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Mental Health Indicators Fifty Years Later: A Population-based Study of Men with Histories of Child Sexual Abuse

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Abstract

Childhood sexual abuse (CSA) is a widely acknowledged trauma that affects a substantial number of boys/men and has the potential to undermine mental health across the lifespan. Despite the topic's importance, few studies have examined the long-term effects of CSA on mental health in middle and late life for men. Most empirical studies on the effects of CSA have been conducted with women, non-probability samples, and samples of young or emerging adults with inadequate control variables. Based on complex trauma theory, the current study investigated: a) the effect of CSA on mental health outcomes (depressive symptoms, somatic symptom severity, hostility) in late life for men, and b) the moderating effects of childhood adversities and masculine norms in the relationship between CSA and the three mental health outcomes. Using a population-based sample from the 2004-2005 Wisconsin Longitudinal Study, multivariate analyses found that CSA was positively related to both depressive and somatic symptoms and increased the likelihood of hostility for men who reported a history of CSA. Both childhood adversities and masculine norms were positively related to the three outcomes for the entire sample. Among CSA survivors, childhood adversities exerted a moderating effect in terms of depressive symptoms. Mental health practitioners should include CSA and childhood adversities in assessment and treatment with men. To more fully understand the effects of CSA, future studies are needed that use longitudinal designs, compare male and female survivors, and examine protective mechanisms such as social support.

Keywords

child sexual abuse; male survivors; complex trauma; adverse childhood experiences; somatic symptoms; depression

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Childhood sexual abuse (CSA) is a widely acknowledged trauma that affects a substantial number of boys/men. CSA is “any completed or attempted sexual act, sexual contact, or non-contact sexual interaction with a child” (Gilbert et al., 2009, p. 69). According to a recent meta-analysis, 8% of men worldwide had experienced some form of sexual abuse prior to the age of 18 (Stoltenborgh, van Ijzendoorn, Euser, & Bakermans-Kranenburg, 2011). In addition to non-contact sexual abuse (i.e., exposure to sexual activity, filming, or flashing) and sexual touching, 5% of men reported that they experienced penetrative sexual abuse in childhood (Gilbert et al., 2009). Due to the intricate web of barriers to reporting and disclosure (Easton, Saltzman, & Willis, 2014), actual incidence rates of CSA for boys/men are likely to be higher.

This high prevalence is concerning because research suggests that CSA can negatively impact survivors; mental health throughout their lives (Gilbert et al., 2009). In the CSA literature, however, the vast majority of studies focused on women; empirical evidence on the long-term impact of sexual victimization for boys/men is tenuous (Holmes & Slap, 1998). Few studies have examined the effects of CSA on men's mental health in midlife or late life. Studies have revealed that men who were sexually abused are likely to experience impaired masculine identity, stigma related to perceived homosexuality, self-identity disruptions, delays in disclosure, and lack of access to support resources (Easton, et al., 2014; O'Leary & Barber, 2008), all factors that could affect mental health. Because of the possibility of gender-specific, long-term differences in the effects of CSA, scholars have called for more research with male survivors (Spataro, Moss, & Wells, 2001).

To address this gap in the literature, the current study assessed the impact of CSA on the mental health of men in middle and late life using data collected from a large, population-based survey. Guided by complex trauma theory (Herman, 1992; Van der Kolk, 1996), we examined the association between CSA and depressive symptoms, somatic symptom severity, and hostility in late adulthood. To improve our understanding of mechanisms that might heighten the impact of CSA, we also investigated potential moderating effects of childhood adversities and masculine norms. By advancing the knowledge base on this neglected population, this investigation will inform intervention strategies and future research that could improve the psychological health of men with histories of CSA.

Literature

Complex Trauma Theory

The diagnosis of posttraumatic stress disorder (PTSD) was introduced in the third edition of the Diagnostic Statistical Manual (APA, 1980), largely in response to the mental health needs of returning Vietnam War veterans (Courtois, 2004). Despite its clinical utility as the foundational trauma disorder, clinicians and researchers noted that the symptom triad (i.e., re-experiencing, avoidance, and hyperarousal) of PTSD captured a limited range of symptoms that trauma survivors face (Ford & Courtois, 2009). In the early and mid-1990s, scholars introduced the term complex trauma (Herman, 1992; Van der Kolk, 1996), defined as “...a type of trauma that occurs repeatedly and cumulatively, usually over a period of time and within specific relationships and contexts” (Courtois, 2004, p. 412). In addition to fear-based responses inherent in a PTSD diagnosis, survivors of complex trauma such as child

abuse often experience additional problems in multiple domains (e.g., affective, self-concept, relational) due to compromised self-organization systems (Briere & Spinazzola, 2005; Ford & Courtois, 2009; Van der Kolk, Roth, Pelcovitz, Sunday, & Spinazzola, 2005).

More recently, scholars have conceptualized traumatic stressors on a continuum ranging from single-incident, adult-onset events of short duration (e.g., automobile accident, natural disaster) to multiple incident, early-onset events over an extended period of time (e.g., child physical abuse, child neglect; Briere & Spinazzola, 2005). Other attributes of complex stressors include: betrayal of trust by caregivers, occurrence during crucial developmental periods in the lives of victims, and co-occurrence with other environmental stressors that augment suffering (Ford & Courtois, 2009; Van der Kolk et al., 2005). Additionally, invasive stressors of an interpersonal nature such as sexual abuse typically invoke tremendous stigma and shame (Briere & Spinazzola, 2005). Survivors of complex stressors are more likely to experience chronic, long-term problems in interpersonal relations and affect regulation such as depression, somatic illness, and anger or hostility (Cloitre, Garvert, Brewin, Bryant, & Maercker, 2013; Van der Kolk et al., 2005).

Empirical Research on CSA

As a prototypal example of a complex traumatic stressor, CSA has the capacity to undermine mental health across the lifespan. An extensive empirical literature has documented linkages between CSA and psychological functioning in adulthood including affective disorders such as depression (Holmes & Slap, 1998; Maniglio, 2009). Cutajar et al. (2010) analyzed data from childhood medical records and public psychiatric databases on a large sample of CSA survivors (80.1% female) in early adulthood. They found that survivors of CSA utilized mental health services at a rate that was 3.65 higher than their non-abused counterparts and had higher rates of a wide range of clinical disorders including depression. Thomas, DiLillo, Walsh and Polusny (2011) conducted a cross-sectional study with 110 female veterans ranging in age from 22 to 65 years and found that CSA predicted depression. In a secondary data analysis of 7,700 Australian young adult women (Coles, Lee, Taft, Mazza & Loxton, 2015), researchers established that people with a history of CSA were 1.4 times more likely to be depressed in the past three years than non-abused counter-parts. Conversely, some studies did not find relationships between CSA and major affective disorders in adulthood for men (Cutajar et al., 2010; Molnar, Buka, & Kessler, 2001; Spataro, Mullen, Burgess, Wells, & Moss, 2004).

The research base on CSA and outcomes such as somatic disorders or hostility in adulthood is less developed. Nonetheless, the results of several studies indicate that CSA is related to a higher lifetime rate of somatic or physical health problems. Nelson, Baldwin, and Taylor (2012) completed an integrative literature review and found that adults with a history of CSA are more likely to experience medically unexplained symptoms (e.g., irritable bowel syndrome) than adults with no abuse history. Other studies with convenience samples of women have found that CSA is related to a greater likelihood of experiencing bodily pain (Coles et al., 2015) and migraine headaches (Bunevicius et al., 2013) in early and middle adulthood. One prospective study that included male survivors, however, found no association between CSA and somatic problems (Spataro et al., 2004). Several qualitative

studies have found that CSA was related to anger and rage among men (Fater & Mullaney, 2000; Lisak, 1994; Sigurdardottir, Halldorsdottir, & Bender, 2012). The results of two other studies indicated that CSA increases the risk of personality (e.g., anti-social) or conduct disorders, often characterized by anger and hostility, for men (Fergusson, McLeod, & Horwood, 2013; Spataro et al., 2004). Few quantitative studies, though, have directly assessed whether CSA is related to somatic disorders or hostility in middle or late adulthood for male survivors.

Complex trauma theory asserts that environmental stressors that co-occur with traumas such as CSA can augment suffering for survivors. A prominent class of environmental stressors, adverse childhood experiences (ACE; e.g., physical abuse or neglect, parental substance use), is relatively common in the general population (Chartier, Walker, & Naimark, 2010; Dong et al., 2004) and frequently co-occurs with CSA (Dong, Anda, Dube, Giles, & Felitti, 2003; Dong et al., 2004; Easton, 2012). In terms of the long-term effects of ACE, Felitti et al.'s (1998) pioneering research documented links between ACE and health risks for outcomes such as alcoholism, drug abuse, depression, and suicide attempts. Chapman et al. (2004) analyzed data from a large sample of adults ($N = 9,460$; 46% men) and found that exposure to ACE was associated with an increased risk of depressive disorders. More recently, a systematic review (Kalmakis & Chandler, 2014) concluded that ACE was associated with health risk behaviors, developmental disruptions, physical and psychological conditions, and increased health care utilization in adulthood. In addition, there is growing evidence of the cumulative negative effects of multiple ACE on adult mental health (Chapman et al., 2004; Dong et al., 2003; Dong et al., 2004; Felitti et al., 1998) and, more specifically, that childhood adversities may predict mental distress among men with histories of CSA (Easton, 2014). However, more research is needed to assess the potential interaction effects of CSA and ACE on men's mental health.

Furthermore, complex trauma theory posits that stigma can heighten negative outcomes among CSA survivors. The experience of CSA violates several norms of masculinity (e.g., heterosexuality, winning, dominance, emotional control); many survivors experience shame and stigma as a result of their abuse (Easton et al., 2014; Holmes & Slap, 1998; Spataro et al., 2001). Some men may respond to victimization by overcompensating and adopting hyper-masculine personas in adulthood (Lisak, 1994). Among the general population, however, rigid notions of masculinity have been associated with lower psychological well-being (Alfred, Hammer, & Good, 2014), psychological distress (Wong, Owen & Shea, 2012), depression (Mahalik & Rochlen, 2006), and negative attitudes towards help-seeking (Levant, Wimer, & Williams, 2009). Few studies have examined the relationship between gender norms and mental health for sexually abused men. Among a large non-probability sample of male survivors of CSA, high conformity to masculine norms was associated with mental distress (Easton, 2014) and suicidality (Easton, Renner, & O'Leary, 2013).

In reviewing the literature, it is evident that more research is needed to surmount some of the limitations of existing studies. To understand the potential lifespan effects of CSA, research should expand the conceptualization of long-term effects beyond studies with adolescents/young adults and examine data from older adults decades after the abuse occurred. Also, most research to date has been with female survivors (e.g., Coles et al., 2015), small

convenience samples (e.g., Thomas et al., 2011), or confirmed cases of CSA in medical records (e.g., Cutajar et al., 2010). To advance the empirical knowledge base, the current study is based on a representative, population-based sample, uses a matched comparison group, and controls for confounding variables such as family environment, as suggested by Maniglio (2009). The investigation has two primary aims. First, we assess whether CSA is related to multiple mental health outcomes (i.e., depressive symptoms, somatic symptom severity, and hostility) in middle and late adulthood for men. Second, we examine whether childhood adversities or masculine norms moderate the relationships between CSA and long-term mental health outcomes.

Methods

Data Source

The Wisconsin Longitudinal Study (WLS) is a long-term population-based study of a random sample of 10,317 men and women who graduated from Wisconsin high schools in 1957 and 5,823 of their randomly selected siblings (Hauser & Roan, 2006). After the first interview in 1957, the graduates were re-interviewed at subsequent time points by telephone or mailed questionnaires: 1975 (35-36 years of age), 1993 (53-54 years of age), 2004 (64-65 year of age), and 2011 (71-72 years of age). Data was also collected from a randomly selected sibling of the graduate in three corresponding waves (1977, 1994, and 2005). The current study is a secondary analysis of data from the 2004-2005 WLS interviews, which included data on childhood abuse and other early life adversities. In 2004, 6,845 graduates completed the telephone survey and returned mail questionnaires. In 2005, 3,977 siblings completed both phone interviews and mail questionnaires. The pooled sample of *male* graduates and siblings from the 2004-2005 WLS was 5,013 respondents (graduates: 3,145; siblings: 1,868).

Study Sample

The study sample was comprised of respondents who reported a history of being sexually abused and a matched comparison group of those who reported no history of CSA. In the 2004-2005 WLS dataset, a total of 129 respondents reported having experienced sexual abuse during childhood. From the remaining 4,884 respondents, we used stratified random sampling to select a comparison group (i.e., no history of CSA) that had similar socio-demographic characteristics with the respondents who reported a history of CSA. Using a matched comparison group is valuable because it replicates a randomized experiment and reduces confounding bias when comparing the abused and non-abused groups, important considerations when evaluating causal relationships between CSA and adverse outcomes in later life (Bolen, 2001; Osborne, 2008).

Consistent with other research that has used matched comparison groups from the WLS (Seltzer, Floyd, Song, Greenberg, & Hong, 2011; Song, Floyd, Seltzer, Greenberg, & Hong, 2010), we used age and education as stratification variables to identify strata. We first examined the distribution of these variables among sexually abused men to determine the strata levels. By comparing the number of people in each stratum between the CSA group and the comparison pool, the final matching ratio was derived as 1:18. We then randomly

selected respondents from each stratum based on the final matching ratio. As a result, the comparison group consisted of a stratified random sample of 2,322 respondents. A series of *t*-tests and χ^2 tests confirmed that there were no significant differences between men in the CSA and comparison groups in terms of age, marital status, educational attainment, household income, and health status. Combining the two groups, our final study sample consisted of 2,451 men. Thus, the abused group ($n = 129$) constituted 5.3% of the total sample.

Sample Characteristics

The average age of respondents was 64.2 years (range = 44 - 84). The majority of respondents reported that they were married (85.9%) and in good or excellent health (84.2%). On average, respondents indicated that they had completed 14.5 years of education (i.e., high school degree and some college) and that their fathers had completed 10.1 years (i.e., less than high school degree). Almost one-third of respondents (29.7%) reported that they lived in rural areas during childhood. The mean (squared) household income was 255.9 (SD=136.8), which equates to approximately \$84,000 (range= \$0-\$710,000).

Measures

Depressive symptoms—Depressive symptoms were evaluated using the 20-item Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977). This scale has been widely used to assess later-life depression (Haringsma, Engels, Beekman, & Spinhoven, 2004). The items ask about the frequency of occurrence of common depressive symptoms such as depressed mood, feeling of worthlessness/hopelessness, and loss of appetite. Response choices ranged from zero to seven, indicating the number of days a respondent experienced each symptom in the past week. Response choices were summed to produce a total score (range = 0 - 140), with higher scores indicating high levels of depressive symptoms. In the regression analyses, the square root of the depression scores was used due to the high skewness of the variable. In the current study, the Cronbach's alpha coefficient for the CES-D scale was 0.87 and the mean was 3.2 (SD=1.8; range=0-10.6).

Somatic Symptom Severity—Somatic symptom severity was assessed using 16 items based on the Patient Health Questionnaire-15 (Kroenke, Spitzer, & Williams, 2002). The items asked respondents whether they experienced specific physical symptoms in the past six months (e.g., back pain/strain, shortness of breath). Response choices for each item were based on a four-point Likert scale: *none* (1), *a little* (2), *some* (3), and *a lot* (4). Response choices were summed to produce a total score (range = 0 - 64) with higher scores indicating high levels of somatic symptom severity. The Cronbach's alpha coefficient for this scale was 0.82 and the mean was 20.2 (SD=7.9; range=1-56).

Hostility—Hostility was measured with three items that were derived from the State-Trait Anger Expression Inventory (Spielberger, 1988). The stem and items read: "On how many days during the past week did you (a) feel irritable, or likely to fight or argue?; (b) feel like telling someone off?; (c) feel angry or hostile for several hours at a time?" Response choices ranged from zero to seven days and were summed to produce a total score (range = 0 - 21) with higher scores indicating more hostility. Due to high levels of skewness, the summary

score was recoded as a binary variable: *feeling hostile* (1; if respondents reported hostility scores of 3 or more) and *not feeling hostile* (0). The Cronbach's alpha coefficient for this scale was 0.86. In this sample, 14.9% ($n=356$) reported feeling hostile.

Sexually abused in childhood—To assess for a history of CSA, we relied on four items from the WLS: “Up-until 18, to what extent (a) did your father have oral, anal, or vaginal sex with you against your wishes?; (b) did any other person have oral, anal, or vaginal sex with you against your wishes?; (c) did your father treat you in way that you consider sex abuse?; (d) did any other person treat you in way that you consider sex abuse?” Response choices for each item were based on a four-point Likert scale: *not at all* (1), *a little* (2), *some* (3), and *a lot* (4). Respondents who answered *a little*, *some*, or *a lot* for any of the four items were coded as having been sexually abused during childhood (1; $no = 0$), constituting 5.3% of the sample ($n=129$).

Childhood adversities—Childhood adversities were measured with items from the WLS that corresponded with major categories within the Adverse Childhood Experiences (Center for Disease Control and Prevention, 2014). The WLS contained items for seven of the ACE categories: emotional abuse, physical abuse, neglect, family dysfunction, parental divorce, witnessing domestic violence, and living with a household member with a substance problem (sexual abuse was used as an independent variable). For example, one item asked: “Up until you were 18, how often did you see a parent or one of your brothers or sisters get beaten at home.” Response choices were based on a 5-point Likert scale ranging from *never* (1) to *very often* (5). For each of the seven item, responses of *often* (4) and *very often* (5) were recoded into *yes* (1). Responses were then were summed to produce a total score (range = 0 - 7) with higher scores indicating more childhood adversities. The Cronbach's alpha coefficient for this scale was 0.62. The mean score for childhood adversities was .8 (SD=1.22; range=0-7).

Masculine norms—Masculine norms were measured by a series of seven statements on stereotypical behavior and beliefs for men. Respondents were asked about the extent to which they agreed with statements such as “...a man should always try to project an air of confidence even if he really doesn't feel confident inside”, “...when a man is feeling pain he should not let it show”, and “...men have greater sexual needs than women.” Each item was measured on five-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (5). Scores on the seven items were summed (range = 0 – 35) with higher scores indicating more agreement with masculine norms. In the current study, the Cronbach's alpha coefficient for the masculine norms was 0.60. The mean score was 19.4 (SD=3.4; range=1-35).

Control variables—Sociodemographic characteristics, including age, marital status, educational attainment, total household income, self-rated health condition, and childhood background were controlled in the analyses. Marital status was coded as *married* (1) and *non-married* (0). Educational attainment was reported as the number of years of education completed by the respondent. Total annual household income was comprised of 14 different income sources (e.g., wages, investments, pension plans, other government programs) and reported in US dollars. For self-rated health, participants selected one of five response

choices: *very poor* (1), *poor* (2), *fair* (3), *good* (4), and *excellent* (5). In our analyses, the *good* and *excellent* categories were collapsed into one category (1) and the *very poor*, *poor*, and *fair* were combined and used as a reference category (0). In order to control for childhood environmental factors, we included father's educational attainment (in years) and rural background. The rural background was assessed by a question in the 1957 survey that asked the population of the town in which graduate respondents attended high school. Those who used to live in a place with a population of less than 2,500 were coded as having been raised in a rural area (1; 0 = *not rural*).

Analytic procedures

After univariate and bivariate analyses, multiple regression analyses were performed. We used ordinary least squares (OLS) regression to examine factors related to depressive and somatic symptom severity, controlling for sociodemographic variables. For the binary outcome of hostility, logistic regression was used. To correct for the graduates and siblings nested within a family, models were estimated using robust standard errors (Cameron & Miller, 2011). Diagnostic analyses indicated that all other conditions for regression models including normality and linearity assumptions were met.

The analyses were sequentially conducted. In Model 1, the CSA variable, as well as the control variables were entered. In Model 2, childhood adversities and masculine norm were added to examine their effects on mental health outcome variables. In Model 3, we added interaction terms (CSA $\times$ childhood adversities scores; CSA $\times$ masculine norms). The scores for childhood adversities and masculine norms were standardized before creating the interaction terms (Aiken & West, 1991).

Item nonresponse for most measures was low (< 3%). To handle incomplete data, we conducted multiple imputation by chained equations in Stata 13.0, which generated five datasets with imputed values.

Results

Bivariate results

Table 1 presents correlations between all of the variables in the study. Table 2 presents the results of bivariate analyses between men who did and did not report being sexually abused in childhood. Mean comparisons indicated that men with a history of CSA had significantly higher scores on childhood adversities compared to non-abused adults ($t(2,444) = -7.88, p < .001$). In terms of the dependent variables, abused men reported higher levels of depressive symptoms ($t(2,385) = -2.96, p < .05$), and somatic symptom severity ($t(2,274) = -4.20, p < .001$). In addition, a higher percentage of men who were abused reported feeling hostile than their counterparts ($\chi^2(1, N = 2,386) = 4.25, p < .05$).

Multivariate results

Depressive symptoms—A summary of OLS regression results for depressive symptoms is presented in Table 3. In Model 1, CSA predicted significantly higher depressive symptoms ($b = .37, p < .05$), after controlling for the sociodemographic characteristics. Model 2

showed that higher scores for childhood adversities ($b = .23, p < .001$) and masculine norms ($b = .15, p < .01$) were associated with more depressive symptoms. However, after controlling for the childhood adversities and masculine norms, CSA was no longer significant ($b = .22, p = \text{ns}$). Model 3 evaluated the extent to which the effects of CSA were moderated by childhood adversities and masculine norms by examining interaction terms simultaneously. The results indicated that childhood adversities had significant interactions with CSA ($b = .33, p < .05$). Among all respondents, a greater number of childhood adversities was associated with more frequent depressive symptoms. However, the effect appears to be even stronger for the men with histories of CSA (see Figure 1). The average of the adjusted R^2 values of Model 3 was 0.11. Throughout the three models, age, being married, total household income, and having good/excellent health were negatively associated with depressive symptoms.

Somatic symptom severity—Table 4 presents the results of OLS regression analyses predicting somatic symptom severity. In Model 1, CSA was associated with higher levels of somatic symptom severity ($b = 2.84, p < .001$). In Model 2, scores for childhood adversities and masculine norms were both related to somatic symptom severity ($b = .75, p < .001$; $b = .54, p < .05$, respectively). Even after controlling for childhood adversities, masculine norms, and sociodemographic variables, CSA still predicted greater levels of somatic symptom severity ($b = 2.36, p < .01$). The average of the adjusted R^2 values of Model 3 was .14. However, none of the interaction terms were significant, indicating that the effects of CSA on psychosomatic symptoms do not differ by the childhood adversities and masculine norms. In all three models, age, education, and having good/excellent health condition were negatively associated with somatic symptom severity.

Hostility—Table 5 summarizes the results of logistic regression models for the hostility outcome. In Model 1, the odds of feeling hostile were 57% higher among men who reported a history of CSA than non-abused men ($\text{OR} = 1.57, p < .05$), after controlling for sociodemographic characteristics. In Model 2, CSA was not significantly related to a higher risk of feeling hostile, after accounting for the effects of the childhood adversities, masculine norms, and sociodemographic factors. Both higher scores on childhood adversities ($\text{OR} = 1.37, p < .001$) and masculine norms ($\text{OR} = 1.20, p < .05$) were associated with a greater risk of feeling hostile. Model 3, there were no significant moderating effects of childhood adversities and masculine norms on the association between CSA and the risk of feeling hostile. Across the models, age, having a good/excellent health condition, and rural background consistently showed negative associations with feeling hostile. The overall predictive models were statistically significant.

Discussion

A central aim of this study was to examine whether CSA was related to several indicators of mental health for men in middle and late adulthood. After controlling for sociodemographic variables and childhood environmental factors (e.g., rural background, father's educational attainment), we found that CSA was positively related to all three psychological outcomes for men: depressive symptoms, somatic symptom severity, and hostility. These findings indicate that CSA can have potentially long-lasting effects. Based on the sample's mean age

(64.2 years) and survey items that assessed sexual abuse prior to 18 years of age, our investigation suggests that CSA may be linked to harmful outcomes for many survivors four to five decades after its occurrence. The findings are consistent with complex trauma theory (Herman, 1992; Van der Kolk, 1996) which asserts that complex stressors such as CSA can disrupt key developmental processes in childhood and adolescence, leading to later life difficulties such as feelings of despair and hopelessness, unexplained physical complaints, and anger dysregulation (Cloitre et al., 2013; Van der Kolk et al., 2005).

For direct effects, our findings support the growing empirical literature on CSA and affective disorders (Holmes & Slap, 1998; Maniglio, 2009) and counter findings from studies that did not find such a relationship for male survivors (Cutajar et al., 2010; Molnar et al., 2001; Spataro et al., 2004). However, the latter three studies assessed links between CSA and affective disorders in early adulthood. For example, the mean age of male participants in studies by Cutajar et al. (2010) and Sparator et al. (2004) were, respectively, 31 years and 21 years. It is possible that CSA exerts a different effect on depressive symptoms at different life stages for men. Similar to female survivors (Coles et al., 2015; Bunevicius et al., 2013), male survivors in our study were also more likely to experience long-term somatic problems than men without abuse histories. This finding is inconsistent with those from Spataro et al. (2004), again, possibly due to the different mean age of participants. Building on previous qualitative studies (Fater & Mullaney, 2000; Lisak, 1994; Sigurdardottir, Halldorsdottir, & Bender, 2012), our results indicate that men with histories of CSA have a greater likelihood of experiencing feelings of hostility later in life than men with no abuse history. Certainly feelings of hostility or anger could be underlying mechanisms that disrupt functioning in various aspects of survivors' lives (e.g., employment, relationship quality, life satisfaction). Overall, this investigation is one of the first population-based studies to find evidence of the negative influence of CSA on mental health outcomes for men later in the life course with a robust set of control variables.

A second aim of the study was to examine potential moderators of the relationship between CSA and long-term mental health outcomes. Complex trauma theory posits that other environmental stressors in childhood (e.g., ACE) can compound the effect of traumatic experiences on survivors' mental health (Ford & Courtois, 2009; Van der Kolk et al., 2005). Additional stressors can magnify the psychological injury from CSA to the child and undermine potential recovery resources such as social support, both mechanisms that can contribute to psychological problems in adulthood. Childhood adversities have also been related to more severe forms of CSA among male survivors (Easton, 2012), another possible route to psychopathology. Our results supported a direct relationship between childhood adversities and three mental health outcomes among the entire sample of men, which is consistent with the growing literature on ACE (Chapman et al., 2004; Felitti et al., 1998; Kalmakis & Chandler, 2014). Beyond the direct effect, we found that childhood adversities had an additional effect of augmenting depressive symptoms in middle and late adulthood for men who were sexually abused. Interestingly, we did not find support that childhood adversities moderated the relationship between CSA and either somatic symptom severity or hostility. Once a person reaches a certain threshold of somatic symptoms or feelings of hostility (due to the direct effects, for example, of CSA or childhood adversities), it may be harder to detect and quantify an additional moderating effect. Another possibility is that

more proximal factors (e.g., current life stressors) might exert greater influence through moderation than childhood adversities. Regardless, more research is needed to evaluate how third variables may interact with CSA to affect these two mental health outcomes in late life.

We examined a second potential moderator of the relationship between CSA and mental health outcomes: masculine norms. Due to shame and stigma, some survivors adopt rigid masculine norms as a coping mechanism (Lisak, 1994), which could undermine long-term mental health. Our analyses found a direct relationship between masculine norms and psychological outcomes across the entire sample, consistent with research in the general population (Alfred et al., 2014; Mahalik & Rochlen, 2006; Wong et al., 2012). However, we did not find a heightened effect of masculine norms among those who were sexually abused. Our results are inconsistent with two existing studies with male survivors (Easton, 2014; Easton et al., 2013) and may reflect measurement issues, which will be discussed later. A possible explanation is that masculine norms operate differently across generations, as the sample in the current study was nearly 15 years older than the samples in the two previous studies.

Implications for Practice

Due to the personal, interpersonal, and socio-political barriers to disclosure, men often guard the secret of being sexually abused in childhood well into adulthood and across the life course (Easton, 2013). However, some survivors will seek services for specific mental health problems such as depression, unexplained physical problems such as somatic concerns, or behavioral problems related to interpersonal aggression, violence, or feelings of hostility. In these cases, it is important for mental health professionals to include CSA in screening assessments. Because it may take survivors considerable time to form trusting therapeutic relationships conducive to disclosure and discussion of CSA, these survivors may not endorse CSA during initial intake assessments. Mental health providers should keep CSA as a possible underlying explanation for presenting psychological, physical, and behavioral issues during the course of treatment and consider reassessing for CSA in later sessions.

The interaction effect between CSA and childhood adversities on depressive symptoms also has important clinical implications for mental health practitioners working with male survivors of CSA experiencing depressive disorders. To gain a more thorough understanding of clients, therapists should include childhood social environment (more specifically, ACE) in intake assessments and clinical intervention plans. It is possible that male survivors harbor long-held feelings of shame, self-blame, or hopelessness as well as other disturbances in self-perception, all aspects of complex trauma (Ford & Courtois, 2009; Van der Kolk et al., 2005). Although distal factors that occurred forty or fifty years prior cannot be changed, the residual effect of these corrosive environments (as well as men's interpretation of their meaning) can be examined and, if necessary, reinterpreted through therapy sessions.

Directions for Future Research

The results have many implications for future research. First, this study demonstrated that CSA and childhood adversities have detrimental effects on mental health for men in middle and late life. To improve our understanding of similarities and differences between male and

female survivors, future studies that include men and women should compare mental health outcomes of CSA based on gender. This type of research could help determine whether some outcomes traditionally associated with men (e.g., hostility) are unique to male survivors or also present with female survivors. Second, complex trauma theory (Herman, 1992; Van der Kolk, 1996) contends that early life stressors such as CSA not only impair affect regulation (and related mental health outcomes), but also undermine survivors' ability to form meaningful, trusting relationships throughout their life (Cloitre et al., 2013; Van der Kolk et al., 2005). Given the important role that social support can play in coping with traumatic experiences, future studies should examine relationship patterns (e.g., marital, familial, friendship) for survivors of CSA across the life course and their potential to mitigate psychological problems. Finally, the current study used a cross-sectional design to investigate the relationships between CSA and multiple mental health outcomes in middle and late life for men. Although it was not possible to determine causal effects with this design, this study did establish important correlations among key concepts. Future studies can build on these findings by using longitudinal analytic techniques to examine life course trajectories for mental health outcomes.

Limitations

In interpreting the results of the current study, several considerations deserve mentioning. Although this population-based study used probability sampling, a noteworthy methodological improvement over previous studies with male survivors of CSA, the sample, nonetheless, was drawn from a single state (i.e., Wisconsin) that is not necessarily generalizable to the US population. One strength of the dataset is that it is "broadly representative of older White American men and women who have completed at least a high school education" (Herd, Carr, & Roan, 2014, p. 37). However, research on CSA and late-life mental health outcomes with more diverse samples (e.g., ethnicity, race, education level, income level, marital status) is needed to enrich our understanding of these relationships across the general population.

A second limitation is the percentage (2.6%) of male participants in the 2004-2005 WLS data wave who self-reported a history of CSA, a figure that is lower than current prevalence rates of CSA for boys (Gilbert et al., 2009; Stoltenborgh et al., 2011). Although it is possible that this cohort (many born in the 1940s) experienced a lower incidence of CSA, it is more likely that there was under-reporting due to a variety of methodological (e.g., retrospective recall or social desirability bias; limited number and type of screening items) and socio-cultural (e.g., generational stigma/shame) factors. If the latter is the case, participants in the comparison group with (un-reported) histories of CSA may have suppressed some of the results. Future studies that triangulate data with multiple sources (e.g., administrative records) or use more elaborate screening items could generate more accurate rates of CSA.

Finally, any secondary analysis is restricted in terms of the type of measures that are available to the researchers. Some of the measures in the current study (e.g., masculine norms) had acceptable internal consistency but lacked other established psychometric properties. Other measures (e.g., CSA items) did not elicit information related to duration or severity, important considerations in assessing the impact of the trauma. Using validated

measures of masculinity (e.g., Conformity to Masculine Norms; Mahalik et al., 2003) and more nuanced indicators of CSA in future research studies with men would strengthen the knowledge base.

Despite these limitations, the current study expanded our knowledge of male survivors of CSA and mental health outcomes in middle and late adulthood. Consistent with complex trauma theory (Herman, 1992; Van der Kolk, 1996), CSA and childhood adversities were related to multiple psychological problems including depressive symptoms, somatic symptom severity, and hostility nearly fifty years, on average, after the sexual abuse occurred. Most of the previous research with male survivors has been based on relatively small, non-probability samples of college students or young adults. By utilizing data from a sixty year, panel cohort study, this investigation was able to expand the timeframe for examining long-term results with a population-based sample. As one of the first studies of its kind, the results illustrated the potentially harmful effects of CSA and childhood adversities that can last into late life for men, underscoring the need for timely assessment and treatment of this vulnerable, marginalized population.

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Figure 1.
Interaction between CSA and Childhood Adversities on Depressive Symptoms

Table 1

Correlation Table

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1.00												
2	0.37 [*]	1.00											
3	0.39 [*]	0.22 [*]	1.00										
4	0.05 [*]	0.09 [*]	0.04 [*]	1.00									
5	0.15 [*]	0.12 [*]	0.14 [*]	0.16 [*]	1.00								
6	0.10 [*]	0.11 [*]	0.08 [*]	0.00	0.00	1.00							
7	-0.05 [*]	0.01	-0.06 [*]	-0.00	-0.03	0.04	1.00						
8	-0.02	-0.07 [*]	-0.01	-0.02	-0.01	-0.11 [*]	-0.12 [*]	1.00					
9	-0.09 [*]	-0.00	0.01	-0.03	-0.05 [*]	0.03	-0.03	0.01	1.00				
10	-0.06 [*]	-0.15 [*]	-0.04 [*]	0.01	0.02	-0.19 [*]	-0.23 [*]	0.32 [*]	0.05 [*]	1.00			
11	-0.08 [*]	-0.08 [*]	-0.03	0.02	0.00	-0.04	-0.15 [*]	0.17 [*]	0.14 [*]	0.36 [*]	1.00		
12	-0.25 [*]	-0.33 [*]	-0.12 [*]	-0.03	-0.05 [*]	-0.10 [*]	-0.08 [*]	0.08 [*]	0.04 [*]	0.15 [*]	0.11 [*]	1.00	
13	-0.03	0.01	-0.04	-0.01	-0.03	0.04	-0.00	-0.16 [*]	0.04 [*]	-0.12 [*]	-0.11 [*]	-0.04	1.00

Note: $N = 2,451$.

1. Depression
2. Somatic symptom severity
3. Feeling hostile
4. Sexually abused
5. Childhood adversities
6. Masculine norm
7. Age
8. Father's education
9. Married
10. Years of education
11. Total household income

12. Good/Excellent health condition
13. Raised in a rural area
* $p < .05$
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Table 2

Bivariate Analyses of Key Variables

	CSA	Non-CSA
Childhood adversities	1.64 (1.82) ***	.79 (1.16)
Masculine norm	19.41 (3.41)	19.39 (3.44)
Depressive symptoms	3.55 (2.02) *	3.13 (1.81)
Somatic symptom severity	23.08 (8.80) ***	19.99 (7.86)
Feeling hostile (%)	21.26 *	14.56

Notes: Values are means (standard deviation), or percentages where indicated. Significance levels are denoted as

** $p < .01$

* $p < .05$

*** $p < .001$

Table 3

OLS Analyses Predicting Depressive Symptoms

	Model 1 b (S.E.)	Model 2 b (S.E.)	Model 3 b (S.E.)
CSA	.37(.17) *	.22 (.17)	.04 (.16)
Childhood adversities		.23 (.04) ***	.19 (.04) ***
Masculine norm		.15 (.05) **	.16 (.05) **
CSA * Childhood adversities			.33 (.13) *
CSA * Masculine norm			-.10 (.24)
Age	-.03 (.01) ***	-.03 (.01) ***	-.03 (.01) ***
Married	-.35 (.11) **	-.34 (.11) **	-.35 (.11) **
Years of education	-.02 (.02)	-.01 (.02)	-.01 (.02)
Total household income	-.00 (.00) *	-.00 (.00) *	-.00 (.00) *
Good/Excellent health condition	-1.25 (.11) ***	-1.19 (.11) ***	-1.19 (.11) ***
Father's education	-.00 (.01)	-.00 (.01)	.00 (.01)
Rural background	-.18 (.08) *	-.17 (.08) *	-.16 (.08) *
Constant	7.17 (.65) ***	6.84 (.65) ***	6.81 (.64) ***
Adjusted R ²	.08	.10	.11

Notes: Standardized regression coefficients with robust standard errors in parentheses. Significance levels are denoted as

*
p < .05

**
p < .01

p < .001

Table 4

OLS Analyses Predicting Somatic Symptom Severity

	Model 1 b (S.E.)	Model 2 b (S.E.)	Model 3 b (S.E.)
CSA	2.84 (.75) ***	2.36 (.74) **	1.97 (.62) **
Childhood adversities		.75 (.16) ***	.67 (.17) ***
Masculine norm		.54 (.22) *	.57 (.23) *
CSA * Childhood adversities			.65 (.54)
CSA * Masculine norm			-.60 (.68)
Age	-.07 (.04)	-.06 (.04) *	-.06 (.04) *
Married	.53 (.47)	.57 (.47)	.55 (.47)
Years of education	-.29 (.07) ***	-.26 (.07) ***	-.26 (.07)
Total household income	-.00 (.00)	-.00 (.00)	-.00 (.00)
Good/Excellent health condition	-6.92 (.52) ***	-6.71 (.53) ***	-6.69 (.53) ***
Father's education	-.03 (.05)	-.01 (.05)	-.01 (.05)
Rural background	-.40 (.36)	-.37 (.36)	-.37 (.36)
Constant	34.59 (3.03) ***	33.56 (2.98) ***	33.47 (2.97) ***
Adjusted R ²	.13	.14	.14

Notes: Standardized regression coefficients with robust standard errors in parentheses. Significance levels are denoted as

*
p < .05

**
p < .01

p < .001

Table 5

Logistic Regression Analyses Predicting Hostility

	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
CSA	1.57 (1.01, 2.43) *	1.27 (.81, 1.99)	1.02 (.59, 1.77)
Childhood adversities		1.37 (1.24, 1.51) ***	1.33 (1.19, 1.48) ***
Masculine norm		1.20 (1.02, 1.42) *	1.22 (1.04, 1.43) *
CSA * Childhood adversities			1.25 (.94, 1.67)
CSA * Masculine norm			.85 (.50, 1.43)
Age	.95 (.93, .98) ***	.95 (.93, .98) ***	.95 (.93, .98) **
Married	1.17 (.83, 1.65)	1.20 (.85, 1.69)	1.19 (.84, 1.68)
Years of education	.96 (.91, 1.01)	.97 (.92, 1.02)	.97 (.92, 1.02)
Total household income	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)	1.00 (1.00, 1.00)
Good/Excellent health condition	.47 (.34, .65) ***	.50 (.36, .69) ***	.50 (.36, .69) ***
Father's education	1.00 (.97, 1.04)	1.01 (.97, 1.04)	1.01 (.97, 1.04) *
Rural background	.72 (.55, .94) *	.73 (.56, .96) *	.74 (.56, .97) *
Constant	14.07 (2.03, 97.31) **	9.93 (1.32, 74.51) *	9.64 (1.30, 72.55) *

Notes: Odds ratios with confidence intervals in parentheses. Significance levels are denoted as

*
p < .05

**
p < .01

p < .001