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PTSD Symptoms Among College Students: Linkages with Familial Risk, Borderline Personality, and Sexual Assault

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Abstract

College students have high rates of post-traumatic stress disorder (PTSD) symptoms as well as high rates of sexual assault. What is less clear, however, is whether different sexual assault types (e.g. coercive, physically forced, and incapacitation) are associated with greater PTSD symptoms. Moreover, understanding early familial and mental health histories of college students is important for explaining PTSD symptoms. As such, we use a social stress framework to examine the relationships between early familial risk (i.e. child abuse, perceived maternal rejection), borderline personality (BP) symptoms, and three sexual assault types with PTSD symptoms among college students. A total of 783 undergraduate students (65.4% female) completed paper and pencil surveys in fall 2019 and spring 2020 at a large public university. Results revealed that females were more likely to experience child sexual abuse and all three forms of sexual assault, while males experienced higher rates of child physical abuse. OLS regression results showed positive associations between child sexual abuse, perceived maternal rejection, BP symptoms and all three types of sexual assault with PTSD symptoms. Females also experienced more PTSD symptoms compared to males. Findings have implications for targeted interventions to improve mental health outcomes.

Keywords

Mental health; child abuse; undergraduates; sexual assault types

Previous literature finds that post-traumatic stress disorder (PTSD), defined as " … a trauma, or stress-related disorder, resulting from a traumatic event, or events, such as those that

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Disclosure statement

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Ethical standards and informed consent

All procedures followed were in accordance with the ethical standards of the responsible committee on human subjects research at the University of Nebraska-Lincoln and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from all participants for being included in the study.

may accumulate throughout childhood" (Kalmakis et al., 2020, p. 411), is prevalent among college students. Cusack et al. (2019) found that 25% of incoming college freshman had probable PTSD, with women reporting significantly more symptoms than men. PTSD is associated with numerous risk factors including childhood abuse, parental rejection (Becker et al., 2010; Conley et al., 2017; Kendra et al., 2012; Turner et al., 2017), and/or sexual assault (Dworkin, 2020). Research also finds a link between borderline personality (BP) symptoms and PTSD (Pagura et al., 2010). Students who report more PTSD experience numerous negative health outcomes including higher substance use disorders, anxiety, depression, and suicidal ideation (Cusack et al., 2019). Though prior work has examined these relationships individually, fewer studies have looked at these risks (i.e., familial risk, BP, different sexual assault types) with PTSD, in a single study. Moreover, there is a paucity of research that has examined different sexual assault types and their association with PTSD. Recent research has called for a thorough assessment of familial risk and a focus on different sexual assault types (Conley et al., 2017; Walsh et al., 2021), given their potential for differential impacts on health and later violence experiences (Brown et al., 2009). We use a social stress framework (Wheaton, 1999) to examine early familial risk, BP symptoms, and three sexual assault types with PTSD symptoms.

Prevalence of PTSD

PTSD prevalence rates vary across studies and gender. Experiencing childhood abuse may be a traumatic event as is experiencing sexual assault. Using the PTSD Checklist (PCL) to assess PTSD symptoms, Kalmakis et al. (2020) found that 51% of their college sample had a PCL score that was considered high PTSD symptoms. According to Cusack et al. (2019), female college students were three times more likely to report symptoms of PTSD than males (33% vs. 11%, respectively). Additionally, rates of interpersonal trauma exposure were higher for females (37%) compared to males (26%). These results align with previous epidemiological research that report PTSD prevalence rates of 11–36% (Dworkin, 2020), as well as across six studies of university students, which found a rate of 23% (Idoiaga et al., 2022).

Risk factors for PTSD

Child abuse and maternal rejection

A study of college students found that 50% reported a history of child abuse (Arata et al., 2005), which included physical, sexual, and emotional abuse and neglect. In addition to its high prevalence rate among college students, childhood abuse is also associated with numerous adverse psychological outcomes including PTSD symptoms (Kalmakis et al., 2020; Tyler & Ray, 2023). Adult women from the community and violence shelters who experienced more childhood physical and sexual abuse had significantly higher PTSD symptoms compared to those without abuse experiences (Becker et al., 2010); similar findings were reported among college women (Kendra et al., 2012). Findings from a study of over 1,400 female undergraduates revealed that those with a history of child sexual abuse had significantly higher PTSD scores compared to those without a sexual abuse history (Cantón-Cortés & Cantón, 2010). Another study found that about one-in-five college

students reported maternal rejection, which included lack of warmth or affection, hostile or aggressive attitudes, neglect, and rejection (Yang et al., 2019). Maternal rejection is also associated with later mental health concerns (Saleem et al., 2019). Child abuse and/or maternal rejection are traumatic events that have a strong association with PTSD (Conley et al., 2017; Kendra et al., 2012; Turner et al., 2017).

Borderline personality symptoms

BP symptoms, which are "personality features derived from DSM-IV (American Psychiatric Association, 1994), such as instability, impulsivity, emotional liability, and poor social relationships" (cited in Straus et al., 1999, p. 10), are attributed to biological and environmental factors (Navarro-Gómez et al., 2017). In terms of environmental influences, individuals with a history of maltreatment and maternal rejection (Bungert et al., 2015; Clift & Dutton, 2011; Krause-Utz et al., 2021; Staebler et al., 2011) are at greater risk for BP. Unlike the relatively rare BP disorder, which is a distinct diagnostic category, persons with BP symptoms are characterized on a continuum of low to high BP traits (D. G. Dutton, 2006; Kuo et al., 2015) such as instability and impulsivity (Straus et al., 1999). BP occurs in 11–15% of the general population (D. Dutton, 1995; Gunderson, 1984; Hines, 2008).

There is high overlap between BP and PTSD (Ford & Courtois, 2014; Golier et al., 2003). A nationally representative adult sample found lifetime prevalence for BP was 5.9% whereas PTSD was 6.6% (Pagura et al., 2010). Pagura et al. also found that those with both BP and PTSD were more likely to have experienced three or more childhood traumatic events but found no significant difference between men and women in the prevalence of BP. In contrast, another study found that being female increased the odds of being in the comorbid group (i.e., having both BP and PTSD; Scheiderer et al., 2015). Finally, Golier et al. (2003) found that those with BP had higher rates of PTSD compared to those without BP (25% vs. 13%, respectively). Though the link between BP and PTSD has been studied among general populations, less is known about BP as a risk factor for PTSD among college samples.

Sexual assault

Sexual assault continues to be pervasive on college campuses (Fedina et al., 2018): 25–32% of college women have experienced some form of sexual assault (Brahms et al., 2011; Fedina et al., 2018) while the rate for college men is approximately 12–14% (Aosved et al., 2011; Conley et al., 2017; Mellins et al., 2017). Sexual assault can be divided into three types: coercion (i.e., using pressure, threats, or guilt; Fedina et al., 2018), incapacitation by alcohol and/or drugs (Sutton et al., 2021), and physical force (Fedina et al., 2018).

Littleton et al. (2019) found that while college women experienced higher rates of incapacitated and forced sexual assault than college men, there were no differences by gender for coercive sexual assault. These same authors also found that those with a history of sexual assault reported more PTSD symptoms. More broadly, a meta-analysis found that previous experiences with sexual assault was associated with increased rates of PTSD (Dworkin, 2020). Though researchers have examined the relationship between sexual assault and PTSD, fewer studies have examined this relationship with different sexual assault types. The limited research that has explored these relationships has found that incapacitated and

physically forced sexual assault had similar consequences in terms of perceived trauma and emotional impact (Brown et al., 2009) suggesting that different sexual assault types may be differentially associated with mental health outcomes. As such, it follows that both men and women who experience these sexual assault types should have similar negative health outcomes, but this is not the case. Thus, the question remains, are there particular characteristics or prior experiences of individuals that influence their chances of encountering stressors and thus heightening their risk for poorer mental health?

A social stress framework

A social stress framework is useful for understanding the process that links early familial stressors experienced by young adults to PTSD symptoms. Stressors are "conditions of threats, demands or structural constraints that, by their very occurrence or existence, call into question the operating integrity of the organism" (Wheaton, 1999, p. 177). In other words, stressors can affect young people's ability to effectively cope. Stressors are not only intertwined with each other, but stressors can have both direct or indirect effects on mental health (Wheaton, 1999). Although most people in the general population adapt to stress, those with challenging social circumstances, such as those who have experienced child abuse and sexual assault, may suffer poorer mental health compared to those without such experiences. Moreover, the college environment, where positive alcohol expectations exist (LaBrie et al., 2011) and where many students subscribe to beliefs surrounding the normalcy of excessive drinking (Crawford & Novak, 2006; Schulenberg et al., 2020), is associated with an increased risk for sexual assault (Abbey et al., 1996; Kingree & Thompson, 2020). Thus, some students' need to fit in on campus may lead to further stressors that can affect young people's mental health.

Additionally, the location of individuals within the social stratification system influences their chances of encountering stressors (Aneshensel, 1992). Stressors vary according to one's status in society and thus their impact on PTSD symptoms are likely to differ across social conditions. Status strain, a type of stressor, occurs when majority and minority groups have differential access to and possession of power, prestige, and social resources that ameliorate or exacerbate the risk for detrimental mental health outcomes and individual functioning (Pearlin, 1989). Gender can be a source of status strain that may be important for understanding risk factors for poor mental health. That is, college women generally fair worse on mental health, such as greater symptoms of PTSD, compared to college men (Cusack et al., 2019). Women are also at greater risk for sexual assault compared to men (Banyard et al., 2007; Fedina et al., 2018; Tyler & Ray, 2022). Thus, gender is a marker of social placement that affects people's lived realities (Aneshensel et al., 1991), impacting the stressors they encounter.

Based on the above theoretical framework and literature, we hypothesized at the bivariate level that: *H#1*: females will be more likely to experience child sexual abuse whereas males will be more likely to experience child physical abuse; *H#2*: females will be more likely to experience coercive, physical, and/or incapacitated sexual assault compared to males. At the multivariate level, we hypothesized that: *H#3*: females will experience greater PTSD symptoms compared to males; *H#4*: those who experience more child physical abuse will

have greater PTSD symptoms; *H#5*: those who experience child sexual abuse will have greater PTSD symptoms; *H#6*: those who experience greater perceived maternal rejection will have greater PTSD symptoms; *H#7*: those with more BP symptoms will have greater PTSD symptoms; *H#8*: those who experience coercive, physical, and/or incapacitated sexual assault will have greater PTSD symptoms.

Materials and method

Data were gathered in the 2019–2020 academic year at a large public university in the Midwestern United States. Undergraduate enrollment is approximately 25,000 students and the racial composition at this university is approximately 80% White. The sample consisted of 783 undergraduate college women and men.

Procedure

Undergraduate students enrolled in social science courses completed a paper and pencil survey of family histories, risk behaviors, sexual assault, mental health, and support services. All students were given a packet, which included the survey, consent form, and a handout listing various campus resources (e.g., counseling) available to students. Every student was eligible to participate. Students were informed that their participation was voluntary, and their responses were anonymous. Students were given the option of extra credit for filling out the survey. If a student did not wish to complete the survey, they were given another option for extra credit. Students were told that if they chose not to fill out the survey or do the alternative extra credit assignment, it would not affect their course grade. The overall response rate was approximately 96% (783/810). The Institutional Review Board at the first authors institution approved this study.

Measures

Independent variables

Sex.: Sex was coded as 0 = male and 1 = female.

Child physical abuse.: This measure included six items from the Parent to Child Conflict Tactics Scale (PC-CTS; Straus et al., 1998). The PC-CTS is a frequently used scale of parent to child conflict and discipline indicative of psychological and physical abuse (Cotter et al., 2018; Straus et al., 1998). Though its psychometric properties have not been widely evaluated, Straus et al. (1998) found evidence of construct and discriminant validity. Cotter et al. (2018) also found adequate internal reliability among three of the subscales (nonviolent discipline; $\alpha = .72$, psychological aggression; $\alpha = .75$, corporal punishment/minor physical assault; $\alpha = .72$). The severe physical assault subscale had lower reliability $\alpha = .46$; Cotter et al. (2018) though Straus et al. (1998) have indicated this may be due to the lower number of incidences of this type of abuse (Cotter et al., 2018). Items on the PC-CTS include, for example, while you were growing up, how often did a parent/caregiver, “throw something at you in anger,” “hit you with an object,” and “hit you with a fist or kick you hard” (1 = always to 5 = never). Items were reverse coded and summed such that a higher score indicated more child physical abuse ($\alpha = .86$).

Child sexual abuse.: Child sexual abuse was measured by asking respondents, "Before you were age 18, did any family member at least 5 years older than you ever touch you sexually or have you touch them sexually" (0 = no; 1 = yes). This same item has been used in prior studies of college students and has demonstrated convergent validity with child sexual abuse being positively correlated with combined sexual assault (Tyler et al., 2017) and coercive and physically forced sexual assault (Sutton et al., 2021) among Midwestern and Southern college students.

Perceived maternal rejection.: This measure is from a subscale of the instruments used in the Iowa Youth and Families Project (Conger et al., 1992), which included eight items that asked respondents what their relationship with their mother was like when they were growing up at home. For example, how often did your mother/female caregiver, "listen carefully to your point of view," "get angry at you for things you do," "tell you that she loves you," and "criticize you or your ideas" (1 = always to 5 = never). Certain items were reverse coded and then summed such that a higher score indicated higher rejection from their mother/female caregiver (α = .87). This measure has good validity and reliability (Simons et al., 2007). Reliability coefficients range from .81–.87 for men's and women's reports of their mother's rejection (Conger et al., 1994). Construct validity has also been demonstrated as parental rejection is a significant correlate of mental health, substance use, and other risk behaviors (Simons & Robertson, 1989).

Borderline personality symptoms.: This scale included eight items from the Borderline Personality Symptoms scale of the Personal and Relationships Profile (PRP; Straus et al., 1999). These items used in prior studies with college students demonstrate construct validity as they are correlated with other variables including aggression and sexual coercion (Hines, 2008). The PRP included two subscales: instability (e.g., "My mood is always changing") and self-harm (e.g., I often get hurt by things that I do;" 1 = strongly disagree to 4 = strongly agree). The eight items were summed such that a higher score indicated more symptoms of BP (α = .82). Straus et al. (1999) found the internal consistency reliability for the PRP scale was .76 among college students and .74 among a community sample. Because of the smaller number of items in each of these scales, Straus et al. report the reliability as good for both samples.

Sexual assault types.: This scale was assessed using the Revised Sexual Experiences Survey (R-SES) (Testa et al., 2004). The R-SES has three subscales with 12 items total: *coercive sexual assault* (4 items), *physical sexual assault* (4 items), and *incapacitated sexual assault* (4 items). Respondents are asked: How often has anyone: 1) "overwhelmed you with arguments about sex or continual pressure for sex in order to …," 2) "threatened to physically harm you or used physical force (such as holding you down) in order to …," and 3) "When you were incapacitated (e.g. by drugs or alcohol) and unable to object or consent how often has anyone ever … " within the past 12 months? Within each of these three subscales, the following four questions were asked: *a*) fondle, kiss, or touch you sexually; *b*) try to have sexual intercourse with you (but it did not happen); *c*) succeed in making you have sexual intercourse; and *d*) make you have oral or anal sex or penetrate you with a finger of objects "when you indicated you didn't want to?" (1 = never to 4 = more than 4 times) (α

= .88). Due to skewness, three dichotomous variables were created: coercive, incapacitated, and physically forced (0 = did not experience this type of sexual assault; 1 = experienced this type of sexual assault one or more times).

Dependent variable

PTSD symptoms.: This scale is from the PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013). The PCL is a widely used self-report instrument that measures PTSD symptoms. Respondents were provided with a list of problems "that people sometimes have in response to a very stressful experience" and to indicate how much they had been bothered by that problem in the past month. For example, "feeling very upset when something reminded you of the stressful experience," and "avoiding external reminders of the stressful experience (e.g., people, places, conversations…or situations?") (1 = not at all to 5 = extremely). The items were summed such that higher scores indicated more PTSD symptoms (α = .94). Psychometric properties of the PCL were examined in two studies of college students exposed to trauma (Blevins et al., 2015). In study 1 (n = 278), the authors found strong internal consistency (α = .94), test-retest reliability (r = .82), convergent validity (rs = .74 to .85), and discriminant validity (rs = .31 to .60). In study 2 (n = 558), results showed similarly strong reliability and validity (Blevins et al., 2015). The authors conclude the PCL has excellent reliability and validity and is psychometrically sound.

Data analytic strategy

Chi square tests and t-tests were used to examine bivariate associations between sex with dichotomous variables and sex with continuous variables, respectively. Next, ordinary least squares (OLS) regression models were used to assess the linkages between all study variables and the dependent variable, PTSD symptoms. Standardized beta coefficients (β) are presented. Three multivariate models for PTSD symptoms were run: (1) familial risk factors only, (2) familial risk factors and adding in BP symptoms, and (3) familial risk factors, BP symptoms, and adding in three sexual assault types (coercive, physical, and incapacitated). This stepwise approach allowed us to examine any relationships that existed for familial risk factors on their own, and then with BP symptoms, and finally for the three sexual assault experiences. All multivariate models controlled for sex. There was less than 2% missing data per variable. IBM SPSS Statistics, version 25, was used for all analyses.

Results

Sample characteristics

The total sample included 783 respondents. Of these, 65.4% (n = 512) were female. In terms of race, 78.8% of respondents (n = 617) were White, 4.0% (n = 31) were Black/African American, 8.3% (n = 65) were Hispanic or Latino, 5.9% (n = 46) were Asian, 0.4% (n = 3) were American Indian or Alaskan Native, and 2.6% (n = 20) identified their race/ethnicity as "Other." In terms of abuse, 51.6% of respondents (n = 404) reported experiencing one or more types of child physical abuse and 5.1% of respondents (n = 40) reported ever experiencing child sexual abuse. For sexual assault, 22% of the sample (n = 171) experienced incapacitated sexual assault, 9% (n = 68) experienced physically forced sexual assault, and 30% of respondents (n = 238) reported coercive sexual assault. Overall, 40% of

the sample (n = 310) reported experiencing one or more occurrences of sexual assault in the past 12 months (45.5% of females; 28.4% of males).

Bivariate results

Descriptive statistics for all study variables by sex are presented in Table 1. The N, percentage, and χ^2 test, are provided for dichotomous variables, while means, standard deviations, and t-test, are shown for continuous variables. Results showed that female college students reported coercive sexual assault (χ^2 = 23.77, p ≤ .01), physically forced sexual assault (χ^2 = 12.76, p ≤ .01), and incapacitated sexual assault (χ^2 = 15.29, p ≤ .01), more often compared to male college students. Though females also experienced child sexual abuse more than males (χ^2 = 11.13, p ≤ .01), this finding should be viewed cautiously given the small N for males who experienced child sexual abuse. For continuous variables, there was one significant difference by sex: male students reported more child physical abuse compared to female students (t = 3.85, p ≤ .01). These bivariate results are consistent with both *H#1* and *H#2*.

Multivariate results

Table 2 shows the results from OLS regression models for correlates of PTSD symptoms. Model 1, which included the sex variable and familial risk factors, revealed that being female (β = .072, p ≤ .05), experiencing more child physical abuse (β = .117, p ≤ .01), ever having experienced child sexual abuse (β = .132, p ≤ .01), and perceiving greater maternal rejection (β = .256, p ≤ .01), were all significantly associated with greater PTSD symptoms. Model 2 added the variable, BP symptoms, and revealed that BP symptoms was strongly and positively associated with PTSD symptoms (β = .493, p ≤ .01). All previous relationships described in Model 1 remained significant, albeit weakened. Model 3 added the three different types of sexual assault: coercive, physical, and incapacitated. All previous relationships described in Model 2 remained significant in Model 3, with the exception of child physical abuse. All three forms of sexual assault, including coercive (β = .069, p ≤ .05), physical (β = .118, p ≤ .01), and incapacitated (β = .062, p ≤ .05) were significantly associated with greater PTSD symptoms, with the strongest effect being for physical sexual assault. Model 3 explained 38% of the variance in PTSD symptoms. Apart from *H#4* (i.e., link between child physical abuse and PTSD symptoms), these multivariate results are consistent with what was hypothesized.

Discussion

The purpose of our paper was to examine the relationships of early familial risk (i.e., childhood physical abuse, sexual abuse, and perceived maternal rejection), BP symptoms, and three sexual assault types (i.e., sexual coercion, physical force, incapacitation by alcohol or drugs) with PTSD symptoms. Overall, our results show that females experience child sexual abuse and all three forms of sexual assault more than males, while males experience elevated rates of child physical abuse compared to females. Multivariate results show that child sexual abuse, maternal rejection, BP symptoms, and all three forms of sexual assault are all associated with PTSD symptoms. Females also experience more PTSD symptoms compared to males.

These results are generally consistent with a social stress framework. Specifically, primary stressors such as maternal rejection or child abuse are likely to have effects that are long-lasting and may influence some students' ability to effectively cope. Moreover, the college environment can be challenging to navigate, resulting in additional stressors, including the experience of sexual assault. Additionally, the location of individuals within the social hierarchy further increases their chances of encountering stressors as stressors vary according to one's social status in society. Thus, those who experience primary stressors (during childhood) and secondary stressors (during college), are likely to have more difficulty coping and suffer from poorer mental health. To answer our question, college women are more likely to experience child sexual abuse and all three forms of sexual assault compared to men. These prior experiences along with the status strain of being female, where women have fewer social resources and power than men (Pearlin, 1989), increase women's chances of encountering stressors. Thus, women are more likely to experience greater PTSD symptoms compared to men.

Child abuse and perceived maternal rejection

Our results show that all forms of familial risk are positively associated with PTSD symptoms. Our findings are consistent with prior work which finds that experiences of childhood physical and sexual abuse (Becker et al., 2010; Kendra et al., 2012) and maternal rejection (Saleem et al., 2019) are significantly associated with higher PTSD symptoms and later mental health concerns (Saleem et al., 2019). Moreover, our findings suggest that childhood abuse and maternal rejection may continue to impact young people throughout young adulthood. These potentially compounding effects of primary stressors (e.g., child abuse) with later secondary stressors (i.e., sexual assault) signal the need for early prevention efforts of familial risk and efforts to promote more safe, stable, and nurturing relationships in childhood (Centers for Disease Control and Prevention, 2021; Fortson et al., 2016). Both primary and secondary prevention efforts are needed to prevent initial instances of child abuse, and additionally to help mitigate the risk for potential future violence following early childhood risk. Future work is needed to understand how prevention efforts or protective factors may minimize the relationship between early familial risk and later consequential outcomes. Future research is also needed to understand how risk may accumulate across different avenues, for instance violence experiences, mental health issues, and substance use, and how interventions can triangulate efforts for optimum efficacy.

Borderline personality symptoms

Our results reveal that having greater BP symptoms is positively associated with greater PTSD symptoms. This finding is consistent with prior literature which shows high overlap between BP and PTSD (Ford & Courtois, 2014; Golier et al., 2003). It is noteworthy that prior work finds that those with both BP and PTSD are more likely to experience three or more childhood traumatic events (Pagura et al., 2010). This is an important finding because though the link between BP and PTSD has been studied among general populations, less is known about BP as a risk factor for PTSD among college samples. Given the strong association in the current study between BP and PTSD symptoms, further research is warranted to see whether current findings can be replicated with other college populations.

Having greater BP symptoms may exacerbate other mental health issues, such as PTSD, especially among college students who have suffered from numerous stressors.

Sexual assault

Finally, our results show that all three sexual assault types are associated with greater PTSD symptoms. While sexual assault more broadly has been linked to greater PTSD symptoms (Dworkin, 2020), few studies have examined this relationship with different sexual assault types. Our results show that those who have experienced coercive, physically forced, and/or incapacitated sexual assault in the past 12 months all reported significantly greater PTSD symptoms compared to those without these sexual assault experiences. While this is consistent with prior research (Littleton et al., 2019), our study builds on prior findings by examining each form of sexual assault separately. Experiencing any type of sexual assault is likely traumatic, which may lead to reoccurring thoughts of the assault, and hence greater PTSD symptoms (Littleton et al., 2019). Our findings also suggest that there may be some accumulation of risk as those who experience both primary and secondary stressors have greater PTSD symptoms.

Our findings also show that females experience greater PTSD symptoms compared to males. One possible explanation may be because more females experienced sexual assault in the past 12 months compared to males (45.5% vs. 28.4%, respectively). This finding is also consistent with prior literature (Cusack et al., 2019) such that female college students were three times more likely to have reported symptoms of PTSD than males. It is also possible that primary stressors such as child physical or sexual abuse and maternal rejection have long-lasting negative effects on one's mental health (Cantón-Cortés & Cantón, 2010; Saleem et al., 2019). That is, not only do some young adults experience these stressors at a young age but some experience additional stressors in college whether it is pressure to drink excessively to fit in (Crawford & Novak, 2006; Schulenberg et al., 2020), or the increased risk for sexual assault that college students currently face (Fedina et al., 2018). Applied to the current study, the social stress framework helps us understand how primary stressors may continue to impact certain groups, in this case, mostly women, and that the risk may be cumulative as many individuals also experience secondary stressors at college. Because women typically experience these stressors more so than men, they are at increased risk of encountering additional stressors and as such, have poorer mental health compared to men. Thus, while many people adapt to stress, those with challenging social circumstances, including many women on college campuses, are likely to continue to be at higher risk compared to men.

Limitations

This study is not without limitations. First, all data are based on self-reports. Because participants were informed that their answers would be anonymous, it is less likely that they would bias their responses. Another limitation is the retrospective nature of some of the measures (i.e., past 12 months, before the age of 18), which may have resulted in some over- or underreporting if respondents misremembered their behavior or experiences. Third, this study was cross-sectional; therefore, inferences about causality cannot be made. Fourth, this study cannot be generalized to students at other colleges given that the sample

was not randomly selected. Additionally, this sample is relatively homogenous and mostly represents students in social science courses who identify as White; thus, their experiences may differ from those of other racial/ethnic backgrounds and students enrolled in other classes. Moreover, child sexual abuse results should be interpreted with caution given the small number of men who had this experience. Furthermore, the three sexual assault types are not mutually exclusive though their overlap is modest. Finally, symptoms of PTSD were asked about in response to a "very stressful experience," but whether or not that was directly related to sexual assault is unknown.

Conclusion and future research

Notwithstanding these limitations, our study has many strengths that contribute to the existing literature. First, though it is generally believed that men experience low rates of sexual assault, we find high rates among both college men and women (28.4% and 45.5%, respectively) and these percentages are much higher than those shown in previous literature (Aosved et al., 2011; Fedina et al., 2018). Men may be experiencing more sexual assault and/or they may be more willing to report it given efforts on campus to highlight this social problem and provide services and supports for those affected. Second, results show that all three forms of sexual assault are associated with greater PTSD symptoms, though physically forced sexual assault had the strongest impact. Because participants were only asked about sexual assault in the past 12 months, rates reported here may be an underestimate. Future research could examine different types of sexual assault that one has experienced and its relationship to PTSD symptomology to see if these findings are generalizable. If different sexual assault types are differentially associated with PTSD symptoms in future studies, this would have implications for how counselors provide targeted mental health services specific to individual need as well as help to inform sexual assault prevention programs. Third, our findings also provide valuable insight into the relationships between early familial risk factors, mental health symptoms, and violence experiences among college students. Given the paucity of research on early familial risk with BP symptoms among college students, future research is needed to better elucidate these linkages with more refined measures and clearer temporal relations in terms of young adult mental health and sexual assault. Because stressors may be cumulative for some young adults, these experiences may have long-term negative effects on students' mental health and well-being (Cantón-Cortés & Cantón, 2010; Saleem et al., 2019).

Additional research is also needed to understand whether these processes function differently depending upon the group studied. Both the types of risk factors and the likelihood of experiencing them may differ for different demographic groups, such as racial and ethnic minorities, sexual and gender minorities, and those with disabilities. Future research could help advise efforts to improve mental health among college students by informing future programming efforts through further exploration of the nuances between these relationships among additional populations. Universal mental health services on campus that are informed and responsive to topics of sexual assault are important, as men were also found to experience high rates of sexual assault. Related, assisting men to feel welcome and willing to talk about their experiences may help them learn to effectively cope with their emotions. Prior research shows college men are less likely to disclose sexual

assault compared to women (Banyard et al., 2007) and men are less likely to utilize formal (Masho & Alvanzo, 2010) and/or informal supports (McGraw & Tyler, 2021). As such, some college men who have experienced sexual assault may turn to alcohol or drugs for coping (Turchik, 2012). Early screening for PTSD among both college women and men could lead to new programs that focus on healthy coping styles. Such programs may result in the avoidance of self-blame for the early abuse and/or rejection as well as sexual assault that some students may have experienced. Detecting PTSD early and instituting related programming may empower college students and increase mental well-being.

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Table 1.

Descriptive statistics for female and male.

	Female		Male		
Dichotomous Variables	**N**	**%**	**N**	**%**	χ^2
Child sexual abuse	36	7.0	4	1.5	11.13**
Coercive SA	186	36.3	52	19.4	23.77**
Physically forced SA	58	11.3	10	3.7	12.76**
Incapacitated SA	133	26.0	37	13.8	15.29**
Continuous Variables	Mean	S.D.	Mean	S.D.	*t-test*
Child physical abuse	0.98	1.37	1.41	1.63	3.85**
Perceived maternal rejection	15.70	5.76	15.87	4.72	0.40
BP symptoms	14.42	4.40	15.04	4.52	1.81
PTSD symptoms	27.93	12.38	26.18	11.38	−1.90

* $p \leq .05$,

** $p \leq .01$.

SA = sexual assault, BP = borderline personality, S.D. = standard deviation.

Table 2.

OLS regression models for correlates of PTSD symptoms.

	Model 1	Model 2	Model 3
	PTSD Symptoms		
	β	β	β
Female	.072*	.103**	.060*
Child physical abuse	.117**	.085**	.064
Child sexual abuse	.132**	.096**	.081**
Perceived maternal rejection	.256**	.111**	.104**
BP symptoms		.493**	.450**
Coercive SA			.069*
Physical SA			.118**
Incapacitated SA			.062*
Adjusted R^2	.139	.352	.380

* $p \leq .05$,

** $p \leq .01$.

β = standardized beta coefficient, SA = sexual assault, BP = borderline personality.