physical and mental health, violence prevention, and healthy college campuses (Reupert, 2017; Kilanowski, 2017).

As mentioned previously, the socio-ecological model suggests risk factors for intergenerational continuity may be present across levels of life. This model identifies bio-psycho-social characteristics of the person as individual level factors (Campbell et al., 2009) and therefore this study will examine the effects of psychopathology and characteristics of abuse at the individual level. This study will examine parenting, intimate partner violence exposure, and perpetrator characteristics at the microsystem level and sex education characteristics and rape culture at the macrosystem level. While these factors are independently influential in intergenerational continuity of sexual violence victimization, this study also aims to examine the interplay of these mechanisms across levels by examining serial, indirect effects of maternal psychopathology and parenting.

1.2a Individual Factors

1.2a.1 Psychopathology. Experiencing sexual violence victimization across the lifespan has been linked to several adverse mental health outcomes with the most common being PTSD, substance abuse and depression (Dworkin et al., 2017). Such psychopathology results in significantly increased distress, attentional deficits, and disrupted interpersonal functioning increasing risk for sexual violence victimization (Basile & Smith, 2011). PTSD has been found to significantly predict rape experiences at 8-month follow-up for those with CSA histories (Messman-Moore et al., 2009). Notably, individuals with higher levels of trauma-related distress, typically displayed in PTSD, were at increased risk for experiencing revictimization two or more times compared to those with less trauma-related distress (Cusak et al., 2019). PTSD evidences interplay across levels of risk as well. Literature suggests mothers with PTSD report decreased

parent-child relationship quality, moderate to severe physical aggression towards their children, less sensitivity and responsiveness, and more avoidance, overprotectiveness, and intrusiveness (Van Ee et al., 2016). Thus, this individual level factor influences the microsystem by impairing parenting. PTSD symptoms also predict increased implementation of physical discipline in those with cumulative trauma histories including CSA and adult sexual assault experiences (Cohen et al., 2008)

Notably, substance use may explain the relationship between PTSD and revictimization as it has been identified as a significant mediator for this relationship. This suggests women with PTSD are at greater risk of experiencing rape, especially if they use alcohol as a means of coping (Messman-Moore et al., 2009). Individuals with sexual violence victimization histories tend to report increased alcohol use as an attempt to cope. College women who experience sexual assault reported increased psychological distress which in turn predicted increased alcohol use as a form of negative reinforcement (Miranda et al., 2002). Alcohol use also adversely impacts parenting practices and styles suggesting a significant interplay between levels of functioning. More specifically, individuals with CSA histories evidence difficulty providing appropriate structure, consistent discipline, and clear expectations for children (Fatehi et al., 2021).

Depression has also been linked to increased distress, attentional deficits, and interpersonal dysfunction which in turn predicts increased sexual violence victimization risk. For example, in a sample of college women, findings suggest those who experienced sexual violence victimization were 1.11 times more likely to be revictimized if they had increased depression symptomatology than those who were not depressed (Cusak et al., 2019). Depression also represents a risk factor for maladaptive parenting, especially for those with CSA histories. For example, a scoping study found depression significantly predicted decreased warmth, confidence

in parenting abilities, increased implementation of punitive discipline, and decreased parent-child relationship quality for mothers with CSA histories (Fatehi et al., 2021). Additionally, maternal depression among those with histories of sexual victimization in both childhood and adulthood predicted harsher parenting (Dubowitz et al., 2001). Therefore, PTSD, depression, and substance use, especially as a form of coping, reflect significant risk factors for sexual violence victimization, revictimization, and adversely impact parenting. This suggests these may be salient risk factors for intergenerational continuity of sexual violence victimization.

1.2a.2 Sexual Violence Victimization and Perpetrator Characteristics. Characteristics of CSA have been linked to increased risk for revictimization as well as disrupted psychological functioning. Research suggests for those with CSA histories, abuse severity, age of initial abuse (i.e., index event), and duration of abuse reflect risk factors for revictimization and for PTSD and depression symptoms in adulthood (Adams et al., 2018; Papalia et al., 2021; Pittenger, 2016; Schoedl et al., 2010). Such characteristics may evidence significant damaging effects due to the initial reactions following abuse and its influence on recovery. For example, abuse onset for older children and increased severity may produce feelings of powerlessness (Banyard & Williams, 1996). Conversely, younger abuse onset is likely overwhelming and frightening (Banyard & Williams, 1996). These emotional reactions may produce resultant psychopathology adversely impacting parenting promoting intergenerational continuity of sexual violence.

The most widely supported perpetrator characteristic for sexual violence victimization is relationship to the survivor. A 20-year longitudinal study found that over 16 percent of heterosexual women reported CSA perpetrated by men within their families (Wilsnack et al., 2012). While studies suggest both inter- and intrafamilial CSA predict increased risk for revictimization (Pittenger, 2016), being abused by a family member has been linked to increased

risk for teenage pregnancy, marriage at an earlier age, increased divorce rates, and interpersonal difficulties such as maladaptive interpersonal relationships (de Jong & Bijleveld, 2015; Jackson et al., 1990). This potential for familial and interpersonal dysfunction can significantly influence the next generation and potentially promote intergenerational continuity of sexual violence victimization.

1.2b Microsystem Level Factors

1.2b.1 Parenting. CSA is linked to earlier pregnancy, lower levels of socioeconomic status and mental health difficulties which can all adversely impact parenting abilities even in the absence of specific psychopathology (Borelli et al., 2019). This diminished parenting ability appears to significantly increase children's risk for victimization as mothers with CSA histories report increased parenting stress, provide less warmth toward their children, and evidence less overall parenting skills than those without this history (Borelli et al., 2019). Further, Testa and colleagues (2011) found that intergenerational continuity of sexual violence victimization within mother-daughter dyads was partially explained by maternal communication effectiveness whereby those reporting more effective communication evidenced decreased likelihood to experience ASV even when their mother had a sexual violence victimization history.

1.2b.2 Intimate Partner Violence (IPV). Hamby and Grych (2013) have also provided extensive support for the interconnectedness of interpersonal violence types identifying IPV as an essential factor to consider in the intergenerational continuity of sexual violence. Sexual violence victimization can occur in the context of IPV (Campbell et al., 2009), individuals with CSA and sexual violence victimization histories are more likely to experience IPV (Krause-Utz et al., 2021; Papalia et al., 2021), and those with compounded sexual violence experiences have

been found to have more adverse psychological outcomes (Campbell et al., 2009) suggesting IPV may contribute to intergenerational continuity of sexual violence victimization.

1.2c Macrosystem Level Factors

Importantly, community level factors can further exacerbate or protect against individual and microsystem risks for sexual violence victimization. Two especially relevant community level factors are sex education and community norms regarding violence. For example, sex education in the classroom may provide protective information absent in the home.

1.2c.1 Sexual Education Characteristics. Individuals receive sex education from various sources throughout their development including formal sex education in school, porn, movies, internet searches, magazines, parents, friends, siblings, and intimate partners (Starker, 2017). Many young people report learning the most information about sex through formal sex education in school and through their intimate partners (Starker, 2017) and therefore this information is essential for their sexual development and understanding sexual violence and consent. Comprehensive sexual education, including teaching sexual refusal skills, in middle school and high school has been identified as a potential community protective factor against sexual violence victimization (Santelli et al., 2018).

1.2c.2 Community tolerance & Social Norms around Violence. Community tolerance and social norms around violence can be detrimental to those who experience CSA or sexual violence victimization. Rape culture has been identified as a salient risk factor for rape. Johnson and Johnson (2017) suggest this construct consists of traditional gender roles, sexism, hostility toward women and adversarial sexual beliefs. Therefore, these cultural norms and beliefs may play a salient role in intergenerational continuity of sexual violence victimization by increasing

acceptability of violence, lack of exposure to prevention strategies, and internalized negative beliefs similar to those within the community.

II. Current Study

The present study aims to test whether mothers' CSA (before age 14) and ASV (defined as occurring after the age of 14) experiences predict increased risk for these experiences in their daughters and social-ecological factors that influence this risk.

2.1 Hypotheses

First, I hypothesize maternal CSA and ASV will each independently predict these experiences in young adult daughters. Next, I predict that each individual level factor (maternal psychopathology, maternal abuse characteristics, and knowledge of maternal sexual violence exposure), microsystem level factor (dysfunctional/maladaptive parenting, maternal IPV exposure, and perpetrator characteristics), and macrosystem level factor (sex education and social norms supporting violence) will independently mediate intergenerational continuity of sexual violence victimization. Finally, there will be significant interplay across levels whereby mothers with sexual violence victimization in childhood and adulthood will report increased maternal psychopathology which in turn will predict dysfunctional/maladaptive parenting which will result in intergenerational continuity of sexual violence across the life span (see Figure 1).

III. Methods

3.1 Participants

Participants were 230 mother-daughter dyads comprised of 1115 daughters (M_{age} = 22.20, *SD* = 4.99) between the ages of 18 and 35 and 113 of their mothers (M_{age} = 45.58, *SD* = 8.69).

Eligible participants completed a pre-screen survey online assessing their age, gender, and expressed interest in completing the study and those who previously participated in a clinical study within our research lab. Recruitment was conducted through paid advertisements on Facebook, hanging flyers in the community, and through the undergraduate research pool at the University of North Dakota. Of these completed dyads, 202 were included in analyses due to missing data on variables within study models (see statistical analyses section for more information). Participants racial composition was made up of White (64.8%; 61.5%), Black/African American (14.9%; 14.9%), Asian American and Pacific Islander (5%; 5.2%), Native American (8%; 9.6%), and Other (.1%; 1.6%) for mothers and daughters respectively. Further, a portion of the sample self-identified as Hispanic or Latina/o/x (18.8%; 19.1%) for mothers and daughters respectively.

3.2 Measures

3.2a Mother and Daughter Measures

The following questionnaires were completed by both mothers and daughters. All study self-report measures evidenced acceptable psychometric properties within this sample.

Demographics. Participants were asked to complete a 20-item measure obtaining the participant's age, sex at birth, current gender, gender identity, race, ethnicity, sexual identity/orientation, family's household income, parental marital status, parental mental health and substance abuse history, sexual partner history, campus housing status, current relationship status, and highest level of education.

Childhood Sexual Abuse. The Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1998) is a 70-item, retrospective, self-report measure designed to assess a range of traumatic

experiences during childhood. This measure assesses experiences of abuse and neglect experienced in childhood including physical, emotional, and sexual abuse as well as physical and emotional neglect; however, for the purposes of this study, only the sexual abuse subscale was administered (5 items). The CTQ evidences adequate internal consistency (α = .95), test-retest reliability (r = .88), and criterion-related validity (Bernstein et al., 1994). Responses are reflected on a 5-point Likert-type scale referring to the frequency of the experience prior to age 18; however, within this study participants reported exposure prior to age 14, with 1 = "never true" and 5 = "very true". Responses of 2 or more reflect a history of CSA and were used to compute a dichotomous variable of CSA history.

Sexual Violence Victimization. The Sexual Experiences Survey Short Form Victimization (SES-SFV; Koss et al., 2007) is a 10-item, self-report measure assessing sexual violence victimization. Items reflect a measure of the frequency of various types of unwanted sexual acts and the rate of tactics used to perpetrate this sexual violence. This study implemented the tactic-first version of the SES-SFV as this version has been shown to produce higher prevalence rates of sexual violence victimization than the original version of this measure (Anderson et al., 2021). This version of the SES-SFV evidences good reliability (ICC = .92; Anderson et al., 2021). The SES-SFV produces an overall victimization score as well as subscales reflecting sexual contact and attempted and completed coercion and rape. For the purposes of this study, an overall score of sexual violence victimization was examined and represented frequency of ASV. Further, a dichotomous score was examined to represent overall exposure ASV.

Intimate Partner Violence (IPV). The Composite Abuse Scale (Revised)- Short Form (CAS_R-SF; Ford-Gilboe et al., 2016) is a 15-item, comprehensive self-report measure of intimate

partner violence experiences. The CAS_R-SF measures abuse across physical, sexual, and psychological domains within intimate relationships. This scale produces subscale scores for each type of abuse as well as an overall IPV score with a measure of severity and intensity of these experiences. For the purposes of this study, overall IPV scores were used in models examining effects of IPV. This scale evidences good reliability (α = 0.942) as well as adequate content, construct, and criterion validity in a sample of heterosexual, women and adolescents (Ford-Gilboe et al., 2016).

Psychopathology.

Depression. The Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001) is a 9-item, self-report measure of depression severity over the two preceding weeks. Responses are recorded on a 3-point Likert scale with 0 = "not at all" and 3 = "nearly every day" with higher scores reflecting increased depression severity. This measure has evidenced adequate reliability and validity in both clinical and general populations (Kocalevent et al., 2013; Kroenke et al., 2001).

PTSD. The PTSD Checklist for DSM-5 (PCL-5; Blevins et al., 2015) is a 20-item self-report measure designed to assess symptoms consistent with a DSM-5 diagnosis of PTSD. Responses are recorded on a 5-point Likert-type scale where 0 = "Not at all" and 4 = "Extremely". The PCL-5 produces an overall symptom severity score between 0 and 80. The PCL-5 evidences adequate internal consistency (α = .94), test-retest reliability (r = .82), and convergent (rs = .74 to .85) and discriminant (rs = .31 to .60) validity (Blevins et al., 2015).

Alcohol Use. The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) is a 10-item, self-report measure designed to screen for problematic alcohol consumption. Responses reflect a 4-point scale whereby respondents report their quantity and frequency of

alcohol consumption, drinking behavior, and alcohol-related problems. This scale evidences good positive predictive power with 92% of those diagnosed with an alcohol use disorder scored an 8 or higher on this screener and 94% of those without problematic drinking scored below an 8 on this scale. For the purposes of this study, a total score was used in models to examine the effects of problematic drinking.

Characteristics of Sexual Victimization. Participants were asked several follow-up questions after completing the CTQ to assess CSA characteristics. More specifically, participants were asked to enter their age at the time of their initial abuse exposure to determine whether age of abuse onset influences intergenerational continuity of CSA and sexual violence victimization. Use of physical force during abuse was also assessed by asking "Did the perpetrator use physical force (hitting, pushing, beating, or slapping), choking or gagging, or use of a weapon to involve you in the sexual contact?" (Banyard & Williams, 1996). In this study, penetration referred to anal, vaginal, oral intercourse, or digital or object penetration. Participants were asked "Did the perpetrator force you to have oral sex, anal sex, or sexual intercourse?".

Abuser characteristics. Participants responded to various questions about their abuser's characteristics for both CSA and sexual violence victimization experiences. Questions included "How many different people have forced you to do unwanted sexual things?", What was the sex/gender of the person or persons who did these things to you?", "What was the sexual orientation of the person or persons who did these things to you?", and "What was your relationship to the person or persons who did these things to you?". Questions about CSA and sexual violence victimization were differentiated by CSA questions stating, "before age 14" and sexual violence victimization questions stating, "since the age of 14".

Parenting Practices. The Alabama Parenting Questionnaire (APQ-9; Elgar et al., 2007) is a 9-item, 5-point, Likert type scale measuring parenting behaviors considered to adversely influence child behaviors. Respondents are asked to rate the frequency each item occurs in their homes on a scale ranging from 1 = "Never" to 5 = "Always". Respondents were asked to respond to items based on the frequency of each item while the child was living within the home with the parent. This measure produces three scale scores including "Positive Parenting", "Inconsistent Discipline", and "Poor Supervision". Positive parenting included items such as, "your mother tells you when you are doing a good job with something," "your mother compliments you after you've done something well," and "your mother praises you if you behave well." Poor supervision included items such as, "Your mother does not know when you are out with friends," "You stay out in the evening after the time you're supposed to be home," "you fail to leave a note or let your mother know where you are going." Finally, inconsistent discipline includes items such as, "your mother threatens to punish you and then does not actually punish you," "you talk your mother out of punishing you when you have done something wrong," and "your mother lets you out of a punishment early." Reliability for the APQ-9 is α = .57-.62 and this measure evidences appropriate correlations with other parenting scales (Elgar et al., 2007). The parent and child version of this measure were administered to obtain both the daughter's perspective and maternal perceived use of these practices with their daughter.

3.2b Daughter Only Questionnaires

Connectedness. Parental connectedness was measured via a 4-item, 5-point Likert-type scale to assess relationship quality and connectedness with the participants parents. Participants were asked questions such as "How close do you feel to your parent?" and "How loved and

wanted do you feel?" and asked to respond with 1 = not at all, 3 = somewhat, and 5 = extremely. Items were adapted for mother's completing this measure to reflect items from the parent's perspective (e.g., "How close do you feel to your child?").

Knowledge of Parental Victimization. Participants were administered a 10-item scale to assess their knowledge of their parent's history of sexual victimization in both childhood and since the age of 14 (Anderson, 2020). This measure was created for another study within the Sexual Violence Prevention Lab at the University of North Dakota and reliability in this study was good (α = .87). Participants were asked to respond to items with "Yes", "No", or "Maybe". There were also two open-ended questions following the completion of this scale which ask the respondent to describe an experience they believe occurred to their parent that was not listed and to explain why they chose the response "maybe" for any items.

Sex Education. The Family Life Sex Education Questionnaire (FLSEQ) is a 47-item measure adapted from the Family Life Sex Education Goal Questionnaire II (FLSE-GQ; Godin & Razzano, 2013). The FLSEQ is a measure of an individual's experiences with sexual education during school. Respondents were asked to think about the sexual education they received during school and indicate whether they agreed or disagreed with each statement with responses ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree". Scores were produced for 5 factors including sexual decision making (item example: "I was informed on community services related to birth control and sexual decision-making"), physical development (item example: "I was taught to view the growth changes in my body as normal and healthy"), respect for diversity (item example: "We discussed that the attitudes toward growth and development is different for different ethnic groups and cultures"), secondary prevention (item example: "If girls got pregnant, there was counseling available for them"), family life and personal growth (item

example: “I was taught how to understand people’s feelings and points of view”). This scale was adapted for another study within the Sexual Violence Research Lab at the University of North Dakota and reliability for this study was good (α = .98).

Community Norms around Sexual Violence. Johnson & Johnson (2017) approach to measuring rape culture was implemented in this study. This methodology includes items measuring the following constructs: traditional gender roles (masculine and feminine), sexism (hostile and benevolent), hostility toward women, adversarial sexual beliefs, and acceptance of violence (Johnson & Johnson, 2017). Following this proposed method and in order to measure community level beliefs within these constructs all instructions state: “Thinking about your peers’ actions, feelings, and beliefs, please indicate how much you believe your peers would agree or disagree with each statement. When answering each question below please use the following definition of peers: individuals who belong to the same social group as you, especially based on age, grade, or status” (Johnson & Johnson, 2017). Subscales consist of items drawn from previously established measures which all evidence adequate reliability and validity and this method of measuring rape culture evidences good fit and is empirically supported (Johnson & Johnson, 2017).

3.3 Procedure

All procedures were approved by the Institutional Review Board of the University of North Dakota. Data were collected using Qualtrics to administer the online questionnaires described above. First, participants were provided an electronic version of the consent form. Following providing their consent, participants completed the study questionnaires described above in a randomized order. Once the participants completed the study, they were asked to provide the contact information of their mother to complete the study and their mothers

completed the same procedure. Participants recruited through the undergraduate research pool received course credit for their participation while their mothers were compensated with an amazon gift card. All community dwelling mothers and daughters were sent amazon gift cards to compensate them for their time.

3.4 Data Cleaning

Consent and individual data was collected from 1533 mothers and 2177 daughters; however, potentially fraudulent and bot responses were removed from the original data set. More specifically, 838 mother and 1562 daughter responses were removed. This exclusion criteria was determined using reCAPTCHA programming, responses to open-ended validity questions, repeat responses, incomplete responses (<50% complete), and response times less than 10 minutes. Of the remaining data, 461 mother and 310 daughter responses were not within a completed dyad and therefore excluded. Of the 202 completed dyads included in statistical analyses, 59% were completed by mothers before daughters. See figure 2 for data cleaning flow chart.

3.5 Statistical Analyses

Descriptive statistics and bivariate associations among study constructs as well as assumptions and all statistical models were tested using SPSS v. 28. Pairwise deletion was employed in all models to account for missing data on variables of interest while attempting to include as many dyads as possible. More specifically, dyads were removed if missing data was present on either measure of sexual violence exposure. Due to the potential for confounding influence on outcomes (e.g., generational differences in approach to parenting), mother's age was covaried in all models as mothers evidenced a wide range of ages within this sample (Age Range = 33-63). Additionally, daughters' and maternal CSA exposure was covaried in all models

examining intergenerational continuity specific to ASV as CSA exposure is extremely common for those reporting sexual violence and this study aimed to separate risk factors for intergenerational continuity of CSA and ASV. Assumptions of homoscedasticity, normality, linearity, and multicollinearity were met.

In this study, a series of linear and binary logistic regression models were employed to test direct effects within each model whereby the dependent variable was daughter's CSA and ASV exposure independently. Both CSA and ASV were examined as dichotomous and continuous variables to provide an understanding of both general risk to exposure as well as whether intergenerational continuity is impacted by frequency and/or severity of these experiences. Due to the presence of non-independence within dyads, dyadic data analysis was employed via Actor-Partner Interdependence models in SPSS v. 28. Dyad members were treated as distinguishable within this data set in part because their roles were clearly defined and because treating dyad members as distinguishable allows for specifying influence of each partner rather than applying fixed effects across both partners (Cook & Kenny, 2005). All dyadic mediation models were conducted using MEDYAD macro (Coutts et al., 2019), an analytic tool for assessing mediation in distinguishable dyads. To examine whether intergenerational continuity of CSA and ASV was present, a series of analyses were employed to test the effects of (1) maternal exposure to lifetime sexual violence on daughter lifetime sexual violence, (2) maternal CSA on daughter CSA, (3) maternal ASV on daughter ASV, (4) maternal CSA exposure on daughter ASV, and (5) maternal ASV on daughter CSA exposure. To test moderation effects, interactions between the independent variable and moderator were entered into the model and graphed for better interpretability. Serial mediation analyses for testing hypotheses 3 were fit

using PROCESS Macro (Hayes, 2013), model six. Bias-corrected 95% confidence intervals and bootstrap estimates were calculated with 5,000 samples.

IV. Results

4.1 Descriptive analyses

Victimization

Regarding sexual violence histories, 35.2% and 52.8% of daughters reported CSA and ASV, respectively. For mothers, 70.9% and 75.2% reported CSA and ASV, respectively. Within the sample, perpetrator relationships were identified for CSA and ASV respectively as 8 and 8.7% relatives, 15.7 and 21.3% acquaintances, and 10.4% and 12.8% strangers. For ASV, 12.8% reported perpetration from their romantic partner. Next, 45.5% of mothers reported exposure to lifetime IPV. Regarding psychopathology, 42.6% of mother's scores were indicative of at least mild depression, 25.2% reported scores indicative of current problematic alcohol use, and 18.9% of mother's scores were indicative of probable current PTSD. Pearson correlations were performed to examine correlations between all variables in the model (see Table 1). See Table 2 and 3 for all other demographic information including sexual and gender identity, self-reported frequency of contact with dyad counterpart, and household income.

Sample Differences

Notably, data collected within the undergraduate research pool was completed by daughters first and therefore community data was largely completed by mothers first. Regarding demographics, daughters from the undergraduate research pool (M = 20.72, SD = 3.54) were 95.5% white and 4.5% Native American while community dwelling daughters (M = 22.25, SD = 4.77) were 66.7% white, 21.1% Black/African American, 7.2% Native American, and 4.4%

Asian or Pacific Islander. Regarding sexual violence exposure, 41% of daughters from the undergraduate research pool reported sexual violence victimization after the age of 14 and 15% reported CSA exposure. Conversely, 78.3% of community dwelling daughters reported exposure to sexual violence after age 14 and 44% reported CSA exposure. For mothers of individuals in the undergraduate research pool ((*M* = 50.26, *SD* = 7.62), 91% identified as white, 4.3% identified as Native American, and 4.3% identified as other regarding race while community dwelling mothers (*M* = 45.32, *SD* = 8.28) identified as 65.7% white, 20.8% Black/African American, 9% Native American, and 5.1% Asian/Pacific Islander. Regarding maternal sexual violence exposure, 30.4% of mothers from the undergraduate research pool reported CSA exposure and 47.8% reported sexual violence exposure after age 14. Conversely, 66.9% of community dwelling mothers reported CSA and 83.7% reported sexual violence victimization exposure after age 14.

4.2 Hypothesis Testing

Throughout the results section the following key short cuts will be used for easier reading of results: CSA= Childhood Sexual Abuse, ASV= Adolescent/adulthood sexual violence victimization (i.e., occurring after age 14), lifetime SVV= exposure to any sexual violence throughout the lifespan.

Hypothesis 1. Is intergenerational continuity present for both CSA and ASV?

To test this hypothesis, daughter lifetime sexual violence (outcome variable) was regressed onto maternal lifetime sexual violence (predictor variable) and covariates including maternal age in various models. As hypothesized, intergenerational continuity was supported across the life span (e.g., CSA and/or ASV). In the first model, lifetime SVV predicted increased

risk for lifetime SVV for daughters (b = 2.77, p < .001). All tested pathways of intergenerational continuity of sexual violence were significant (see Figure 3). Further, most models were significant when examined as both dichotomous and continuous variables with some exceptions (see Figure 3). Notably, all models were significant while controlling for both maternal and daughter CSA or ASV as appropriate to account for revictimization effects (i.e., in models where daughter ASV was the dependent variable, daughter CSA was a covariate and vice versa). Further, all models were significant while controlling for maternal age. Findings support intergenerational continuity of sexual violence victimization across the life span between mothers and daughters.

4.2.1 Hypothesis 2a. Does each individual level factor (maternal psychopathology, abuse characteristics, and knowledge of maternal SV exposure) independently mediate or moderate intergenerational continuity of sexual violence victimization across the lifespan?

Maternal Psychopathology. This hypothesis was partially supported. Overall, intergenerational continuity was partially mediated by current maternal psychopathology (i.e., PTSD, depression, and alcohol use). This relationship was present between some forms of sexual violence victimization but not all. Surprisingly, PTSD symptoms only mediated one model of intergenerational continuity of sexual violence. More specifically, maternal CSA predicted increased maternal PTSD symptoms (b = 2.97, p < .01) which in turned predicted increased exposure of ASV in daughters (b = .80, p < .01, 95% CI = .25-2.57).

Next, increased current maternal alcohol use was examined as a potential mediator which was partially supported. More specifically, maternal lifetime sexual violence (i.e., CSA and ASV) exposure predicted increased alcohol use (bs = .77;.06, ps < .001), which in turn, predicted increased risk for daughter CSA (b = .15, p < .001, 95% CI = .05-.18).

As hypothesized, increased current maternal depression symptoms mediated intergenerational continuity, but only for daughter CSA. More specifically, maternal CSA and ASV predicted increased maternal reported depression symptoms (*bs* = .49; .02, *ps* < .001) which in turn predicted increased risk for daughter CSA (b_{mCSA} = .17, p <.01, 95% CI_{mCSA} = [.02-.15]; 95% CI_{mSVV} = [.001-.008]) but this effect was not present for daughter ASV as an outcome.

Abuse Characteristics. Next, abuse characteristics (i.e., frequency, number of abusers, CSA via physical force, sexual contact exposure, and age of onset for CSA) were tested as potential moderators for intergenerational continuity of sexual violence across the lifespan. Moderation analyses operationalized younger and older onset as occurring one or more standard deviation from the mean. For both intergenerational continuity of CSA and ASV, maternal abuse age of onset was the only significant moderator. More specifically, intergenerational continuity of CSA was moderated by age of abuse onset whereby daughters whose mothers experienced CSA at an older age, were more likely to also experience CSA (see Figure 4). Regarding ASV, this relationship was significantly moderated by age of abuse onset whereby daughters whose mothers reported ASV were more likely to experience ASV if their mother experienced abuse onset at a younger age (see Figure 5).

Knowledge of maternal sexual violence exposure. Finally, knowledge of maternal sexual violence exposure was examined as a potential moderator for intergenerational continuity across the lifespan. There was a positive moderation effect of knowledge of maternal sexual violence exposure for ASV, but not for CSA. More specifically, daughters were more likely to experience ASV if they reported awareness of their mother's ASV (see Figure 6).

4.2.2 Hypothesis 2b: Will each microsystem level factor (dysfunctional/maladaptive parenting, connectedness, maternal IPV exposure, and perpetrator characteristics) each independently

mediate or moderate intergenerational continuity of sexual violence victimization across the lifespan?

Parenting Practices. This hypothesis was partially supported. Positive parenting significantly mediated intergenerational continuity of CSA, but not ASV. Maternal CSA predicted decreased use of maternal reported (b = -.14, p < .01) and daughter reported experiences of positive parenting (b = -.11, p < .05). Maternal reported positive parenting in turn predicted decreased daughter CSA exposure (b = -.32, p < .01), but this was not significant for daughter reported positive parenting. Therefore, maternal perceived implementation of positive parenting may act as a protective factor for intergenerational continuity of CSA, but not specifically for ASV.

Next, we examined mediation effects of inconsistent discipline and poor supervision. While maternal ASV exposure predicted poorer supervision, as reported by daughters (b = .01, p < .05), this type of parenting did not in turn predict increased risk for daughter ASV. This effect was also not present for intergenerational continuity of CSA specifically as maternal CSA did not significantly predict implementation of poor supervision as reported by mothers or daughters. Finally, maternal sexual violence across the lifespan did not significantly predict implementation of inconsistent discipline and therefore, inconsistent discipline did not mediate intergenerational continuity of either type of violence exposure.

Perceived Connectedness. Perceived connectedness among mothers and daughters was examined as a potential mediator for intergenerational continuity of sexual violence across the life span. While maternal CSA predicted decreased connectedness as reported by both mothers (b = -.23, p < .001) and daughters (b = -.23, p < .001), this variable did not significantly mediate intergenerational continuity of CSA or ASV.

Intimate Partner Violence. While both maternal CSA (b = .66, p < .01) and ASV (b = .08, p < .001) predicted increased exposure to IPV, this exposure did not significantly predict daughter CSA and ASV exposure and therefore maternal IPV does not significantly mediate intergenerational continuity of sexual violence victimization across the life span.

Abuser Characteristics. Abuser characteristics were examined as potential moderators for intergenerational continuity of sexual violence victimization across the life span. First, abuser sex was examined. Findings suggest intergenerational continuity of ASV was moderated by abuser sex whereby daughters were less likely to experience ASV if their mother experienced female perpetrated ASV (see Figure 7). Further, intergenerational continuity of ASV was moderated by maternal abuser relationship whereby those whose mother experienced ASV whose abuser was related to them were more likely to report ASV (see Figure 8), but this was not significant for those whose mother was abused by a romantic partner, acquaintance, or stranger.

4.2.3 Hypothesis 2c: Will each macrosystem level factor (sex education and social norms supporting violence) independently moderate intergenerational continuity of sexual violence victimization across the lifespan?

Rape Culture. Due to macrosystem level factors being present and acknowledged largely after childhood, only intergenerational continuity of ASV was examined for this hypothesis. Intergenerational continuity was moderated by community presence of hostility toward women. More specifically, daughters were more likely to experience ASV when daughters reported higher levels of hostility toward women within their community (see Figure 9).

Sexual Education Characteristics. Regarding sexual education characteristics, only respect for diversity acted as a significant moderator for intergenerational continuity of ASV. More specifically, daughters were more likely to experience ASV if their mother also experienced this, and their sexual education courses included discussion related to respect for diversity than those whose courses did not discuss respect for diversity related topics (see Figure 10). No other sexual education characteristics significantly moderated intergenerational continuity of ASV.

4.2.4 Hypothesis 3: Will there be significant interplay across levels of risk whereby mothers with sexual violence victimization histories will report increased maternal psychopathology which in turn will predict dysfunctional/maladaptive parenting which will result in intergenerational continuity of sexual violence across the life span?

Models were examined for both maternal and daughter reported parenting styles, but daughter reported parenting did not evidence significant mediation effects within these sequential mediation models. Therefore, the following results refer to parenting practices as reported by mothers. Maternal depression, alcohol use, and PTSD symptoms were examined in sequential mediation models including each type of parenting for CSA and ASV separately. In models examining intergenerational continuity specific to ASV, no sequential mediation models were significant.

Regarding intergenerational continuity of CSA, positive parenting appeared to act as a potential protective factor. More specifically, maternal CSA predicted increased depression symptoms (b = .45, p < .001) which in turn predicted decreased implementation of positive parenting (b = -.13, p = .001). However, increased implementation of positive parenting predicted decreased risk for daughter CSA (b = -.23, p < .01). Due to the indirect effect CI's not

including zero (95% CI = .0001-.0351), this multiple mediation effect is significant. No other parenting practice acted as a significant sequential mediator for this relationship. Similar findings were produced for maternal alcohol use. More specifically, inconsistent discipline and poor supervision did not sequentially mediate intergenerational continuity of CSA, but positive parenting appeared to act as a protective factor. Maternal CSA predicted increased self-reported alcohol use (b = .66, p < .001) and increased self-reported alcohol use predicted decreased implementation of positive parenting (b = -.09, p < .001). However, increased positive parenting predicted decreased risk for daughter CSA (b = -.16, p < .05, 95% CI = .003-.03). Notably, parallel findings were produced for maternal PTSD symptoms. Maternal CSA predicted increased self-reported PTSD symptoms (b = 1.32, p < .001), increased self-reported PTSD symptoms predicted decreased implementation of positive parenting (b = -.04, p < .01). But, increased positive parenting predicted decreased risk for daughter CSA (b = -.32, p < .01, 95% CI = .001-.04). Neither inconsistent discipline nor poor supervision sequentially mediated the effect of PTSD symptoms for intergenerational continuity of CSA.

V. Discussion

While there is strong support for intergenerational continuity of CSA in the current body of literature (Grunsfeld, 2018; Trickett et al., 2011), little investigation has focused on these effects outside of childhood. This study aimed to fill this important gap in the literature. Further, this study aimed to identify interacting risk factors across socio-ecological levels that may contribute to intergenerational continuity of sexual violence. This study examined the effects of maternal psychopathology and characteristics of abuse at the individual level, parenting, maternal intimate partner violence exposure, and maternal perpetrator characteristics at the microsystem level and sex education characteristics and community tolerance of violence at the

macrosystem level. Further, to test the developmental psychopathology theory, this study examined the influence of risk across levels whereby maternal sexual trauma exposure would predict disrupted psychopathology, ultimately adversely impacting parenting resulting in intergenerational continuity of violence.

Intergenerational Continuity

As hypothesized, intergenerational continuity was supported throughout the lifespan (see Figure 3). This was the case for all models of intergenerational continuity using continuous measures and most using dichotomous measures of sexual violence exposure. Therefore, for young adult daughters whose mothers experienced sexual violence at any time throughout their lives, they were more likely to report these experiences as well.

Individual Level Risk Factors

Regarding individual level mechanisms for intergenerational continuity, findings were mixed. Overall, findings suggest, current maternal psychopathology (depression symptoms, PTSD symptoms, and increased alcohol use) partially explain intergenerational continuity of sexual violence. More specifically, maternal psychopathology mediated models examining daughter CSA as the outcome, but not daughter ASV. However, these mediation effects were present for maternal sexual violence exposure across the lifespan (i.e., CSA or ASV) suggesting a significant effect of maternal psychopathology on intergenerational continuity of sexual violence.

Next, abuse characteristics were examined as potential moderators for intergenerational continuity of sexual violence. Age of abuse was the only significant moderator of intergenerational continuity of both CSA and ASV; however, these operated in opposite

directions. For CSA, daughters were more likely to report CSA exposure if their mothers reported an older abuse onset of CSA. Conversely, for ASV, daughters were more likely to report this experience if their mothers with ASV histories reported a younger abuse onset of CSA. These findings mirror mixed support in the current literature on revictimization (Banyard & Williams, 1996). More specifically, for some, older abuse onset results in increased feelings of powerlessness and fear resulting in developing psychopathology (Banyard & Williams, 1996). This may contribute to intergenerational continuity of CSA. However, for others, experiencing sexual violence at a very young age can be extremely overwhelming and frightening resulting in disrupted recovery from this experience (Banyard & Williams, 1996).

Finally, daughter's knowledge of maternal exposure to sexual violence was examined as a potential moderator for intergenerational continuity. Surprisingly, findings suggest knowledge of maternal sexual violence exposure increased risk for intergenerational continuity. While research highlights awareness of sexual assault and rape as a potential protective factor against sexual violence victimization (Santelli et al., 2018), the specific messages and information received may contribute to the helpfulness of this knowledge. Studies suggest sexual education with a focus on refusal tactics was efficacious in preventing rape and sexual assault in women (Santelli et al., 2018).. Further, lack of salient information related to mother's sexual violence exposure or receipt of maternal hopelessness may promote hopelessness or distress for their daughters. Partial support of this potential effect is evidenced in literature examining intergenerational transmission of trauma within Indigenous Peoples, combat Veterans, and Holocaust survivors. More specifically, exposure to cumulative trauma may result in internalized shame, distress and hopelessness that is transmitted to future generations (Aguiar & Halseth, 2015; Danieli, 1985; Dekel & Goldblatt, 2008). Disclosure of sexual violence victimization is a

personal and highly stigmatized experience due to the potential for adverse reactions (Smith & Cook, 2008); the level of intimate detail shared with children may not include details related to prevention resulting in an adverse effect. Additionally, literature suggests a "conspiracy of silence" effect whereby parental trauma is not directly communicated, but children become aware through nonverbal communication (Bombay et al., 2009; Danieli, 1998). This form of communication about trauma may increase risk for intergenerational continuity (Bombay et al., 2009). In this study, participants did not report how they became aware of maternal sexual violence exposure and therefore, this effect may be indicative of the "conspiracy of silence". Encouragingly, literature suggests hope can be transmitted across generations (Redlich-Amirav et al., 2023) and therefore, this may be a salient approach to self-disclosure of sexual violence between mothers and daughters to prevent this cycle of violence.

Microsystem Level Risk Factors

Findings support the extant literature regarding the protective nature of engagement in positive parenting (Sanders, 2008; Testa et al., 2012). While mothers with sexual violence histories are less likely to implement positive parenting, when utilized, these parenting tactics decrease risk for daughters. Therefore, interventions aimed at parenting skills in women with sexual violence histories should emphasize implementing positive parenting techniques rather than decreasing implementation of parenting deemed "negative" such as inconsistent discipline and poor supervision.

Despite increased risk for maternal IPV exposure for those with sexual violence victimization histories, this did not mediate intergenerational continuity. While there is a high level of interconnectedness of IPV and sexual violence (Hamby & Grych, 2013), this finding may be due to low rates of reported IPV exposure within this sample. Further, IPV may not have

been influential in intergenerational continuity due to low rates of perpetration by romantic partners of sexual violence within this sample. Outside of sample characteristics, research suggests increased severity of IPV leads to a shift for survivors and often prompts leaving the relationship (Chang et al., 2010). For many, sexual violence and/or rape represents the escalation point of highest severity prompting this cognitive shift (Chang et al., 2010). This may have influenced the effect of IPV on intergenerational continuity because sexual violence may represent the highest severity of IPV experienced for many survivors in this sample making the specific IPV exposure less impactful.

Regarding abuser characteristics, abuser sex and abuser relationship both independently moderated intergenerational continuity of sexual violence victimization. More specifically, daughters were more likely to report sexual violence victimization when their mother's abuse was perpetrated by males. Further, daughters were more likely to report sexual violence exposure if their mother's perpetrator was a relative than those whose mothers reported abuse perpetrated by non-relatives. Such findings are consistent with previous literature suggesting abuse perpetrated by relatives results in familial dysfunction that may contribute to intergenerational continuity (de Jong & Bijleveld, 2015). Additionally, although not formally measured by this study, high rates of familial perpetration suggest potential for dyads having a shared perpetrator which may have contributed to this finding.

Macrosystem Level Risk Factors

Findings suggest rape culture within an individual's community may influence intergenerational continuity. More specifically, daughters were more likely to report sexual violence exposure if their mothers reported this experience, and they reported higher levels of hostility toward women within their communities. Hostility toward women is hypothesized to

justify and legitimize violence against women and those holding these views have been found to report increased perpetration of sexual violence (Johnson & Johnson, 2017).

Examination of moderating effects of sexual education characteristics revealed only respect for diversity as a contributing factor to intergenerational continuity of sexual violence. Surprisingly, those reporting increased exposure to diversity topics in their sexual education courses were more likely to report sexual violence exposure when their mothers also reported this experience. While potentially an artifact of this specific sample, this finding may be consistent with findings suggesting that educational programming aimed at changing attitudes may have adverse effects if not conducted with the appropriate emphasis, frequency, and duration (Carmody & Carrington, 2000). More specifically, research suggests short-term educational programming aimed at changing rape and diversity related beliefs resulted in exacerbation of the targeted attitudes in the long-term (Carmody & Carrington, 2000). Beliefs related to diversity and sexual assault are deeply ingrained and therefore exposure to alternative messages across a short period of time may not be effective in making long-term changes in these areas (Carmody & Carrington, 2000). Further, Malamuth and colleagues (2018) suggest boomerang effects are present for high-risk males completing sexual violence interventions due to perceiving these interventions as "preaching" leading to reactive anger and hostile behaviors. Such effects may parallel that of interventions aimed at promoting respect for diversity as sexist and racist beliefs are highly interrelated (Bergh et al., 2016). Therefore, this finding may reflect a rebound effect due to minimal, short-term focus related to respect for diversity within individuals' sexual education.

Interaction Across Socioecological Levels

Consistent with developmental psychopathology theory (Cicchetti & Toth, 2009), results suggest sexual trauma instigates psychopathology which in turn disrupts parenting behaviors and ultimately results in intergenerational continuity of sexual violence. More specifically, maternal PTSD, alcohol use, and depression symptoms predicted decreased implementation of positive parenting resulting in intergenerational continuity of sexual violence. Notably, while mothers reported increased engagement in dysfunctional parenting practices such as inconsistent discipline and poor supervision, these types of parenting did not significantly mediate intergenerational continuity of sexual violence. Therefore, increased engagement in positive parenting may serve as a significant protective factor for intergenerational continuity of sexual violence even when maternal recovery is disrupted through development of psychopathology. This serves as an important future target of intervention for women experiencing CSA and ASV in order to prevent cycles of violence with a focus on teaching effective implementation of positive parenting rather than attempting to decrease maladaptive parenting practices.

5.1 Limitations

First, while this study focused on sexual violence, exposure to other forms of childhood abuse may have confounded these results (Moylan et al., 2010; Walsh et al., 2012). Therefore, these experiences should be accounted for in future studies of intergenerational continuity of sexual violence. Next, this study did not examine whether daughters and mothers were abused by the same perpetrator. This proximity to perpetration may play a large role in intergenerational continuity and should be examined in future studies. While this sample evidenced differential degrees of communication within dyads, this study was likely unable to gather data from completely estranged dyads or those separated during daughter's early development (i.e., those who were adopted, grew up in foster care, or raised by a relative). These dyads would likely

provide important information about intergenerational continuity of sexual violence and risk factors for this phenomenon.

Due to the largely exploratory nature of this study, psychopathology was measured via self-report measures and participants were asked to report *current* psychopathology symptoms. Consistent with the developmental psychopathology theory, symptomatology during daughter's formative years may represent a more direct effect on parenting practices employed during childhood. However, these forms of psychopathology tend to be chronic (Fava & Kendler, 2000; McKay, 2009; Zlotnick et al., 1999). Further, when completing measures of PTSD symptoms, participants were not oriented to identify their sexual trauma exposure as the index trauma. Examining this in the future may provide a more accurate representation of PTSD within the sample. The APQ, used to measure parenting practices within this study, has evidenced reliability below accepted levels in previous studies. While this measure evidenced appropriate validity within this sample (i.e., $\alpha > .7$), results related to parenting practices should be interpreted in the context of this measure's limitation. This study also only examined the impact of alcohol use rather than including other problematic substance use which is essential to examine in future research due to high levels of substance use within this population (INSERT). Next, within this study, participants were asked to report CSA as occurring prior to age 14 and ASV as occurring after age 14; however, ASV and CSA were highly correlated within this study suggesting there may have been some overlap in sexual violence reported due to difficulty differentiating this timeline. Sexual education characteristics were examined using suggested scoring and factors presented by the measure's authors (Godin & Razzano, 2013); however, since exposure alone is not enough to create attitude changes related to sexual violence (Carmody & Carrington, 2000), quantifying the emphasis placed on these topics within sexual education courses is necessary.

Further, this study did not directly examine intergenerational continuity of sexual violence across cultures which is an essential next step for this type of research.

5.2 Future Directions

Examination of maternal treatment seeking history would represent an important potential factor for decreasing intergenerational continuity of sexual violence and therefore, future research should examine this. Next, future studies should include fathers and sons to examine differential effects on intergenerational continuity of sexual violence based on gender. Third, while this study examined perpetrator characteristics, future studies should account for whether mothers and daughters reported perpetration from the same individual as this may be a significant contributor to intergenerational continuity of sexual violence. Due to the strong support from this study as well as others (Testa et al., 2011), future research should apply findings related to implementation of positive parenting to clinical interventions for mothers with sexual violence histories to examine whether this intervention can disrupt this cycle of violence. Within this study, substance use focused on alcohol use, but future research should examine other types of substances as substance use is much more complex than how it was examined within this study. While this study examined the effects of community level risk factors such as sexual education characteristics, exposure alone to diversity related topics is not enough to combat these strongly ingrained beliefs and therefore, future research should examine how to effectively include diversity related topics within sexual education courses in order to promote acceptance, inclusion, and local and regional application.

Very importantly, while this was a racially diverse sample, future research should examine intergenerational continuity and relevant risk factors in the context of different cultures as this may significantly impact these relationships, especially within cultures where

intergenerational continuity of violence is already well established. More specifically, research suggests individuals within minoritized groups (e.g., Black, African American and Native American) are more likely to experience sexual trauma, evidence high rates of intergenerational continuity of this violence, and report significantly more disrupted recovery from these experiences as evidenced by increased mental health symptomatology, disrupted interpersonal and familial relationships, and risk for exposing children to sexual abuse perpetrators (Bryant-Davis et al., 2009; Leifer et al., 2004). Elucidating which of these factors may be influential in intergenerational continuity of sexual violence within these communities is vital. There is currently significant literature examining individual and familial level risk factors, but continued research is necessary in this area for community and societal level risk as well as the salient interplay across levels of risk perpetuating this cycle of violence within ethnically minoritized groups. Because sexual assault of ethnically minoritized individuals occurs at the "intersection of intergenerational trauma, racism, sexism, and poverty" (Bryant-Davis et al., 2009), it is essential to examine intergenerational continuity of sexual violence within these specific cultural groups. Additionally, identification of possible protective factors against this continuity to prevent sexual violence victimization for future generations is also needed. For example, this study suggests engagement in positive parenting may protect future generations from experiencing sexual violence, despite mother's recovery from these experiences. The current literature suggests sexual violence exposure in ethnically minoritized individuals may disrupt attachment, parenting, and overall relationship quality between abused mothers and daughters; however, this appears to occur within the context of other socio-ecological factors such as poverty, historical trauma, and barriers to obtaining protection and assistance such as discrimination, stigma, and understandable

mistrust (Bryant-Davis, 2009, Yellow Horse Brave Heart, 1999). Therefore, the important next steps of this research should be focused in cultural contexts.

5.3 Conclusions, Strengths, and Clinical Implications

First, this research fills an important gap in the current body of literature by examining and providing support for the presence of intergenerational continuity of sexual violence victimization outside of childhood. Further, this study implemented a national, online sample where mother-daughter relationships varied in strength. More specifically, communication among dyad members was reported as ranging from frequent to none suggesting this study was able to examine this relationship even among estranged mothers and daughters. Next, this study examined mechanisms for intergenerational continuity of sexual violence across socioecological levels rather than focusing on mothers' whose trauma is not their fault. This will allow for support and validation for mothers with sexual violence histories through informed interventions related to parenting as well as provide salient information about interventions and changes needed at a systemic level to prevent cycles of violence. More specifically, this study provides salient information of how we can inform education, community beliefs, and intervention for women experiencing sexual violence in order to prevent cycles of violence. Finally, this study's sample was racially inclusive allowing for representation of those within minoritized groups; however, it is essential to continue to do this research within the context of different cultural groups to determine how intergenerational continuity varies across cultures.

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Table 1

Descriptive statistics and correlations among study variables of intergenerational continuity and proposed mechanisms.

	M(SD)	1.	2.	3.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1. Daughter Age	22.20(4.993)	--	.55**	-.14*	-.12	-.06	-.18*	-.16*	-.14*	-.08	.13	.074	.069	-.08	-.05	.119	.065	-.01	.09	-.28**	-.07	.003	.04
2. Mother Age	45.58(8.692)		--	-.33**	-.26**	-.24**	-.26**	-.28**	-.29**	-.25**	.26**	-.03	.01	-.24**	-.17*	.22**	-.09	-.23**	.30**	-.29**	-.05	-.00	.07
3. Daughter CSA	4.39(5.02)			--	.79**	.70**	.61**	.66**	.69**	.56**	-.29**	-.01	.26**	.64**	.57**	-.45**	.09	.38**	-.52**	.62**	.11	.22**	-.07
4. Mother CSA	5.07(5.33)				--	.63**	.65**	.67**	.62**	.60**	-.17*	.10	.28**	.60**	.55**	-.36**	.06	.33**	-.45**	.60**	.19**	.22**	.04
5. Daughter ASV	22.725(27.49)					--	.78**	-.58**	.52**	.46**	-.08	.037	.29**	.42**	.40**	-.33**	.15*	.40**	-.39**	.65**	.01	.15*	.02
6. Mother ASV	77.79(27.49)						--	.62**	.57**	.54**	.08	.11	.18**	.42**	.45**	-.28**	.09	.38**	-.35**	.71**	-.01	.22*	.023
7. Mother PHQ-9	8.18(5.822)							--	.70**	.82**	-.15	.06	.16*	.50**	.56**	-.42**	.13	.49**	-.45**	.54**	.12	.28**	.02
8. Mother AUDIT	10.77(8.82)								--	.72**	-.12	.05	.18**	.54**	.48**	-.44**	.12	.46**	-.50**	.60**	.09	.26**	-.00
9. Mother PCL-5	26.63(16.244)									--	-.01	.10	.20**	.40**	.47**	-.40**	.16*	.52**	-.38**	.36**	.13	.28**	.11
10. Mother ASV frequency	4.51(4.36)										--	.19*	.06	-.09	-.02	.16	.20*	.08	.23**	-.17	-.14	.06	.18*
11. Abuser Gender	.04(.19)											--	.41**	-.05	-.02	.04	.01	.25	.01	.01	.70	.13	.01
12. Perpetrator Related	.09(.28)												--	.25**	.12	-.09	.14	.16*	.01	.18	.09	-.07	.11
13. Knowledge of Maternal CSA	.43(.49)													--	.68**	-.43**	.01	.26**	-.45**	.24*	.09	.07	-.17*
14. Knowledge of Maternal ASV	.57(.49)														--	-.43**	-.08	.24**	-.51**	.38**	.03	-.01	-.21**

15. Positive Parenting	8.33(2.59)															--	.10	-.31**	.58**	-.28**	.06	.03	.27**
16. Inconsistent Discipline	5.70(2.37)																--	.42**	.06	.17	-.12	.15*	.35**
17. Poor Supervision	4.94(2.43)																	--	-.29**	.18	.04	.17*	.11
18. Connectedness	11.03(4.02)																		--	-.29**	.03	-.04	.23**
19. Mother Lifetime IPV	16.83(13.59)																			--	.06	.09	.09
20. Rape Culture	195.20(100.92)																				--	.35**	.04
21. Hostility toward women	18.30(5.68)																					--	.22**
22.Respect for Diversity in Sexual Education	12.60(3.37)																						--

Note. CSA= childhood sexual abuse as measured by the CTQ (Childhood Trauma Questionnaire, ASV = adolescent/adult sexual violence victimization score as measured by the Sexual Experiences Survey, short form, PHQ-9 = Patient Health Questionnaire-9, AUDIT = Alcohol Use Disorder Identification Test, PCL-5 = The PTSD Checklist for DSM-5, IPV = Intimate Partner Violence as measured by the CASR-SF (Composite Abuse Scale (Revised)-Short Form.

*** p <.001, ** p <.01, *p <.05

Table 2

Mother Sample Characteristics and Frequencies

Variable	Percentage
No Contact with Daughter	2.2%
Occasional Daughter Contact	19.2%
Frequent Daughter Contact	65.7
Sex, Gender, Sexuality	
Sex at Birth -male	.4%
Sex at Birth -female	91.9%
Sex at Birth -intersex	.1%
Cisgender	82%
A-gender	6.1%
Two-Spirit	.6%
Gender Fluid	1.2%
Non-binary	.1%
Transgender	1.9%
Heterosexual	86.9
Bisexual	3.1%
Gay or Lesbian	.9%
Queer	.4%
Two-Spirit	.6%
Asexual	.1%
Fluid	.1%
Pansexual	.1%
Race	
Asian American Pacific Islander (AAPI)	5%
Black/African American	14.9%
Native American	8%
White	64.8%
Other	.1%
Hispanic or Latina/o/x	18.8%
Household Income (in US Dollars)	
0-19,999	2.5%
20,000-39,999	10.2%
40,000-59,999	20.5%
60,000-79,999	29.4%
80,000-99,999	15.1%
100,000 and above	13.4%
Not sure	1%
Sexual Violence Victimization History	
ASV	75.2%
CSA	70.9%

Note. CSA= childhood sexual abuse as measured by the CTQ (Childhood Trauma Questionnaire, ASV = adolescent/adult sexual violence victimization score as measured by the SES-SFV (Sexual Experiences Survey, short form) as reported by mothers.

Table 3

Daughter Sample Characteristics and Frequencies

Variable	Percentage
No Mother Contact	1.3%
Occasional Mother Contact	14.6%
Frequent Mother Contact	45.1%
Sex, Gender, Sexuality	
Sex at Birth -male	3.1%
Sex at Birth -female	83.4
Sex at Birth -intersex	.6%
Cisgender	77.9%
A-gender	5.1%
Two-Spirit	.6%
Gender Fluid	.9%
Non-binary	.4%
Nonconforming	.1%
Transgender	1%
Heterosexual	75.8%
Bisexual	7.5%
Gay or Lesbian	.7%
Queer	.4%
Two-Spirit	.3%
Asexual	.4%
Questioning	.1%
Pansexual	.4%
Other	.3%
Race	
AAPI	5.2%
Black/African American	14.9%
Native American	9.6%
White	61.5%
Other	1.6%
Hispanic or Latina/o/x	19.1%
Income	
0-19,999	1.9%
20,000-39,999	6.9%
40,000-59,999	19.4%
60,000-79,999	25.2%
80,000-99,999	14.6%
100,000 and above	12.8%
Sexual Violence Victimization History	
ASV	52.8%
CSA	35.2%

Note. CSA= Childhood sexual abuse as measured by the CTQ (Childhood Trauma Questionnaire, ASV= Adolescent/adult sexual violence victimization score as measured by SES-SFV (Sexual Experiences Survey, short form) as reported by daughters

Table 4

Maternal Sexual Violence Exposure effect on Daughter Sexual Violence exposure via maternal psychopathology

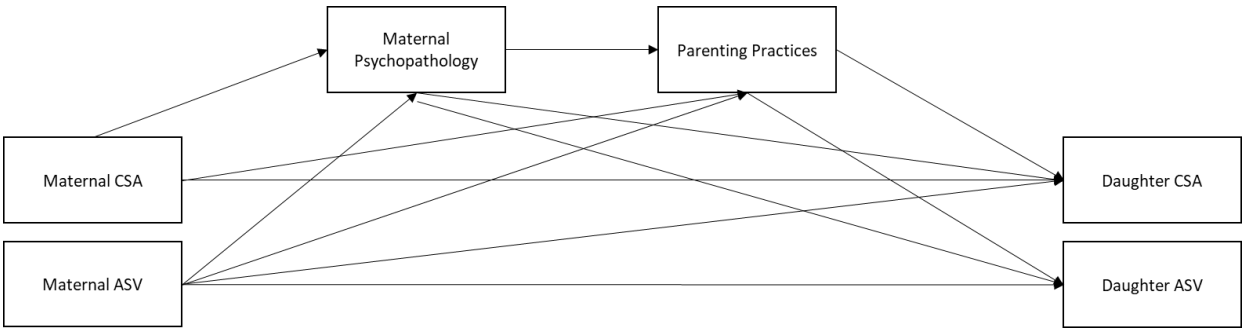
	DV: Daughter CSA				DV: Daughter ASV	
Variables	*B*	*SE*			*B*	*SE*
Age	-.07*	.03			-.08	.14
Maternal CSA	.62**	.05			1.02**	.30
Maternal ASV	.01*	.003			.22**	.02
Daughter CSA	--	--			2.20**	.37
Daughter ASV	.07**	.01			--	--
	Med.$_1$ Maternal PHQ-9		*Med.$_2$ Maternal AUDIT*		*Med.$_2$ Maternal PCL-5*	
	B	*SE*	*B*	*SE*	*B*	*SE*
Age	*-.05*	.03	*-.06*	*.05*	*-.18*	*.11*
Maternal CSA	*.46***	*.07*	*.67***	*.12*	*1.29***	*.23*
Maternal ASV	.02**	.01	*.02***	*.01*	*.05***	.02
Daughter CSA	.31**	.10	*.83***	*.15*	*.05***	.02
Daughter ASV	.02	.02	*.02*	*.03*	*-.02*	.06
	DV: Daughter CSA				DV: Daughter ASV	
	B	*SE*			*B*	*SE*
Age	-.06*	.03			-.06	.14
Maternal CSA	.54**	.06			.81*	.33
Maternal ASV	.01	.004			.21**	.02
Daughter CSA	--	--			2.19**	.37
Daughter ASV	.07**	.01			--	--
Maternal PHQ-9	.17**	.05			.41	.29
Maternal AUDIT	.16**	.03			-.29	.18
Maternal PCL-5	.03*	.02			-.12	.09

Note. CSA = continuous measure of CSA exposure as measured by CTQ, ASV = continuous measure of adolescent/adult sexual violence victimization as measured by the SES-SFV, PHQ-9 = continuous measure of self-reported, current maternal depression symptoms, AUDIT = continuous measure of self-reported, current maternal alcohol use, PCL-5 = continuous measure of self-reported, current maternal PTSD symptoms.

$^{**}p \leq .01$, $^{*}p \leq .05$

Figure 1

Serial Mediation Model for the Effects of Maternal Psychopathology and Parenting on Intergenerational Continuity of Sexual Violence Across the Lifespan.



Note. CSA = total CSA scores on CTQ; ASV = total sexual violence victimization scores on SES-SFV; Maternal Psychopathology = Depression (PHQ-9), PTSD (PCL-5), and Alcohol Use (AUDIT) scores; Parenting Quality = IBQ-E and Connectedness scores; Parenting Practices = APQ-9 scores.

Figure 2

Data Cleaning Flow Chart

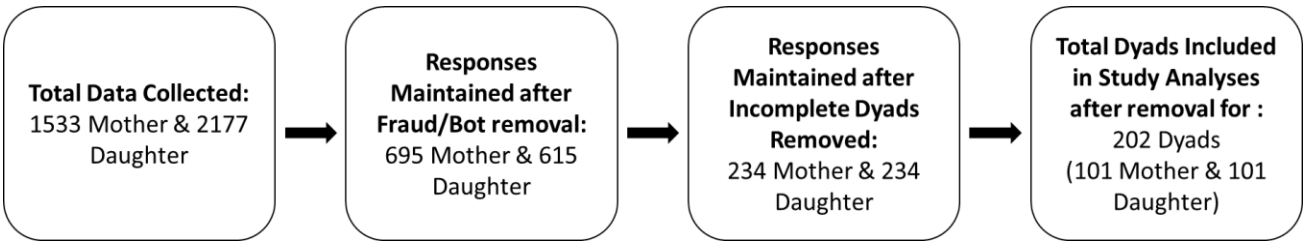
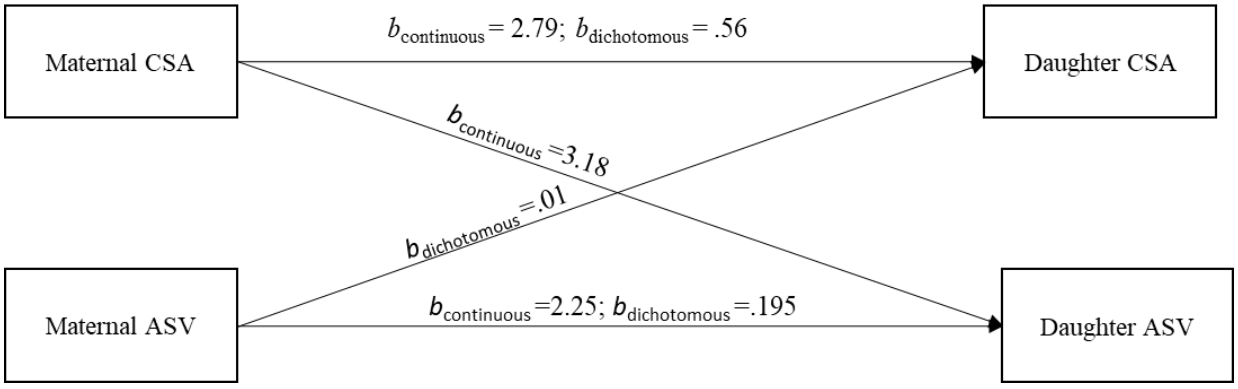


Figure 3

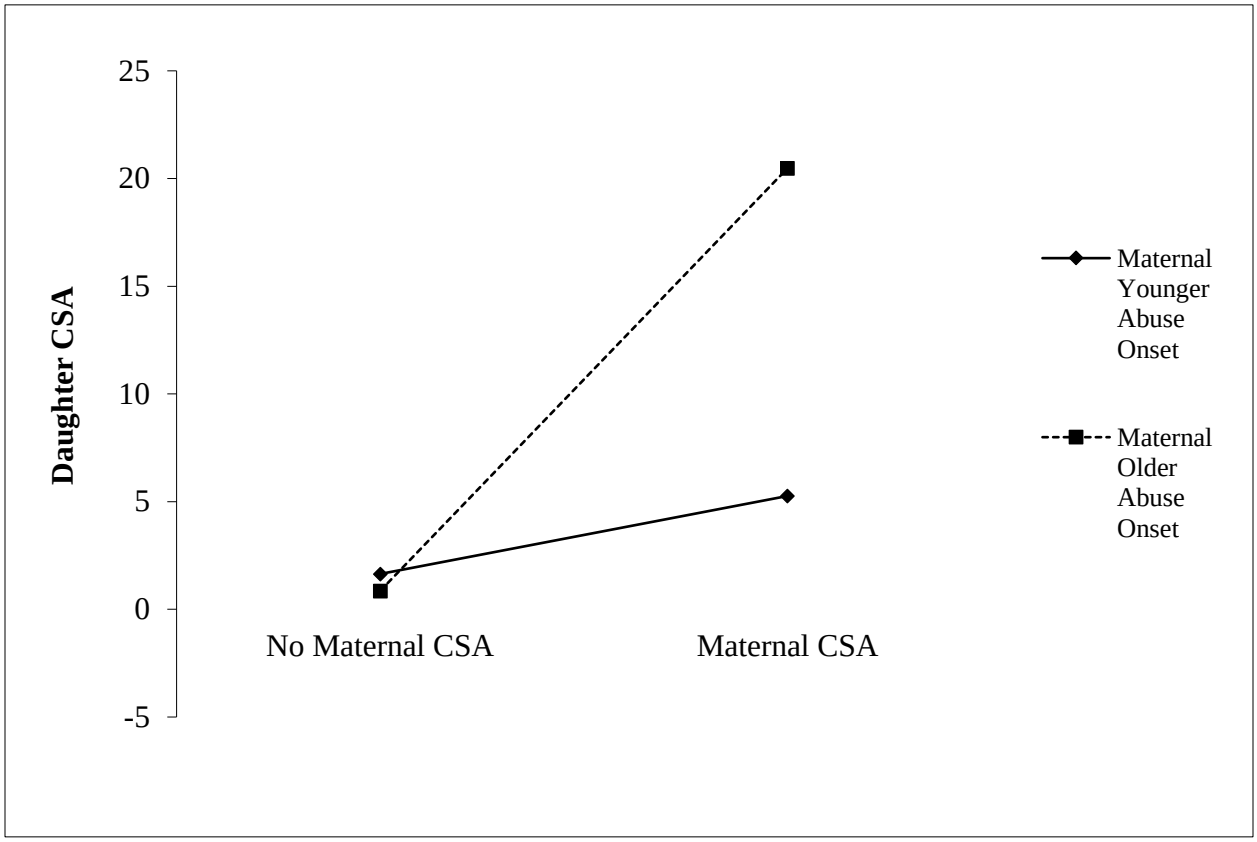
Statistical Model Testing Intergenerational Continuity of Sexual Violence Across the Lifespan



Note. CSA = dichotomous and total CSA scores on CTQ; ASV = dichotomous and total sexual violence victimization scores on SES-SFV. Solid paths represent a significant association at or below .01 significance level with significant b weights included.

Figure 4

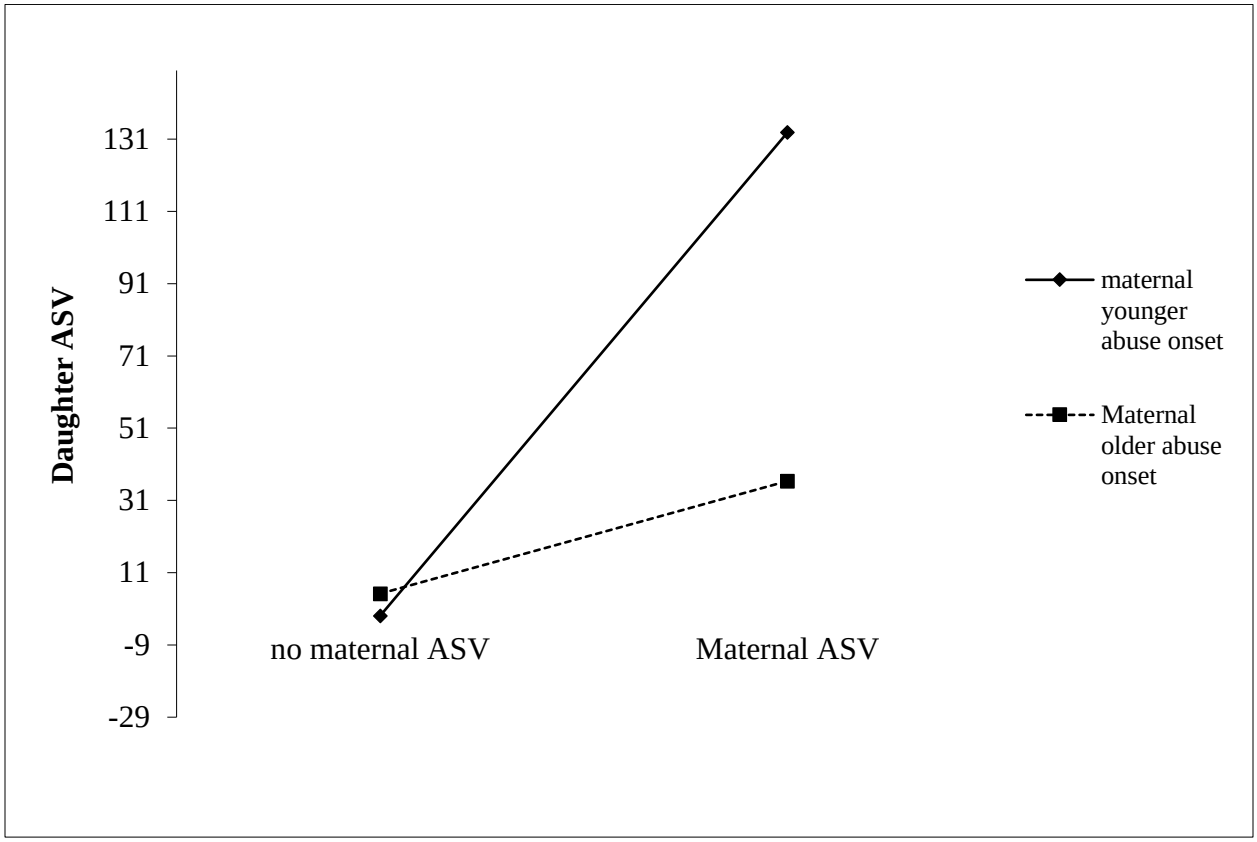
Moderation Effect of Abuse Onset Age on Intergenerational Continuity of CSA



Note. Age of abuse onset moderation of maternal CSA on daughter CSA. CSA = continuous CSA scores on CTQ.

Figure 5

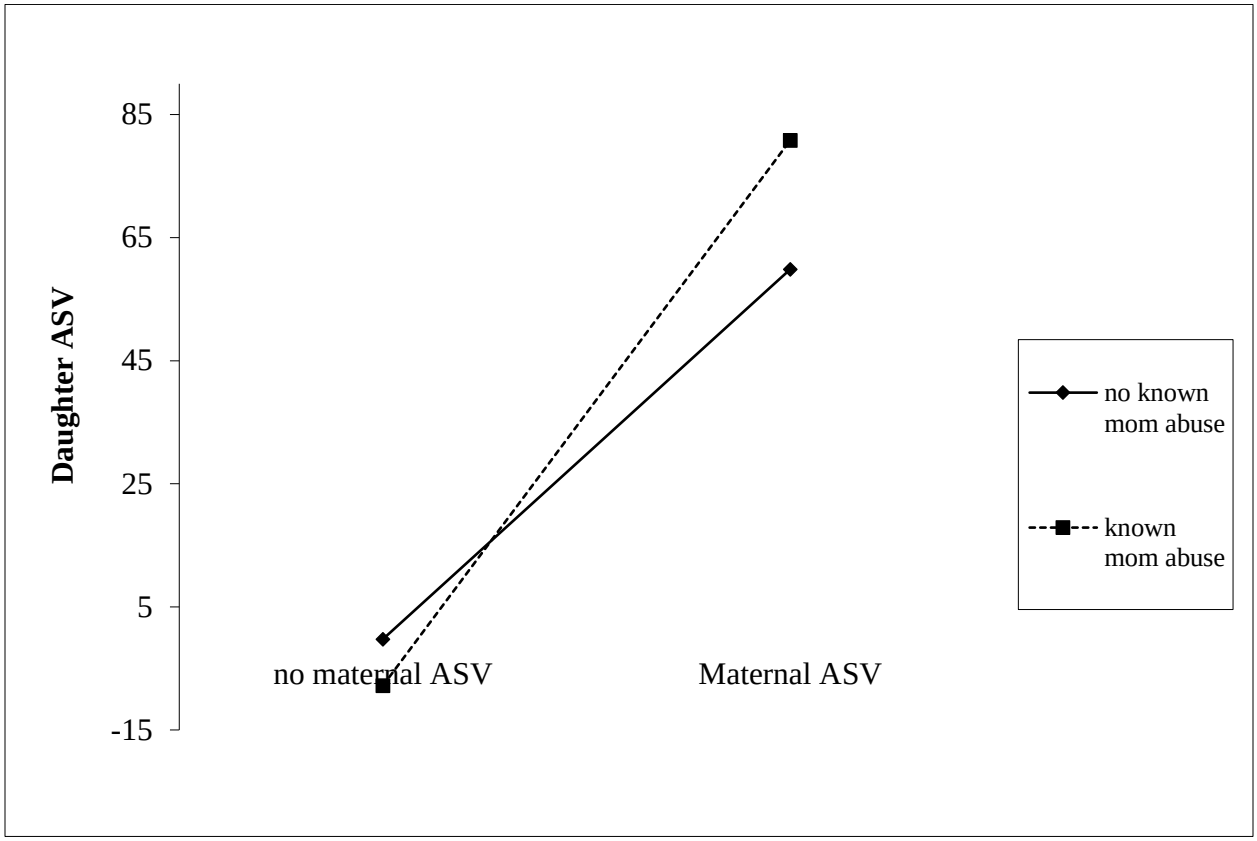
Moderation Effect of Age of Abuse Onset on Intergenerational Continuity of Adolescent/Adult Sexual Violence Victimization.



Note. Age of abuse onset moderation of maternal adolescent/adult sexual violence victimization on daughter adolescent/adult sexual violence victimization. ASV = continuous sexual violence victimization scores on SES-SFV.

Figure 6

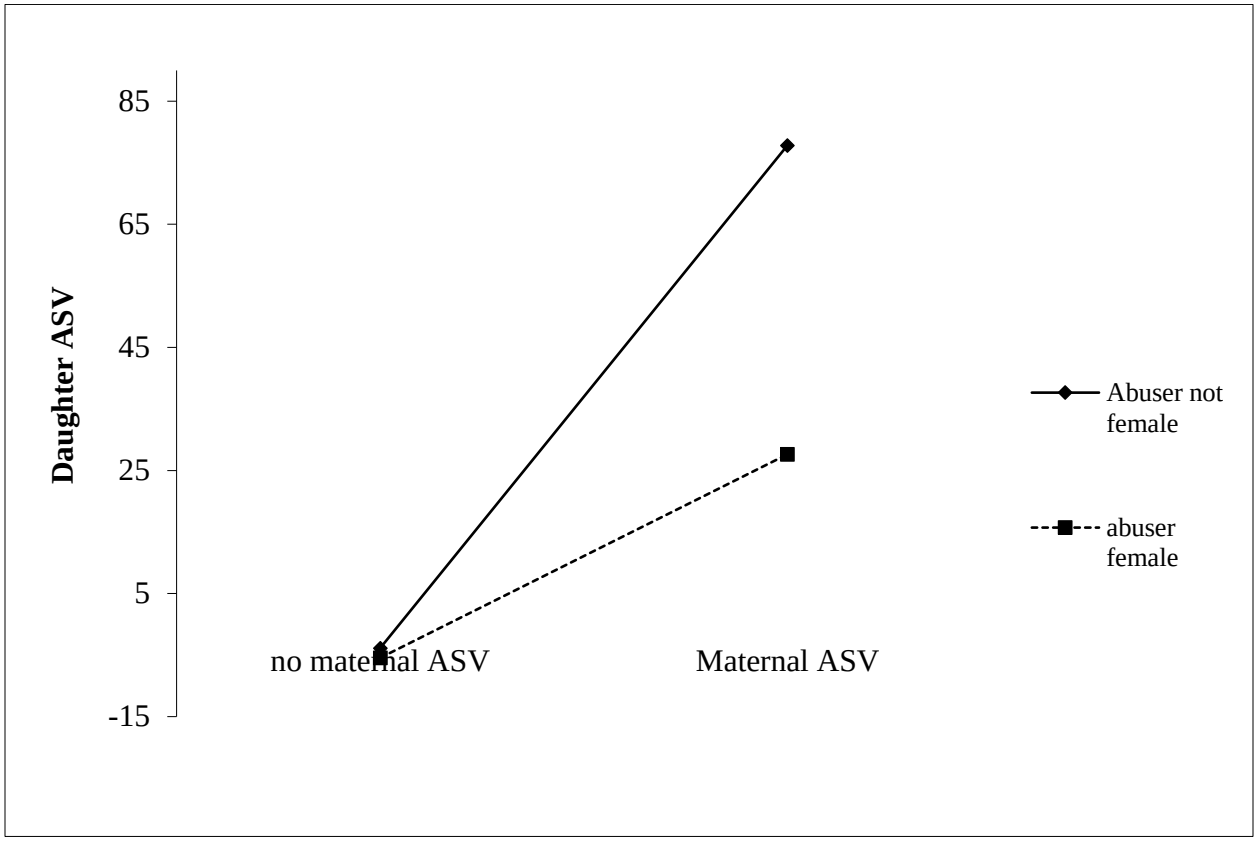
Moderation Effect of Knowledge of Maternal Sexual Violence Exposure on Intergenerational Continuity of Adolescent/Adult Sexual Violence Victimization



Note. Knowledge of maternal abuse moderation of maternal adolescent/adult sexual violence victimization on daughter adolescent/adult sexual violence victimization. ASV = continuous sexual violence victimization scores on SES-SFV.

Figure 7

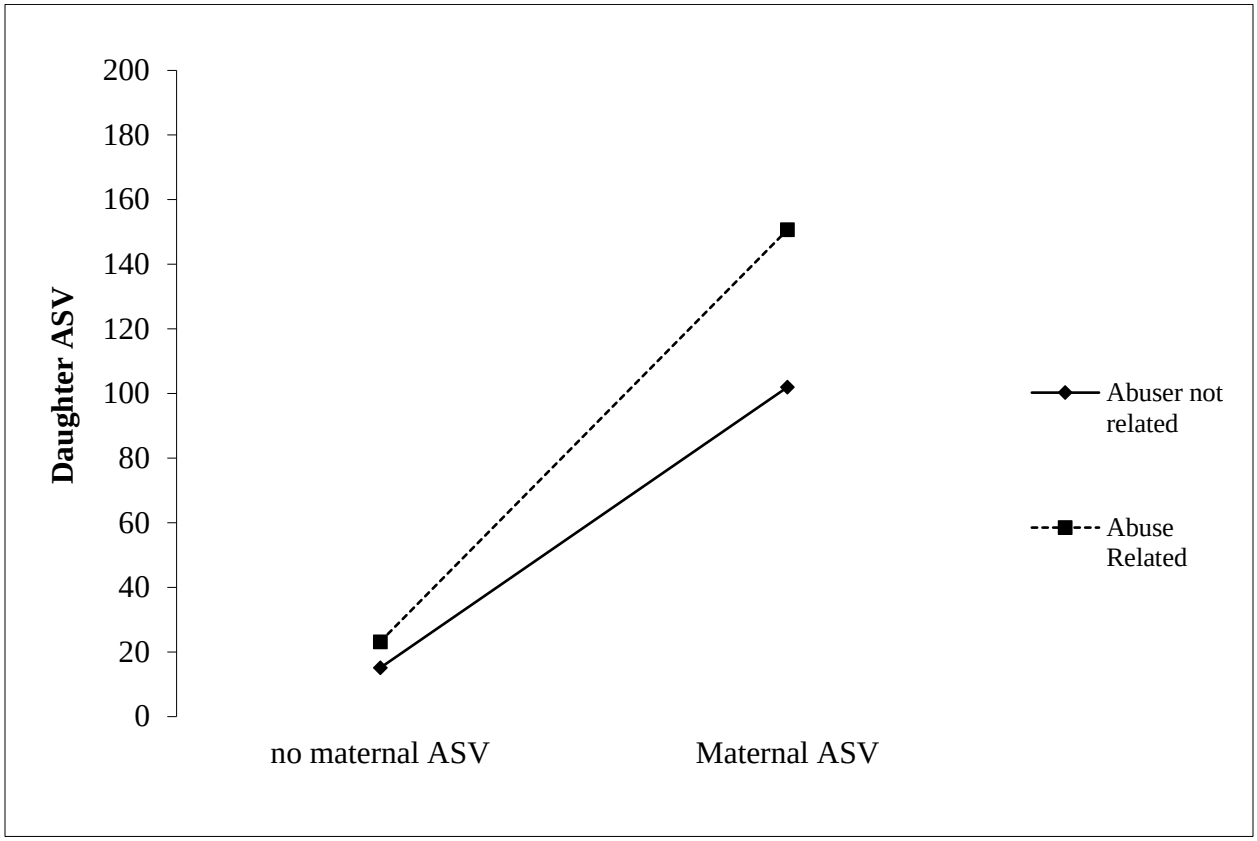
Moderation Effect of Abuser Sex on Intergenerational Continuity of Adolescent/Adult Sexual Violence Victimization



Note. Abuse sex moderation effect of maternal adolescent/adult sexual violence victimization on daughter adolescent/adult sexual violence victimization. ASV = continuous sexual violence victimization scores on SES-SFV.

Figure 8

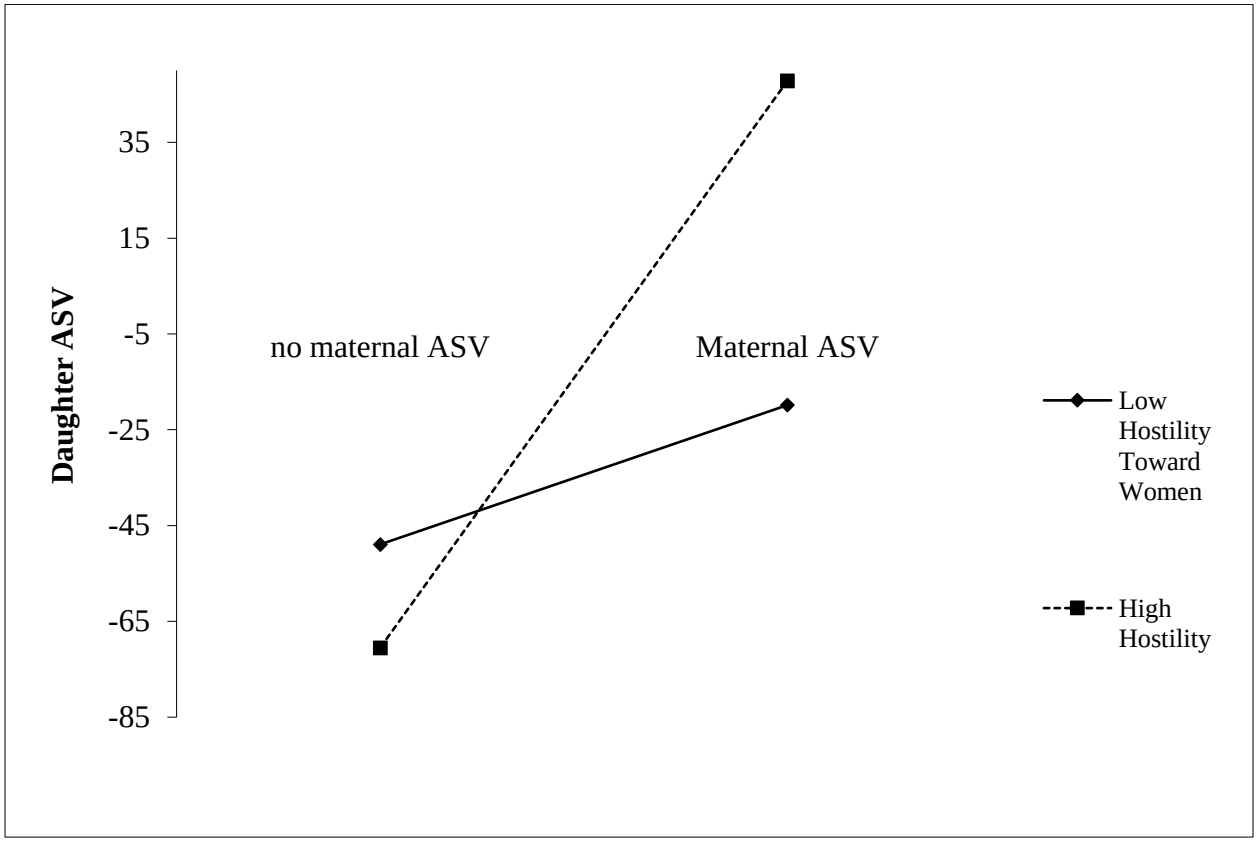
Moderation Effect of Abuser Relation on Intergenerational Continuity of Adolescent/Adult Sexual Violence Victimization



Note. Abuser relation moderation effect of maternal adolescent/adult sexual violence victimization on daughter adolescent/adult sexual violence victimization. ASV = dichotomous and total sexual violence victimization scores on SES-SFV.

Figure 9

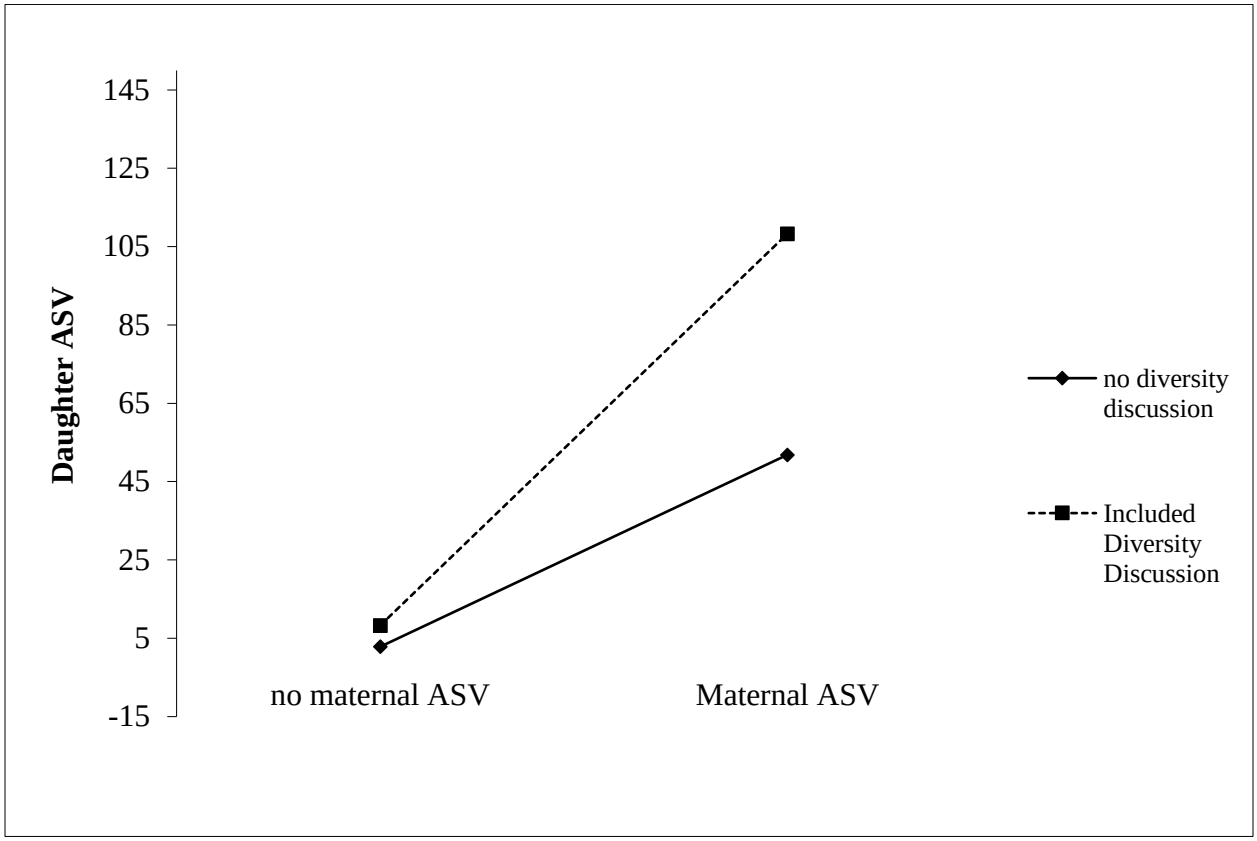
Moderation Effect of Hostility Toward Women on Intergenerational Continuity of Adolescent/Adult Sexual Violence Victimization



Note. Hostility toward women moderation effect of maternal adolescent/adult sexual violence victimization on daughter adolescent/adult sexual violence victimization. ASV = dichotomous and total sexual violence victimization scores on SES-SFV.

Figure 10

Moderation Effect of Diversity Discussions within Sexual Education on Intergenerational Continuity of Adolescent/Adult Sexual Violence Victimization



Note. Respect for diversity in sexual education's moderation effect of maternal adolescent/adult sexual violence victimization on daughter adolescent/adult sexual violence victimization. ASV = dichotomous and total sexual violence victimization scores on SES-SFV.