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CHILDHOOD ABUSE, DISSOCIATION, AND CALLOUS- UNEMOTIONAL TRAITS

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CHILDHOOD ABUSE, DISSOCIATION, AND CALLOUS-UNEMOTIONAL TRAITS

A Thesis

Presented To

Eastern Washington University

Cheney, Washington

In Partial Fulfillment of the Requirements

for the Degree

Master of Science in Clinical Psychology

By

Malika Bains

Summer 2017

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ABSTRACT

CHILDHOOD MALTREATMENT, DISSOCIATION, AND CALLOUS-UNEMOTIONAL
TRAITS

by

Malika Bains

Summer 2017

The purpose of the present study was to examine the associations between childhood maltreatment (physical, sexual, psychological, neglect and exposure to family violence), dissociation, and callous-unemotional traits. Past literature has recognized that a significant subset of children are developing with an extensive history of abuse in an environment that is devoid of nurturing (U.S. Department of Health and Human Services, Children's Bureau, 2016). Unfortunately, children developing in maladaptive environments often develop unhealthy coping mechanisms that impact their personality later in life (Ford, Chapman, Mack & Pearson, 2006; Messman-Moore & Coates, 2007). One example of this phenomenon is the development of cold personality styles (i.e., lack of caring for others, lack of empathy, remorselessness). The present study hypothesized that all the types of childhood maltreatment (physical, sexual, psychological, neglect, and exposure to family violence) lead to the formation of cold personality traits at least partially due to the influence of dissociation. Consistent with my hypothesis, bootstrapped mediational regression analyses indicated that five types of childhood maltreatment were significantly associated with callous-unemotional traits via dissociation. In practice, treating the underlying influence of trauma and dissociation may help in modifying the personality traits associated with childhood maltreatment.

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Childhood Maltreatment, Dissociation and Callous-Unemotional Traits

Every year more than 3 million reports of child abuse are made in the United States involving more than 6 million children (Child Abuse Statistics and Facts, 2013). There is an extensive literature documenting the long-term effects of abuse (Silverman, Reinherz, & Giaconia, 1996). Although not all maltreated children are destined to negative outcomes (Jaffee et al., 2007), the ones who are affected experience complex and negative consequences. The effects of child abuse are not only limited to physical health (Teicher, Andersen & Polcari, 2003), but also increases propensity for numerous psychiatric disorders, including conduct disorder (Kerig, Ward, Vanderzee, & Moeddel, 2009), substance abuse (Dube, Miller, Brown, Giles, Felitti, Dong, & Anda, 2006), post-traumatic stress disorder (Ford, Elhai, Ruggiero, & Frueh, 2009), antisocial personality features (Schimmenti, Di Carlo, Passanisi & Caretti, 2015) and psychopathic traits (e.g., lack of anxiety, manipulation, glibness, poverty of emotions; Lang, Af Klinteberg & Alm, 2006).

Childhood Maltreatment

The World Health Organization (2006) defined child abuse or maltreatment as “constituting all forms of physical and/or emotional ill-treatment, sexual abuse, neglect, or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child’s health, survival, development, or dignity in the context of a relationship of responsibility, trust or power.” In the present study, I examined childhood maltreatment in the forms of physical abuse, sexual abuse, psychological abuse, neglect and exposure to family violence. It is worth noting that exposure to family violence has rarely been examined in the traumatology field, which is unfortunate considering the negative outcomes and the prevalence of this type of abuse.

Childhood physical abuse is generally defined as the presence of a non-accidental injury inflicted by an adult which may result in bodily injury, physical pain, or impairment (Kelly, 1983). This type of abuse may include such acts of violence as striking, hitting, beating, pushing, shoving, shaking, slapping, kicking, pinching, and burning (Shackman & Pollak, 2014). Childhood sexual abuse involves enticing or forcing a child, consensually or non-consensually, to take part in sexual activities, including prostitution. The activities may involve physical contact, including both penetrative and non-penetrative acts, such as kissing, touching or fondling, vaginal or anal intercourse or oral sex. It also includes non-contact activities such as children looking at pornographic material or watching sexual activities, or an adult encouraging child to behave in sexually inappropriate ways (NSPCC, 2009). Childhood psychological abuse has been defined as “verbal and nonverbal acts which symbolically hurt the other, or threaten to hurt the other” (Straus, 1979, p. 77). It includes any attitude, behavior, or failure to act that interferes with a child’s mental health or social development. It can range from a simple verbal insult, name calling, or yelling to an extreme form of punishment such as threatening to take away something that is important to the child (Allen, 2011; Tracy, 2016).

Exposure to family violence includes witnessing abuse and violence within the home that is not directed at the child. This type of abuse may include the child being physically present during an episode of domestic violence such as a hostile verbal quarrel, kicking, shoving or beating, or seeing the aftermath of the abuse (e.g., seeing bruises on one of the parent or a disrupted house; Summers, 2006). Neglect is defined as the failure of a parent or other person with responsibility for the child to provide needed food, clothing, shelter, medical care or supervision to the degree that the child’s health, safety, and well-being are threatened with harm. (Child Welfare Information Gateway, 2015)

Childhood Maltreatment and Dissociation

Dissociation can be defined as an alteration in consciousness marked by a disconnection from the self or the environment, memory problems, flashbacks, and dizziness (Briere & Runtz, 1989; Schimmenti & Carretti, 2006). The process of dissociation alters the normal association of behavior, memory, emotions and identity in a way that particular experiences are compartmentalized rather than integrated into a coherent view of self (Egeland & Susman-Stillman, 1996; Putnam, 1993). In dissociation, affect is separated from experience thereby distorting one's interpretation of ongoing situations (Egeland & Susman-Stillman, 1996). The environmental influence such as childhood maltreatment has been associated with development of dissociation. Childhood maltreatment decreases an individual's capacity to control and tolerate strong (especially negative) affect without resorting to avoidance strategies (Briere, 1992). During threatening experiences, the abused individual may become an expert at using powerful avoidance strategies such as dissociation as their defense mechanism to avoid pain (Briere, 1992; Bromberg, 1998). A clinical population of children with histories of childhood maltreatment (including physical abuse, sexual abuse, and neglect) and other traumatic experiences (separation from or losing family members) during childhood were seven times more likely to develop a dissociative disorder than the children with no abuse history (Pasquini, Liotta, Mazzoti, Fassone, & Picardi, 2002).

Child physical and sexual abuse have been consistently positively associated with the development of dissociative symptoms in clinical (Chu & Dill, 1990; Lipschitz, Kaplan, Sorkenn, Chorney, & Asnis, 1996) and non-clinical sample of population (Briere & Elliot, 2002; Mulder, Beautris, Joyce, & Fergusson, 1998; Sandberg & Lynn, 1992). Children experiencing childhood physical and sexual abuse find themselves in a conflicted situation because the person

in the position of providing comfort is also the one inflicting pain (Egeland & Susman-Stillman, 1996). In such circumstances, dissociation may become the only means of coping for the child who has no other place to turn for comfort and support. Moreover, physical pain can be intolerable. Therefore, during physical abuse the child learns to dissociate from the pain as a defense mechanism (Giolas & Sanders, 1992). Particularly in child sexual abuse, the caregiver involved may have a public persona of a loving parent which may model denial and form the basis of dissociation for the victimized child (Egeland & Susman-Stillman, 1996). The lack of emotional support further contributes to the adapting dissociation strategies to move past the conflicting circumstances. Unfortunately, such strategies lead to an unintegrated, and incomplete view of child's self and others (Talbot, 1996).

Although most of the literature has focused on the effects of physical and sexual abuse on dissociation, some have proposed the importance of investigating psychological abuse (Briere & Runtz, 1988; Ferguson & Dacey, 1997). A number of studies have indicated that psychological abuse is significantly associated with negative social and emotional development in children (Egeland, Stroufe, & Erickson, 1983; Vissing, Straus, Gelles, & Harrop, 1991) which may also persist into adulthood (Briere & Runtz 1988; Gross & Keller 1992). Psychological abuse includes constant denigration by the parent which often leads the child to believe or "know" that their bad behavior was the root cause of the abuse (Glaser, 2002). The self-blaming by the child results in the development of early maladaptive schemas along the theme of interpersonal disconnection and rejection (Cecero, Nelson, & Gillie, 2004). Specifically, mistrust, abuse, emotional deprivation, defectiveness and shame schemas are associated with psychological abuse (Cecero, Nelson, & Gillie, 2004). The early maladaptive schemas become overwhelming for the child to the extent that the traumatized child begins coping with the parent's hostility and

rejection by adopting avoidance strategies (Young, Klosko, & Weishaar, 2003). The avoidant coping style leads the child to become socially inhibited and avoid intimate relationships that may trigger those maladaptive schemas (Young, Klosko, & Weishaar, 2003).

Childhood neglect and exposure to family violence have been rarely examined in relation to dissociative experiences (Sanders & Giolas, 1991; Zlotnick et. al., 1995). Nevertheless, there are theoretical linkages which may explain their association with dissociation. A child raised by an emotionally unresponsive caregiver may cope with the neglect by emotionally isolating themselves from their caregiver—rather than turning towards them for comfort (Egeland & Susman-Stillman, 1996). While this strategy protects the child from feeling unworthy of her caregiver’s attention, the child is placed in the position of managing distressing situations on her own that she is unequipped to handle (thereby leading to dissociative coping; Bowlby, 1980). In a case of child exposed to family violence, both the perpetrator and a victim are known to the child which is particularly psychologically damaging to the child’s mental health (Spilsbury et al., 2007). Furthermore, the child may even try to vainly intervene and resolve the marital conflict in an attempt to achieve a nurturing and safe environment. Unfortunately, this unsuccessful attempt increases the child’s distress, frustration, and pain (O’ Brien, Margolin, & John, 1995). Such a neglectful and violent environment lead the child to utilize avoidance strategies, such as dissociation, to keep functioning in other spheres of their life.

Dissociation and Callous-Unemotional traits

Callous-unemotional traits. Callous-unemotional traits were initially elucidated by Paul Frick (1998) in an effort to differentiate the symptoms of childhood psychopathy from the more general constellation of symptoms that comprise conduct disorder. Frick and colleagues specifically focused on the affective traits of psychopathy, also referred to as callous-

unemotional (CU) traits. In 2013, the *Diagnostic and Statistical Manual of Mental Disorders – V* recognized CU traits as a subtype specifier of the youth antisocial behavior diagnosis of conduct disorder (i.e., conduct disorder with limited prosocial emotions). Therefore, it seems pertinent to investigate the etiological process behind the development of CU traits in order to provide youth with appropriate interventions at an early stage in their development.

Callous-unemotional traits are characterized by lack of empathy, callousness towards self and others, low interpersonal emotions, a lack of conscience and remorse, and a lack of fear of punishment (Waller et al., 2016; Kerig & Stellwagen, 2009). CU traits are associated with the most severe, intractable conduct problems in youth (Hipwell et al., 2007; Kerig & Stellwagen, 2009). Past research has focused on several pathways that could contribute to the development of callous-unemotional traits, such as genetic etiologies (Larson et al. 2006), brain structures and functions (Chabro et al., 2011; Dadds et al., 2009; Teicher, Polcari & Anderson, 2003), temperamental and personality characteristics (Frick et al. 1999; Sadeh et al., 2009) and environmental factors (i.e., childhood abuse, harsh parental discipline, and deviant peer influence; Kerig et al., 2012; Kimonis et al., 2004).

The etiology of CU traits in females. Heritability research indicates that the amount of variation in CU traits accounted for by genetic effects ranges from 42% to 68% (Bezdjian, Raine, Baker, & Lynam, 2011; Larsson, Andershed, & Lichtenstein, 2006; Taylor, Loney, Bobadilla, Iacono, & McGue, 2003; Viding et al., 2005). However, it is worth noting that these studies have typically utilized male samples and little is known about the etiology of CU traits in girls. Preliminary evidence indicates there are indeed important differences in how CU traits develop in females. For example, while male membership on the stable-high CU trajectory is typically associated with the genetic influences, emerging evidence indicates that environmental

influences are more relevant for girls on this trajectory (Fontaine, Rijdsdijk, McCrory &, Viding 2010; Viding, Frick, & Plomin, 2007). More specifically, Fontaine and colleagues found that harsh parental discipline (e.g., hitting, shouting), negative parental emotions towards children (e.g., high levels of impatience and frustration), and chaotic family environments (e.g., disorganization and noise) were specific to the development of CU traits in girls. Given these etiological differences, it is vitally important for developmental psychopathologists to examine how CU traits develop in females as this process may be unique. Currently, the paucity of research on this topic constitutes a major “gap” in the scientific literature that may be grossly misleading when considering the reasons that females develop CU traits. The current study was designed to address this issue by examining the etiology of CU traits in females via a pathway that leads from childhood abuse to dissociation.

Dissociation and callous-unemotional traits. Extant research has rarely examined the association between dissociation and callous-unemotional traits which is unfortunate given that this process may be particularly important for females. However, there are few studies that have associated dissociation to some features of callous-unemotional traits. For example, Dorahy (2010) found that dissociation was associated with individual’s disconnection from interpersonal relationships. Dorahy explained that dissociation is a mechanism of psychological avoidance which activates during overstimulating or overwhelming interpersonal interactions. Although dissociation protects the individual from hostility, it simultaneously creates distance between the individual and others via psychologically disconnection. Furthermore, such experiences may increase the fear and avoidance of interpersonal relationships (Dorahy, 2010; Dorahy et al., 2012) leading to callous attitudes towards peers and family members.

Emotional numbing is a core component of dissociation (Spiegel, 1997). Youths with higher dissociative symptoms are also higher in presenting symptoms of emotional numbing (Bennet, Modrowski, Kerig, & Chaplo, 2015). Dissociation reduces perceived suffering by numbing the emotions of pain during the traumatized event. However, as dissociation becomes a habitual pattern for the child, emotional numbing also extends to the experiencing of empathy and guilt (Kerig, Bennet, Thompson & Becker, 2012; Lethbridge, Richardson, Reidy & Taroyan, 2017). Furthermore, Porter (1996) suggested that emotional detachment eventually becomes a core component of the individual's interpersonal style thus contributing to callousness towards others. Considering the associations between dissociation and features of CU traits, it plausible that dissociation could contribute to the development of CU traits.

Childhood Maltreatment, Dissociation, and Callous-Unemotional Traits

Although it is generally accepted that callous-unemotional traits have strong temperamental and physiological roots (Waller et al., 2016), there are strong theoretical linkages that explain the development of callous-unemotional traits via dissociation in females. From a developmental psychopathology perspective, child abuse and neglect are viewed as violations of “the average expectable environment” (Cicchetti & Valentino, 2006, pp. 129) that is essential for the child's healthy biological, emotional, social, and cognitive development. Specifically, a child's secure attachment relationship with her parents provides a “safe base” (Bowlby, 1969) which is fundamental to the child's ability to attain necessary developmental capacities, like ego resilience, self-control, emotion regulation, empathy, perspective-taking, and moral judgment (Cicchetti & Toth, 2005; Cicchetti & Valentino, 2006; Kerig, Ludlow & Wenar, 2012), which are usually absent in individuals with CU traits. A history of childhood maltreatment experiences

might trigger a type of “survival coping” in females resulting in the development of callous unemotional traits (Ford, Chapman, Mack & Pearson, 2006).

More specifically, the adaptive calibration model suggests that atypical pattern of emotional functioning – such as avoidance strategies – are utilized by children as a means of coping with extreme environmental stressors (Del Giudice et al., 2011). Youth exposed to adverse rearing environments dampen their stress response thereby emotionally shielding them from harsh circumstances. Gradually, strategies that appear to be adaptive or functional at one point in development become maladaptive as the individual matures. The short-term relief acquired after implementing the “adaptive” strategies may reinforce the continued utilization of avoidance as an automatic response to distressing situations. This automatic habitual utilization of detaching themselves from self and others, along with dampening of emotions, could compromise the person's ability to draw on and respond to personal relationships in an adaptive and flexible way (National Research Council, 1993) leading to the development of callous-unemotional traits over time. This model may be particularly relevant to females as this population has been raised from birth to be acutely sensitive regarding their ongoing interpersonal relationships (Zahn-Waxler).

There is one study that indicated the contribution of childhood abuse and emotional numbing on the development of CU traits. Kerig et al. (2012) examined the underlying mechanism that accounts for the association between trauma exposure (including natural disasters, child maltreatment and bereavement) and callous-unemotional traits in a sample of adolescent delinquents. The results indicated a significant relationship between trauma exposure and callous-unemotional traits via the mediating influence of the general numbing of emotions. However, Kerig and colleagues examined abuse as a general category (rather than specifically

examining subtypes of childhood abuse) so it is unclear which specific subtype(s) of childhood maltreatment are associated to callous-unemotional traits. Moreover, Kerig and colleagues utilized a mixed sample of males and females (although the participants were predominantly male); therefore, it is unclear if the results of this study are applicable to females.

The Present Study

The present study aims to explore the associations between childhood maltreatment (physical abuse, sexual abuse, psychological abuse, neglect, and exposure to violence), dissociation and callous-unemotional traits amongst college-aged females.

I hypothesized that all types of childhood maltreatment (physical abuse, sexual abuse, psychological abuse, neglect, and exposure to violence) would be significantly associated with callous-unemotional traits via the influence of dissociation. Furthermore, I hypothesized that all types of childhood maltreatment would be positively associated with dissociation and that dissociation would be positively associated with callous-unemotional traits.

Method

Design

The present study was conducted using bootstrapped multiple mediational analysis. The five types of childhood maltreatment i.e., physical, sexual, psychological, neglect, and exposure to family violence were the independent variables. Callous-unemotional traits were the dependent variable. Dissociation was assessed as a mediator.

Participants

The study constituted of 103 female undergraduate students studying at Eastern Washington University. Participants were offered extra credit for their participation in the study. The majority of the participants were White/Non-Hispanic making up 66.66% of respondents,

the remaining participants were Hispanic/Latin American (19.6%), Native American (2.9%), Asian/Pacific Islander (6.9%), and other (5.0 %). All the participants were above the age of 18 but less than 25 years of age. There were no other criteria for the exclusion of the participants.

Measures

Inventory of Callous-Unemotional Traits. Inventory of Callous-Unemotional Traits (ICU; Frick, 2004) is a 24 items self-report measure utilized to assess callous-unemotional (CU) traits (e.g., lack of empathy, lack of guilt, poverty in emotional expression) which are relatively stable across childhood into young adulthood, at least compared to other measures of childhood personality and psychopathology (Frick, Kimonis, Dandreaux, & Farrell, 2003). Items are rated on a 4-point Likert scale of 0 (Not At All True), 1 (Somewhat True), 2 (Very True) and 3 (Definitely True). The measure is composed of three subscales, namely, Callous Scale (9 items), Unemotional Scale (5 items) and Uncaring Scale (8 items). An example of each scale are as follows, Callous Scale – “I do not care if I get into trouble.” Unemotional Scale – “I do not show my emotions to others.” All the items on the Uncaring Sale are reversed e.g., “I work hard on everything I do.” The reverse items were recoded so that higher number represented more callous-unemotional traits. The Cronbach’s alpha for this scale was .82.

Trauma Symptom Checklist. Trauma Symptom Checklist (Briere & Runtz, 1989) is a brief, abuse-oriented instrument which is utilized as a measure of traumatic impact, most notably in the area of childhood maltreatment. Trauma Symptom Checklist (TSC) consists of 33 symptom items, each of which is rated for a frequency of occurrence on a four-point Likert scale. Combinations of TSC items summed to produce five symptoms subscales - Dissociation, Anxiety, Depression, Sexual Abuse Trauma Index, Sleep Disturbance and Sexual Problems. In the present study, I only utilized the Dissociation subscale which consisted of six items. Some of

the example items are as follows – “Spacing out (going away in your mind),” “Memory problems,” “Feeling that things are unreal.” Items were added together to get the composite score ($M = 5.23$; $SD = 3.32$; $\alpha = .81$).

Maltreatment Experiences. The Maltreatment Experiences measure (Kerig & Stellwagen, 2010) was utilized to record the childhood abuse history of the participants. The measure is composed of five component subscales that describe the type of abuse experienced by the individual – Physical Abuse, Sexual Abuse, Psychological Abuse, Neglect, and Exposure to Family Violence. Each subscale consisted of 4 items – 2 items examining the maltreatment experiences of the participants when they were 0-9 years old and 10-18 years old and another 2 items assessing the frequency of the abuse that occurred during the respective age range. Items were rated on a Likert scale that ranged from 0-7 depending on each item. An example of one of the item under the Sexual Abuse subscale is as follows - “Did you ever experience physical abuse as a child aged 10-18 years old? 0 = None/Can’t Recall, 1 = Minor bruises, scrapes, 2 = Welts, bruises, cuts, 3 = Deep bruises, minor burns, wounds needing stitches, 4 = Deep cuts or serious burns, fractures, concussions; broken bones, 5 = Required hospitalization or had long-lasting injuries: severe burns, internal injuries, head injury.” The Cronbach’s alpha for this measure was .87.

Descriptive statistics for the dependent variable (callous-unemotional traits), the mediator (dissociation), and the independent variable (childhood maltreatment) are presented in Table 1.

Procedure

All procedures in this study were approved by the Institutional Review Board of Eastern Washington University. Participants were approached in a classroom before the beginning of a lecture. Professors of each class were instructed to read the enrollment script to students, ahead

of time, to inform them of the research and possible risks associated with it. On the day of the research study, the researcher reminded of the participants of their right to leave the study without penalty at any time if they felt any discomfort. All the measures were administered as a “paper and pencil” instruments that could be completed in 15-20 minutes. All student surveys were anonymous.

Results

Correlations

I predicted that all types of childhood maltreatment would be positively correlated with dissociation and that dissociation would be positively correlated with callous-unemotional traits. Table 2 presents the correlations among the study variables. As predicted childhood physical abuse ($r = .28, p = .005$), childhood sexual abuse ($r = .23, p = .020$), childhood psychological abuse ($r = .34, p = .000$), childhood neglect ($r = .22, p = .026$) and exposure to family violence ($r = .36, p = .000$) indicated a significant positive correlation with dissociation. As predicted, dissociation was also significantly correlated with callous-unemotional traits ($r = .28, p = .004$). In addition to what was predicted, childhood sexual abuse ($r = .26, p = .008$), and psychological abuse ($r = .26, p = .010$) were also found to be positively associated with callous-unemotional traits

Bootstrapped Multiple Mediation Analysis

To assess the hypothesis that childhood abuse would be associated with callous unemotional traits through the indirect effects of dissociation, multiple regression analyses were performed utilizing Hayes’ (2013) PROCESS SPSS macro (Model 4) which allows for the testing of models with bootstrapped confidence intervals (CIs). In mediational models, Path A represents the association between the independent variable and the mediator, Path B represents

the association between the mediator and the dependent variable, Path C' (the direct effect) represents the association between independent variable and the dependent variable without the inclusion of the mediator, Path ab (the indirect effect) represents the association between independent variable and the dependent variable with the inclusion of the mediator, and Path C (the total effect) represents the combined association of the direct and indirect effects ($C' + ab$). In bootstrapped models, a significant indirect effect, as evidenced by the exclusion of 0 from the 95% CI, is consistent with statistical mediation.

Figure 1-5 demonstrate the bootstrapped multiple mediational analyses utilized to test the association between childhood maltreatment and callous–unemotional traits via the indirect influence of dissociation. As hypothesized, the bootstrapped mediational analysis showed significant indirect effect of childhood physical abuse, $B = .18$ $BootSE = .11$; 95% $BootCI = [.0325, .4846]$, childhood sexual abuse $B = .12$, $BootSE = .08$, 95% $BootCI = [.0160, .3510]$, childhood psychological abuse, $B = .09$, $BootSE = .06$, 95% $BootCI = [.0125, .2453]$, childhood exposure to family violence, $B = .16$, $BootSE = .01$, 95% $BootCI = [.0398, .3805]$, child neglect, $B = .27$, $BootSE = .30$, 95% $BootCI = [.0321, .9644]$ on the development of callous-unemotional traits via the influence of dissociation

Discussion

The results of this study are consistent with the adaptive calibration model which suggests that childhood trauma initiates an avoidance strategy of dissociation in the victimized child leading to the formation of callous-unemotional traits over time (Del Giudice et al., 2011). As hypothesized, all types of childhood maltreatment (physical abuse, sexual abuse, psychological abuse, neglect and exposure to family violence) were significantly related to dissociation in line with the past research (Pasquini, Liotta, Mazzoti, Fassone, & Picardi, 2002;

Sanders & Giolas, 1991; Chu & Dill, 1990; Ferguson & Dacey, 1997; Zlotnick et al., 1995). It is important to note that majority of the past literature focused on clinical samples of males, therefore the present study contributes to the literature by finding significant association between childhood maltreatment and dissociation in a college-aged (18 to 25) female population.

The associations between all types of abuse and dissociation can be explained by a few common mechanisms. First, all types of abuse include the component of emotional pain where the child is in a constant struggle to escape the psychological suffering due to the traumatic event (Messman-Moore & Coates, 2007). Second, Bowlby (1973) described how child's representation of the world and self are developed from their caregiver's availability, potential and willingness to provide care and protection. Childhood maltreatment of any form violates the formation of child-parent attachment leaving the child feeling insecure and unprotected (Trickett & McBride-Chang, 1995). Furthermore, the victimized child perceives the world as hostile and dangerous, rendering all ongoing experiences as unsafe. Unconsciously, the child learns to utilize the process of dissociation by defensively excluding the traumatic experience to maintain at least a minimum functioning in other spheres of life (Schimmenti & Caretti, 2016)

As hypothesized, dissociation was significantly associated with callous-unemotional traits in females. Youth with callous-unemotional traits are described as lacking empathy, conscience, remorse, a fear of punishment, and a concern for self and others (Kimonis et al., 2008; Kerig & Stellwagen, 2009). Farina and Liotti (2013) state, "Dissociative process and symptoms related to childhood experiences could be viewed not only as features of specific disorder but also as a psychopathological dimension with a negative outcome" (p. 11). The formation of callous-unemotional traits can be explained as the long-term consequence of child's utilization of dissociation as survival mechanism during traumatic events. Dissociation helps the

child reduce perceived suffering by numbing the emotions of pain and hurt. However, as dissociation becomes a habitual pattern for the child, emotional numbing also extends to the experiencing of empathy and guilt (Kerig, Bennet, Thompson & Becker, 2012; Lethbridge, Richardson, Reidy & Taroyan, 2017); furthermore, detaching from the reality can lead to the misinterpretation of social cues as hostile and dismissive (Trickett & McBride-Chang, 1995). Callousness can spring from a lack of empathy and guilt as well as the perceived hostile nature of the peer and family environments.

Each mediational analysis for each subtypes of abuse – physical, sexual, psychological, neglect, and exposure to family violence – had a significant indirect effect on the development of callous-unemotional traits via the influence of dissociation. Child abuse and neglect violates the nurturing environment that is expected for the child’s healthy growth. The ramifications of children’s exposure to family violence has not been previously analyzed in relation to CU traits, although exposure to communal violence has been positively associated with CU traits (Davis, Ammons, Dahl & Kliewer, 2015). Conceptually, exposure to family violence would be expected to be even more problematic as such violence will preclude the development of the safe base children require. Furthermore, family violence may motivate a child to try and intervene—typically unsuccessfully—thereby increasing the child’s distress, frustration and pain further. Furthermore, the child’s involvement in the conflict focuses the attention of the caregivers on the “child’s problem” thereby reducing marital distress but increasing the child’s distress and guilt (O’Brien, Margolin, & John, 1995). In such circumstances the child resolves the overwhelming emotions by escaping from the reality via dissociation.

Childhood neglect evidenced the highest indirect effect on the development of CU traits. Unlike other types of abuse, childhood neglect is more constant and present for a longer period

of time. The child raised by an emotionally unresponsive caregiver may cope with neglect by emotionally isolating themselves from their caregiver—rather than turning towards them for comfort (Egeland & Susman-Stillman, 1996). Although this strategy protects the child from feeling rejected by her caregiver, the child is placed in emotionally stressful position of managing distressing situations on her own leading to dissociative coping (Bowlby, 1980). Childhood neglect is associated with social and emotional withdrawal (Gleason et al., 2011) which in some cases could lead to extreme forms of attachment failures such as Reactive Attachment Disorder (limited social responsiveness, failure to seek comfort when distressed, lack of positive affect; Hanson & Spratt, 2000).

A previous study (Daverson, 2010), examined the effect of childhood neglect on the development of CU traits via alterations in the limbic system, a process that could be consistent with our findings. Logically, the psychological experience of dissociation is consistent with the parallel (biological) process of limbic shutdown. Future researchers could examine this possibility by designing multidimensional studies that examine possible interactions between dissociation and limbic shutdown.

The mediation analysis for childhood sexual abuse also indicated a direct effect on the development of CU traits. The different context for childhood sexual abuse type of could help to explain the existence of different pathways to the development of CU traits. Some sexually abused youth are “groomed” (i.e., the abuse does not involve violent behaviors but is rather is conducted in a subtler manner that involves “seduction”), and while this type of abuse can be guilt-inducing for the child it often is not physically painful. The fact that some sexual abuse is not necessarily physically painful may well explain the existence of a direct effect between sexual abuse and CU traits. For example, Groth, Hobson, and Gary (1982) differentiated between

child molesters and child rapists. Child molesters use a grooming process on their victims while child rapists perform a sudden, violent assault. In case of child rapists, the individual feels physically harmed, violated, and powerless which forces the individual in a helpless state (Talbot, 1996). The victim dissociates to escape from the emotional confusion and physiological harm. In case of child molesters, the victim feels betrayed which is accompanied by feelings of shame and guilt. The victim blames herself by thinking “I let them do it” (Whittle, Hamilton-Giachritsis, & Neech, 2013). The idea that the child is to be blamed for what happened may result in keeping the abuse as a secret which contributes to further embarrassment, social withdrawal and generalized perception of self as defective and others as hostile. However, this is a conscious process and therefore may not have significant dissociative elements. Therefore, the indirect pathway which contributes in the development of callous-unemotional traits via the influence of dissociation can be experienced by individuals abused by sudden aggressive assault. Whereas, the direct effect of sexual abuse can be explained by the sexually inappropriate grooming activities.

Limitations

There are some notable limitations to this study. The cross-sectional methodology and self-report measures utilized in the present study may limit the interpretation of the results. Future studies that utilize a longitudinal methodology would be helpful for establishing causal pathways leading from abuse to dissociation to CU traits. The sample consisted mainly of Caucasian, female college students, therefore, the results might not be applicable to men or to women of different ethnic backgrounds, ages, or educational backgrounds. For future research, it would be beneficial to collect data by interviewing the participants to differentiate between the

type of sexual abuse and re-assess their association with dissociation and development of callous-unemotional traits.

Implications

In practice, clinicians working with victims of childhood maltreatment can explore the presence of dissociative symptoms and callous-unemotional traits in an attempt to understand their client's adaptation to early adversity. It would be beneficial to understand and manage the underlying mechanism of dissociation before modifying the external behavioral reactions (callousness, self-harm, and sudden aggressive outbursts). Mindfulness is a technique that can assist the individuals in gaining some control over dissociation by being aware of dissociative processes and learning an intervention for staying in the present while minimizing and tolerating anxiety (Neziroglu and Donnelly 2013; Wagner et al., 2007; Zerubavel & Messman-Moore, 2015). Zerubavel and Messman-Moore (2015) specifically reported that mindfulness techniques that can be utilized for specific features of dissociation. For example, intentionally harnessing attention by observing and describing things in the surrounding (also called grounding techniques) can be very helpful for the individual who dissociate. Furthermore, identifying dissociation and callous-unemotional traits in an individual can be helpful in identifying potential vulnerability toward a range of risk outcomes such as substance use disorder, risky sexual behavior, and eating disorders (Carlson, Oshir, & Kwon, 2015). Clinicians should also be mindful that another form of abuse (i.e. intimate partner violence) has also been linked to negative outcomes including PTSD and social withdrawal. In the future, researchers should examine the possibility that violence initiated by intimate partners can also lead to CU traits via the dissociative process.

Conclusion

The present study found childhood factors that could contribute to the formation of callous-unemotional traits. All the types of childhood abuse – physical, sexual, psychological, neglect, and exposure to family violence – were significantly associated with the formation of CU traits via the indirect influence of dissociation. This suggests that traumatic childhood experiences can lead to long-term negative consequences which persists into the adulthood. Fortunately, mindfulness techniques or mindfulness based therapy (Dialectical Behavior Therapy, and Acceptance Commitment Therapy) can help ameliorate the dissociative experiences, paving the way to the adaptive management of the emotions related to the traumatic experience.

Table 1
Descriptive Statistics for demographics and main study variables

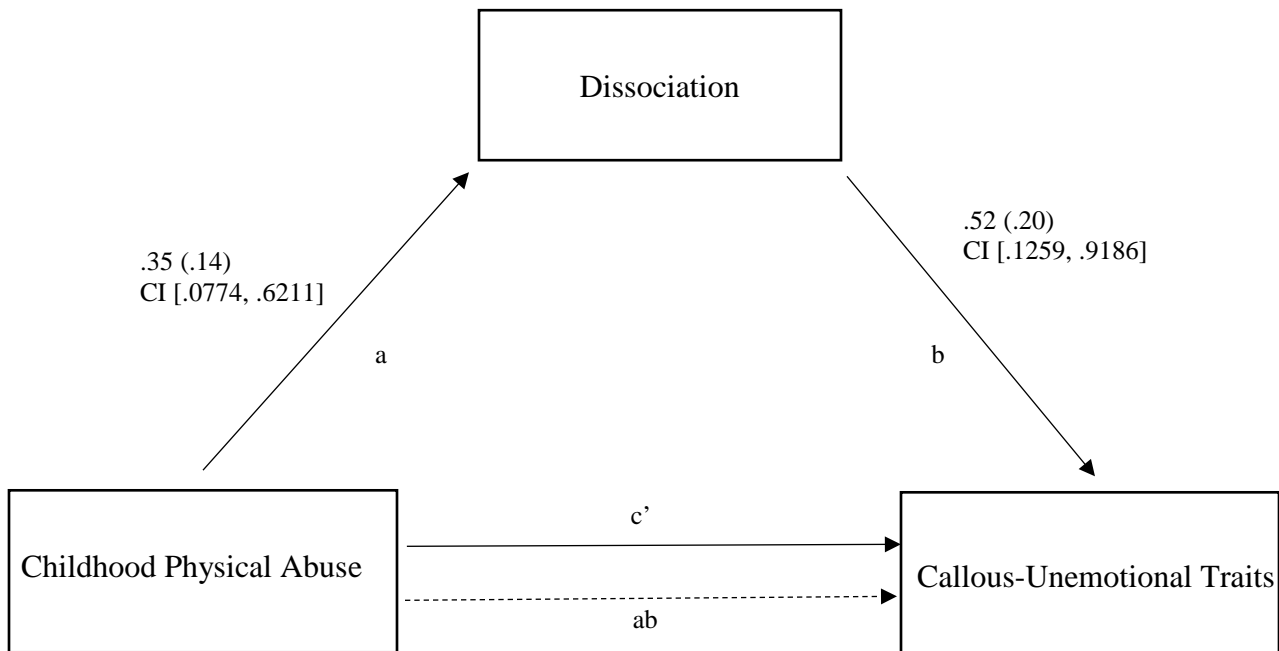
Variables	Mean	SD	Range
Childhood Physical Abuse	1.23	2.50	0 – 10
Childhood Sexual Abuse	1.36	3.00	0 – 14
Childhood Psychological Abuse	3.84	5.40	0 – 19
Childhood Neglect	0.40	1.64	0 – 12
Exposure to Family Violence	2.97	3.76	0 – 16
Dissociation	5.23	3.32	0 – 15
Callous-Unemotional Traits	14.92	6.66	4 – 34

Table 2
Correlation Matrix for Childhood Maltreatment, Dissociation, and Callous-Unemotional Traits.

Variables	1	2	3	4	5	6	7
1. Callous - Unemotional Traits	----	.28**	.15	.26**	.25**	.01	.15
2. Dissociation		----	.28**	.23*	.34**	.22*	.36**
3. Child Physical Abuse			----	.28**	.55**	.05	.54**
4. Child Sexual Abuse				----	.15	.03	.25*
5. Child Psychological Abuse					----	.31**	.54**
6. Child Neglect						----	.28**
7. Exposure to Family Violence							----

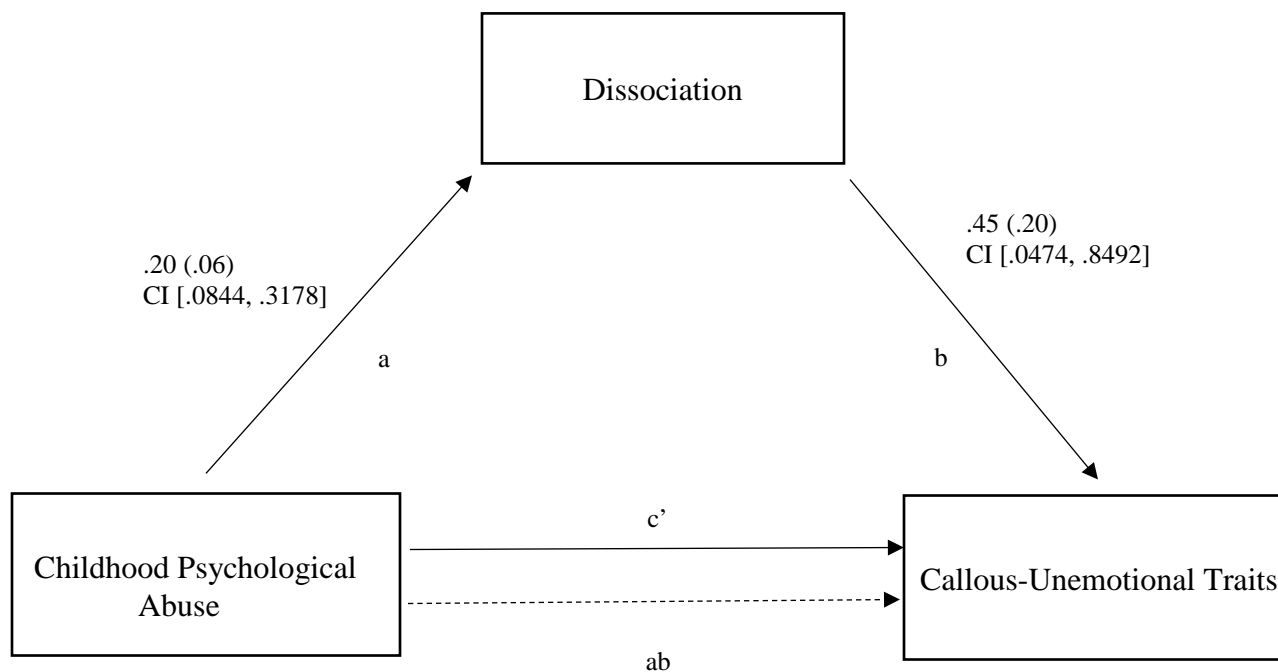
Note. N = 103.

*p < .05. ** p < .01



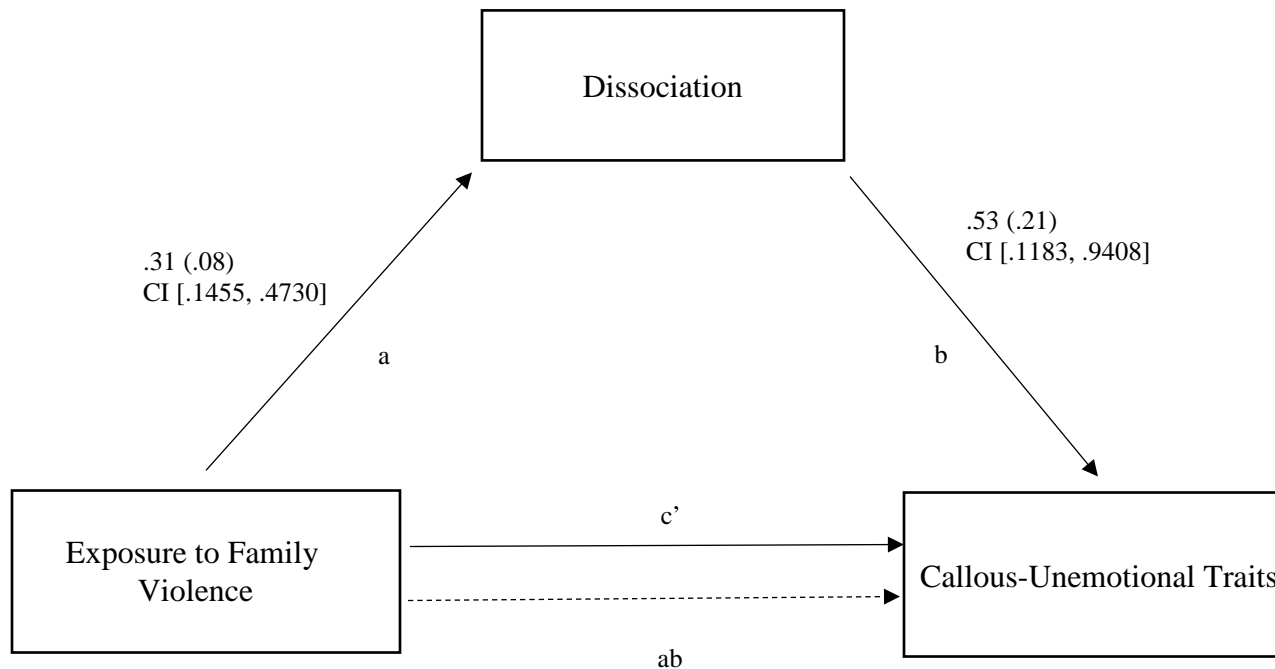
Total Effect (c) = $.44 (.28)$; CI = $[-.1194, .9979]$
 Direct Effect (c') = $.26 (.28)$; CI = $[-.3036, .8174]$
 Indirect Effect (ab) = $.18 (.11)$; CI = $[.0325, .4846]$

Figure 1. Statistical mediation of the association between childhood physical abuse and callous-unemotional traits via dissociation.



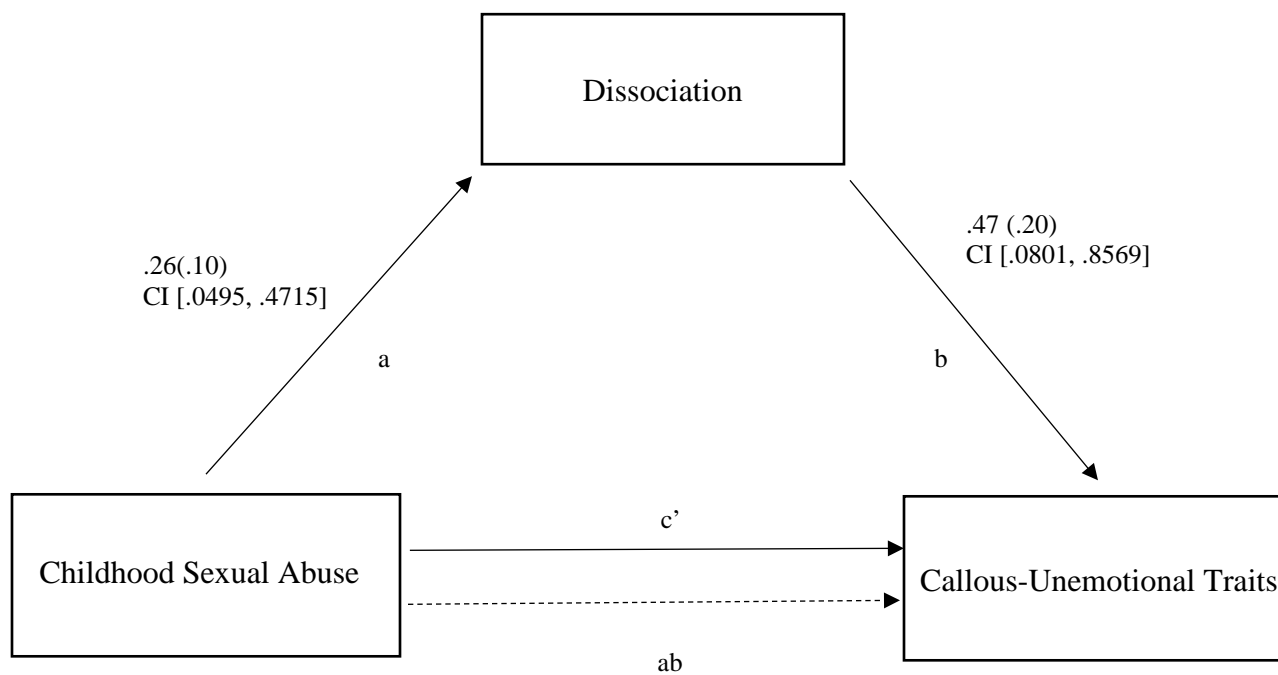
Total Effect (c) = $.32 (.12)$; CI = [.0782, .5591]
 Direct Effect (c') = $.23 (.13)$; CI = [-.0208, .4778]
 Indirect Effect (ab) = $.09 (.06)$; CI = [.0125, .2453]

Figure 2. Statistical mediation of the association between childhood psychological abuse and callous-unemotional traits via dissociation.



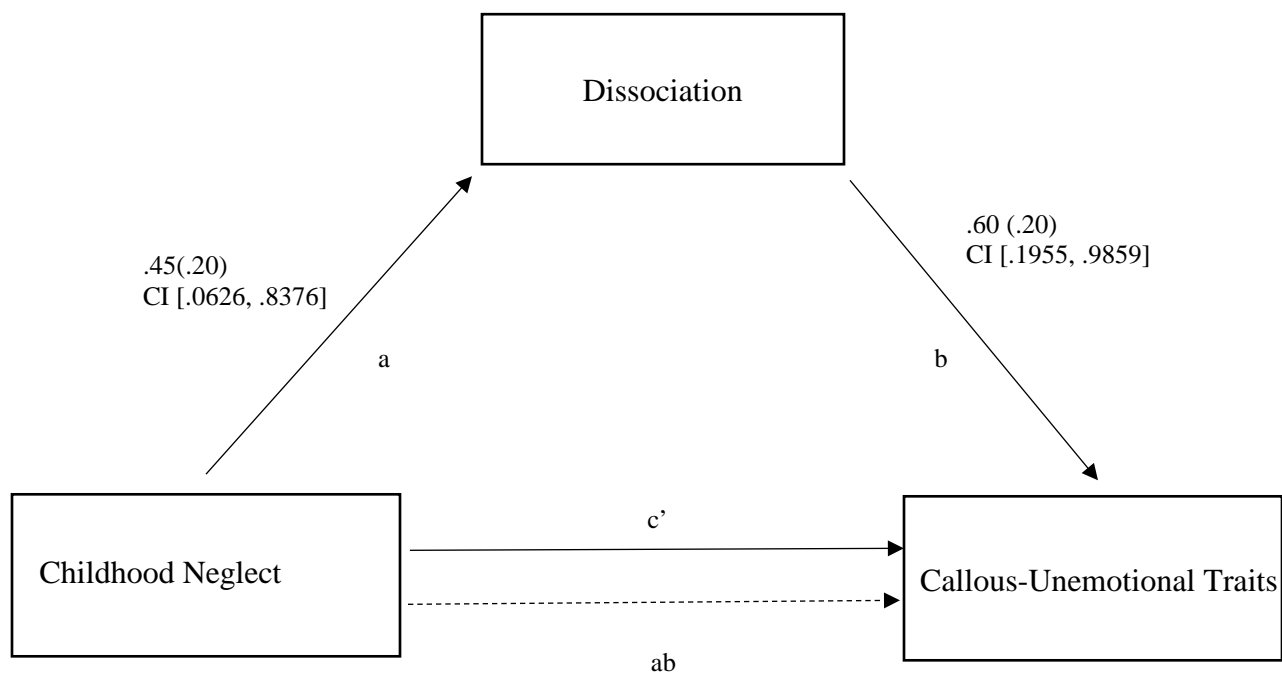
Total Effect (*c*) = $.26 (.18)$; CI = [-.0906, .6068]
 Direct Effect (*c'*) = $.09 (.18)$; CI = [-.2682, .4569]
 Indirect Effect (*ab*) = $.16 (.01)$; CI = [.0398, .3805]

Figure 3. Statistical mediation of the association between childhood exposure to family violence and callous-unemotional traits via dissociation.



Total Effect (c) = $.58(.21)$; CI = [.1535, .9988]
 Direct Effect (c') = $.45(.21)$; CI = [.0289, .8794]
 Indirect Effect (ab) = $.12(.08)$; CI = [.0160, .3510]

Figure 4. Statistical mediation of the association between childhood sexual abuse and callous-unemotional traits via dissociation.



Total Effect (c) = .06 (.40); CI = [-.7459, .8568]
 Direct Effect (c') = -.21 (.40); CI = [-.0026, .5817]
 Indirect Effect (ab) = .27 (.30); CI = [.0321, .9644]

Figure 5. Statistical mediation of the association between childhood neglect and callous-unemotional traits via dissociation.

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