Predicting a relationship between childhood abuse and adult post traumatic stress disorder: The role of dissociation

Cassandra Joy Garkow

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PREDICTING A RELATIONSHIP BETWEEN CHILDHOOD ABUSE AND ADULT POSTTRAUMATIC STRESS DISORDER: THE ROLE OF DISSOCIATION

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment of the Requirements for the Degree Master of Arts in Psychology: General-Experimental

by
Cassandra Joy Garków
June 2009
PREDICTING A RELATIONSHIP BETWEEN CHILDHOOD ABUSE AND ADULT POSTTRAUMATIC STRESS DISORDER: 
THE ROLE OF DISSOCIATION

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Approved by:

David Chavez, Chair, Psychology
Michael Lewin
Matt Riggs

6/19/09
ABSTRACT

The purpose of this study was to uncover relationships between different types of childhood abuse, dissociation and Posttraumatic Stress Disorder (PTSD) symptoms in women. Of particular interest was determining whether or not dissociation influences the occurrence of PTSD symptoms, and if so, what role it plays. It was hypothesized that abuse would predict dissociative symptoms and posttraumatic stress symptoms. Additionally, the role of dissociation was explored to determine if it mediates or moderates abuse and PTSD, or rather relates to these variables independently. Participants were female undergraduate students from California State University, San Bernardino. Measures included the Childhood Trauma Questionnaire, the Dissociative Experiences Scale, and the Penn Inventory for Posttraumatic Stress Disorder. Physical, sexual, and emotional abuse all significantly predicted PTSD, while only emotional abuse predicted dissociation. Dissociation partially mediated emotional abuse and PTSD, but played no role in the relationship between either physical abuse or sexual abuse and PTSD. A possible limitation to this study was that it focused on a sample of college students. Despite this limitation, this study may help clinicians
understand the importance of addressing emotional abuse as a way to decrease mental health problems in survivors of abuse. Future research should examine why dissociation plays a mediating role in the relationship between emotional abuse and PTSD, while not having a similar influence on other abuse types and PTSD.
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CHAPTER ONE

LITERATURE REVIEW

Introduction

Maltreatment against children is a common occurrence in the United States and takes many forms, including physical, sexual, and emotional abuse, as well as physical and emotional neglect. Although the abuse literature focuses on sexual and physical abuse to a large extent, emotional abuse should also be examined, as it also poses a large problem to our society. For example, an often neglected topic is that emotional abuse has been found to co-occur with other types of abuse (see Hines & Malley Morrison, 2005 for a review) and may contribute to poor developmental outcomes (Edwards, Holden, Felitti, & Anda, 2003). For instance, Edwards et al. found that 34.6% of maltreated participants experienced multiple forms of abuse. Furthermore, participants’ scores on a mental health scale decreased as emotional abuse severity increased, particularly for participants who experienced additional types of abuse. In other words, participants had poorer mental health as a function of emotional abuse severity and/or the inclusion of multiple forms of maltreatment.
Thus, this study will look at sexual, physical, and emotional abuse in order to gain a better understanding of the relationship between these societal problems and mental health.

Of particular interest is the association between different abuse types and long-term outcomes. Children who have been abused are at an increased risk of developing various psychiatric problems in adulthood. Posttraumatic Stress Disorder (PTSD) is among the most commonly discussed mental health problems in the abuse literature due to the high prevalence reported by abuse survivors. There is still much to learn regarding relationships between different types of abuse and PTSD, especially considering not all abused children develop posttraumatic stress symptoms. In order to prevent the development of PTSD, it is important to identify potential risk factors for the disorder.

Dissociation has gained recent attention in the literature as a possible link between abuse and PTSD. Although dissociation falls on a continuum from typical behavior (e.g., daydreaming) to maladaptive behavior (e.g., dissociative identity disorder), it is often discussed broadly as a condition that may underlie psychiatric disorders. The literature is still unclear about what role
dissociation plays in the relationship between abuse and PTSD. For example, does it mediate or moderate this relationship? It is also possible that dissociation is related to both abuse and PTSD separately, rather than having an effect on their relationship. A second area of inconsistency in the literature pertains to what types of abuse are more likely to predict PTSD and dissociation.

This study will examine relationships between childhood abuse (physical, sexual, and emotional), dissociation, and PTSD, in order to gain a better understanding of abuse experiences in a college sample of women. Of particular interest is determining whether dissociation mediates or moderates the relationship between abuse and PTSD, or whether it relates to each separately rather than affecting the relationship between the two.

Abuse and Psychopathology

Survivors of childhood abuse have been shown to be at an increased risk of developing various adverse outcomes as adults. Examples include eating disorders (Tobin, Molteni, & Elin, 1995), suicidal behavior (Sfoggia, Pacheco, & Grassi-Oliveira, 2008), anxiety disorders (Feerick & Snow, 2005), low self-esteem (Gross & Keller, 1992), and
substance abuse (MacMillan, et al., 2001), among others. As supported by the literature, the development of mental health issues seems to be a particularly large concern for abuse survivors.

For example, in a community sample of 7,016 men and women, MacMillan, et al. (2001) found that men who experienced childhood physical abuse (CPA) were significantly more likely to have an anxiety disorder, major depressive disorder, alcohol abuse or dependence, or antisocial behaviors, compared to men who had not been physically abused. Additionally, men who were sexually abused in childhood (CSA) were significantly more likely to engage in alcohol abuse or dependence.

Compared to men, women’s abuse experiences were associated with a greater number of the psychiatric disorders examined in the study. Women who experienced either physical or sexual abuse were significantly more likely to have an anxiety disorder, major depressive disorder, alcohol abuse or dependence, illicit drug abuse or dependence, or antisocial behaviors, compared to women who had not experienced abuse. This study used the Child Maltreatment History Self-Report to measure abuse and the
Composite International Diagnostic Interview to measure psychopathology.

Molnar, Buka, and Kessler (2001) looked at possible relationships between CSA and various forms of adult psychopathology in a nationally representative sample of 5,877 men and women in the United States. They used a modified version of the Composite International Diagnostic Interview to measure psychopathology, and sexual abuse was measured by questions that were added to the PTSD subscale. Based on their sample, 13.5% of women and 2.5% of men reported experiencing some form of childhood sexual abuse. Males with posttraumatic stress disorder, alcohol dependence, drug problems, drug dependence, or those with any disorder, were significantly more likely to have experienced CSA than to not have experienced CSA. Additionally, women experiencing depression, dysthymia, mania, agoraphobia, panic attack, panic disorder, posttraumatic stress disorder, social phobia, alcohol problems, alcohol dependence, drug problems, drug dependence, severe drug dependence, or any disorder, were significantly more likely to report experiencing CSA than to not have been sexually abused.
Similarly, Banyard, Williams, and Siegel (2001) found that women who had been sexually abused scored significantly higher on a number of negative mental health outcomes (measured by the Trauma Symptom Inventory) compared to women who had not experienced CSA. Among these were anxious arousal, depression, dissociation, dysfunctional sexual behavior, and avoidance.

A review of these studies demonstrates that many poor outcomes are associated with childhood abuse. The difficulty in studying these relationships comes with determining which outcomes are most prevalent and why. Although abuse survivors experience varying types and degrees of mental health outcomes, certain issues have received a lot of attention. For example, posttraumatic stress disorder has been the focus of many childhood abuse studies, due to its dependence on traumatic experiences such as abuse.

Abuse and Posttraumatic Stress Disorder

Experiences of abuse may greatly distress a child, leading to bad dreams and/or flashbacks among other posttraumatic stress symptoms, which may inhibit their potential to live a fulfilling life. Evidence for this
association was provided by Molnar et al. (2001), who found that women who have been abused were at a greater risk for developing PTSD symptoms in adulthood. Further support was found by Feerick and Snow (2005), who hypothesized that PTSD would be more prevalent in college women who had been sexually abused as opposed to those who had not. Sexual abuse was measured with the Childhood Sexual Abuse Interview, and PTSD symptoms were measured from items that were based on the PTSD portion of the Structured Clinical Interview for DSM-III-R/IV. Of the 313 women in the study, 31% reported experiencing some form of sexual abuse before the age of 18. Those who had been sexually abused were significantly more likely to have experienced PTSD symptoms than those who had not experienced the same type of trauma.

Similarly, Schumm, Briggs-Phillips, and Hobfoll (2006) hypothesized that women who were abused in childhood or raped in adulthood, would be more likely to develop PTSD and have more severe PTSD than women who had not experienced trauma. The authors used a shortened version of the Childhood Trauma Questionnaire in order to measure abuse experiences, and PTSD was measured with the PTSD Symptom Scale-Self-Report. They found significant differences in PTSD severity as a function of trauma, such
that women who experienced childhood abuse, but not adult rape, reported more severe symptoms of PTSD than women who had not experienced trauma. Women who experienced both childhood abuse and adult rape also had higher levels of PTSD than those who had not experienced trauma. Lastly, a hierarchical regression was run with demographics entered in the first step and trauma variables entered second. Trauma significantly predicted PTSD, such that women who experienced either childhood abuse, adult rape, or both, were significantly more likely to report PTSD symptoms than those who had not experienced either trauma.

Although evidence has been found to support a higher prevalence of PTSD in abuse survivors, some studies suggest that the type of abuse is an important factor in determining whether or not this relationship exists. There seem to be mixed results regarding what types of abuse most strongly predict PTSD. For example, Sullivan, Fehon, Andres-Hyman, Lipschitz, and Grilo (2006) found that sexual, physical, and emotional abuse, in addition to physical neglect, had significant positive correlations with PTSD, while emotional neglect did not. Emotional abuse was most highly correlated with PTSD ($r = .54$). They used the Childhood Trauma Questionnaire to measure abuse, and
PTSD was measured with the Child and Adolescent Posttraumatic Stress Checklist. In a two-step hierarchical regression model with age and gender entered first followed by abuse subtypes, only emotional abuse significantly predicted PTSD. Based on this study, emotional abuse appears to be more highly related to PTSD than either sexual or physical abuse, or neglect subtypes.

However, contradictory evidence was found by Spitzer, Chevalier, Gillner, Freyberger, & Barnow (2006) who focused on complex PTSD, which they describe as a type of PTSD that follows more long-term and severe types of abuse or trauma. The CTQ was used to assess self-reported experiences of childhood abuse, while psychiatric records and therapists' knowledge of abuse were used for an expert rating. Patients with complex PTSD were more likely to have experienced childhood physical abuse, but not other types of abuse. This finding was only significant for the CTQ, but did not hold for the expert rating. Differences between this study and others in the literature may be due to the sample and/or measures used. Although many studies use the CTQ to measure abuse, measures of PTSD tend to differ from study to study. Additionally, participants were psychiatric patients who had committed a crime, with the majority being
male. Complex PTSD may also be due to different factors than that of PTSD, especially considering its dependence on more severe and long-lasting types of abuse. The authors also point to the problem of having a small sample size \( n = 32 \), not giving the study enough power to detect significant differences.

Additionally, while this study used a male dominant sample, much of the abuse literature focuses on females. Gender differences are an important issue to be aware of when determining what relationships exist between different types of childhood abuse and adverse outcomes, such as PTSD. Results may often not generalize to the opposite sex, so it is important to either focus on one gender at a time, or to examine differences between males and females regarding abuse experiences. Evidence for this issue was supported by Tolin & Foa (2008). One purpose of their study was to test whether or not males and females differ in their likelihood of developing PTSD symptoms. The authors completed a meta-analysis of 290 articles related to PTSD and various types of trauma, 52 of which were used to test this question. They found that females were significantly more likely to display PTSD symptoms than males, even when looking at different types of samples (adolescents and
children, adults, convenience samples, prisoner/homeless, etc.). A second question addressed was whether or not males and females differ in the types of trauma they experience. Females were significantly more likely to have experienced childhood sexual abuse across different sample types, while no sex differences were found regarding nonsexual abuse or neglect. A third question addressed was whether or not sex differences in PTSD still exist after controlling for trauma type. In terms of CSA, they found that males and females did not significantly differ for most sample types (children, adolescents, convenience samples, not prisoner/homeless, etc.) regarding prevalence of PTSD. The exception was for studies that used adult samples, as PTSD was significantly more prevalent in females than in males. Additionally, there were no significant gender differences for the majority of sample types regarding nonsexual abuse or neglect.

One of the most interesting findings in this study was that females were significantly more likely than males to display symptoms of PTSD, which held constant for adult women after controlling for CSA. While “... men are more likely to be exposed to traumatic events, women are consistently shown to develop PTSD at a rate twice that of
men, regardless of population studied or traumatic incident experienced" (Simmons & Granvold, 2005, p. 291). For example, Hanson, et al. (2008) found that 51.3% of adolescent boys and 44.1% of adolescent girls in their sample reported violence exposure in their lives (a significant difference). Of adolescents who had experienced any type of trauma, 59% of girls and 41% of boys met criteria for PTSD. Due to the higher prevalence of PTSD found in females, the literature needs to uncover reasons for why women may or may not develop PTSD following abuse.

Relationships between Abuse, Dissociation, and Posttraumatic Stress Disorder

One potential link between childhood abuse and PTSD is dissociation. Everyone experiences dissociation at different levels, ranging from typical daydreaming to severe cases of dissociative identity disorder; it also serves as a protective mechanism that allows a person to mentally escape a harmful situation they cannot avoid (Diseth, 2005). Although dissociation may aid in the abuse victim's survival, it becomes problematic when it penetrates other aspects of the person’s life.
Dissociation has been found to be a common experience for abuse survivors, as evidenced by Draijer and Langeland (1999). Based on their sample of 160 male and female inpatients at a psychiatric hospital, they found significant differences in dissociation between those who were physically abused and those who were not, and between those who were sexually abused and those who were not. Additionally, 23% of the variance in dissociation was explained by all trauma variables (witnessing interpersonal violence, separation from parent, etc.), with the strongest predictors being physical and sexual abuse. Those who experienced more severe or long-lasting forms of abuse had significantly higher dissociation scores. This study used the Dissociative Experiences Scale to measure dissociation, and the Structured Trauma Interview to measure abuse.

These findings particularly apply to children who are abused on a regular basis by a parent or caretaker. In order to avoid some of the painful emotional feelings that come with abuse, they may need to avert their attention elsewhere. Abuse survivors may learn to dissociate regularly and develop maladaptive behaviors in the process. In Bucci’s (2003) discussion on the relationship between dissociation and psychological disorders, she states “I
claim that all psychological disorders involve
dissociations of varying types and degrees” (p. 549). The
literature has found some evidence to support this
statement.

One study (Mulder, Beautrais, Joyce, & Fergusson, 1998) aimed at finding relationships between childhood abuse, dissociation, and mental illness. They used the Dissociative Experiences Scale to measure dissociation, and the Structured Clinical Interview for DSM-III-R-Patient Version to measure psychopathology. Abuse was measured by asking participants if they had been physically or sexually abused in childhood. More specific questions were asked if they believed they had been abused. Of the 1,028 participants in their general population sample, 6.3% had high levels of dissociation. Participants with any disorder were more likely to have high dissociation scores compared to those without any disorder. Additionally, those with any mood disorder, substance use disorder, anxiety disorder, or posttraumatic stress disorder were more likely to have high dissociation scores than those without these problems. Participants who were either sexually abused or physically abused in childhood were more likely to have high dissociation scores than those who were not sexually or
physically abused. Additionally, they predicted high dissociation scores from childhood physical abuse, while sexual abuse was not predictive of dissociation after controlling for physical abuse and current mental disorder. Although CSA was not directly related to dissociation, a relationship was found between CSA and current psychiatric disorder, and between current psychiatric disorder and dissociation. Furthermore, CSA was related to CPA, which was in turn related to dissociation. To conclude the discussion of this study, CSA had an indirect effect on dissociation through current psychiatric disorder and physical abuse. This study supported direct relationships between CPA and dissociation and between current mental disorder and dissociation.

Similarly, Kisiel and Lyons (2001) looked at relationships between childhood abuse, dissociation, and psychiatric disorders in a sample of children and adolescents in a residential treatment facility. They used the Adolescent Dissociative Experiences Scale to measure experienced dissociation (completed by the adolescent), and the Child Dissociative Checklist to measure perceived dissociation (an adult caretaker’s perception of the target child’s dissociative symptoms). Abuse was measured with the
History of Abuse Form, and mental health was measured with the Child Behavior Checklist, the Child Acuity of Psychiatric Illness Scale, and the Child Severity of Psychiatric Illness Scale. Females had higher dissociation scores than males, and children who were sexually abused reported significantly higher experienced dissociation scores than children who were not abused. Although no differences were found in experienced dissociation between children who were physically abused and those who were not, perceived dissociation was higher in children who were either sexually or physically abused, compared to those who were not. Significant positive correlations were found between both experienced and perceived dissociation and several mental health outcomes (total Child Behavior Checklist scores, Youth Self-Report scores, internalizing problems, etc.). CSA was related to more mental health problems than physical abuse, and both types of dissociation mediated many of these relationships. For example, perceived dissociation mediated the relationship between CSA and both internalizing and externalizing behaviors, while experienced dissociation mediated the relationship between CSA and suicide risk.
Although both measures of dissociation measured similar constructs, it was interesting that results changed depending on whether the focus was experienced dissociation or perceived dissociation. According to Kisiel and Lyons (2001), adolescents may have a better understanding of their internal dissociative states, as opposed to adult caretakers who can only see related behaviors.

Although the literature has found support for associations between dissociation and many psychiatric problems, PTSD has received the most attention. Both of these conditions are highly related to traumatic experiences, so it is logical for them to be related. For example, in a sample of sexually abused children (based on interviews and medical exams), Kaplow, Dodge, Amaya-Jackson, & Saxe (2005) found that dissociation was significantly positively correlated with PTSD symptoms, such that as dissociation increased, PTSD symptoms increased. The Trauma Symptom Checklist for Children was used to measure PTSD and dissociative symptoms. PTSD was also measured by the Child Behavior Checklist, which was completed by the parents. In addition to finding significant correlations between dissociation and PTSD, Kaplow et al. were able to predict PTSD symptoms from
dissociation using a path analysis model. Lastly, dissociation predicted PTSD symptoms indirectly through anxiety symptoms.

In addition to looking at overall dissociation, some studies have focused on peritraumatic dissociation, which occurs during or not long after trauma (Hetzel & McCanne, 2005). Briere, Scott, and Weathers (2005) wanted to know if PTSD develops as a function of peritraumatic dissociation, persistent dissociation (occurs over time), or general dissociation (can occur before, during, or after the trauma). They used the Peritraumatic Dissociative Experiences Questionnaire to measure peritraumatic dissociation, and the Dissociative Experiences Scale to measure general dissociation. Additionally, the trauma-specific dissociation subscale from the Detailed Assessment of Posttraumatic Stress was used to measure persistent dissociation. Lastly PTSD was measured with the Clinician-Administered PTSD Scale. Participants were recruited based on their exposure to traumatic events. Briere et al. found that participants with PTSD had significantly higher peritraumatic, general, and persistent dissociation than those without PTSD. Using regression, they were able to significantly predict PTSD from all three types of
dissociation. After accounting for demographic variables, types of trauma exposure, and types of dissociation, only persistent and general dissociation remained significant. The strongest predictor of PTSD was persistent dissociation. In conclusion, PTSD may not be dependent upon dissociation that occurred during or soon after the trauma, but rather on more long-term dissociation.

Although the dissociation studies discussed up to this point have focused on main effects between dissociation, abuse, and PTSD, dissociation has also been found to mediate the relationship between childhood abuse and PTSD. Twaite and Rodriguez-Srednicki (2004) tested this idea on a sample of men and women recruited from various public settings in New York City. The authors were interested in whether or not people who were abused in childhood would display more PTSD symptoms in response to the September 11 terrorist attack, and if dissociation would mediate this relationship. Abuse was measured with an abuse history questionnaire, the Dissociative Experiences Scale was used to measure dissociation, the Attachment Style Questionnaire was used to measure attachment, and the Impact of Event Scale-Revised was used to measure PTSD.
Participants with histories of childhood sexual or physical abuse were significantly more likely to have PTSD symptoms than those without these experiences. They also had significantly higher dissociation scores than those who were not abused. Using a hierarchical regression model, they were able to significantly predict PTSD from sexual and physical abuse, explaining 5.3% of the variance. Dissociation, attachment, and nature of exposure to the terrorist attack (live versus taped broadcasts) explained an additional 8% of the variance in PTSD. With the addition of these three new variables to the model, neither childhood sexual nor physical abuse continued to explain a significant amount of variance in PTSD; the only remaining significant predictors were dissociation and attachment. As explained by the authors, these findings support the idea of dissociation and attachment as mediators between abuse and PTSD. In other words, the relationship between abuse and PTSD depends on dissociation and attachment. When dissociation and attachment are controlled for, this relationship is no longer significant. The results of this study need to be interpreted with caution, as physical and sexual abuse experiences were measured with only one question each.
Contrary results were found by Hetzel and McCanne (2005), who examined a mediation model based on peritraumatic dissociation. They did not find support for dissociation as a mediator between childhood abuse and PTSD. Their study was based on a sample of female college students, using a revised version of the Childhood History Questionnaire to measure physical abuse, and a revised version of the Survey of Childhood Sexual Experiences to measure sexual abuse. The Peritraumatic Dissociation Experiences Questionnaire-Self-Report Version was used to measure dissociation, PTSD was measured with the Posttraumatic Stress Disorder Questionnaire, and Psychopathology was measured with the Symptom Checklist-Revised. Even though they were able to significantly predict PTSD from abuse and to reduce this effect by controlling for dissociation, they were not able to predict dissociation from abuse, thus not supporting mediation. Their results support main effects rather than dissociation being a necessary condition for the development of PTSD.

Based on the inconsistent results of these mediation studies, more research needs to be done to determine if dissociation mediates the relationship between child abuse and PTSD or plays some other role. For example,
dissociation may act as a moderator between abuse and PTSD. In other words, the association between abuse and PTSD may change as a function of the strength of dissociative symptoms, rather than dissociation being a necessary condition for the development of PTSD as predicted by mediation. Abuse survivors with high levels of dissociation may be more likely to develop PTSD than those with low levels of dissociation.

Based on the discussion above, it has become apparent that dissociation is still a poorly understood construct. It seems to be related to abuse and PTSD, but whether it mediates, moderates, or relates to these variables separately is still unclear.

In summary, it seems obvious that abuse survivors would experience some difficulties, but uncovering relationships between abuse and maladjustment can be challenging for a number of reasons. For example, results often vary from study to study due to differences in how researchers define abuse, variability in the type of abuse discussed, and the type of sample employed (adults, children, psychiatric patients, college students, etc.). Although the literature has uncovered many important relationships between childhood abuse and adult outcomes,
more research needs to be done before we fully understand why some people develop trauma-related issues such as PTSD, while others do not. This study aims to uncover relationships between differing types of childhood abuse and PTSD symptoms in women. Of particular interest is determining whether or not dissociation influences the occurrence of PTSD symptoms, and if so, what role it plays.

It was hypothesized that abuse variables (physical, sexual, and emotional abuse) would predict dissociative symptoms and posttraumatic stress symptoms. Also of interest was determining what role dissociation plays in the relationship between abuse and PTSD. Particularly, does dissociation mediate or moderate this relationship, or does it relate to each of these variables separately?
CHAPTER TWO

METHODOLOGY

Participants

This study was part of a larger ongoing research project that focused on childhood and adulthood abuse experiences in the female population. Also of interest were negative mental health outcomes and resiliency factors associated with the abuse. The participants were female undergraduate students from California State University, San Bernardino, who were at least 18 years of age. Data was collected from 228 women during the 2009 winter quarter. This data was added to the existing database, resulting in a total of 818 participants (including those who reported experiencing abuse and those who did not). Data analyses were performed based on type of abuse, resulting in three different samples: Those who experienced physical abuse \( n = 319 \), those who experienced sexual abuse \( n = 186 \), and those who experienced emotional abuse \( n = 373 \). The number of participants in each group represents those with complete data on all measures of interest (See table 1 for participant characteristics).
### Table 1

**Participant Demographics by Type of Abuse**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Physical (n=494)</th>
<th>Sexual (n=304)</th>
<th>Emotional (n=599)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic/Latino</td>
<td>202</td>
<td>126</td>
<td>247</td>
</tr>
<tr>
<td>White</td>
<td>113</td>
<td>84</td>
<td>161</td>
</tr>
<tr>
<td>African American</td>
<td>102</td>
<td>49</td>
<td>88</td>
</tr>
<tr>
<td>Asian American</td>
<td>23</td>
<td>12</td>
<td>39</td>
</tr>
<tr>
<td>Pacific Islander</td>
<td>15</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>American Indian</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>37</td>
<td>20</td>
<td>46</td>
</tr>
</tbody>
</table>

**Age**

<table>
<thead>
<tr>
<th>Range</th>
<th>Physical (n=494)</th>
<th>Sexual (n=304)</th>
<th>Emotional (n=599)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>26.01</td>
<td>27.28</td>
<td>25.81</td>
</tr>
</tbody>
</table>

*Note. The total number of participants across all types of abuse (physical, sexual, emotional) exceeds 818 due to some participants experiencing multiple types of abuse. The number in each abuse category includes participants with missing data that were not included in the analyses.*

Participants were given four extra credit points for their contribution to the study. All participants were
treated in accordance with the APA Guidelines for Ethical Treatment of Human Research Participants and the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association, 2002).

Materials

A written informed consent was used to inform all participants about the nature and general purpose of the study, and to obtain their written consent to participate. Participants were given a resource page with contact information for local support services, such as assault and mental healthcare agencies. Although a total of eleven questionnaires were administered in one packet to all participants, the current study only used the following measures:

Demographic Information Questionnaire

This questionnaire is designed to collect information on the participant’s age, gender, marital status, ethnicity, level of education, and yearly gross income.

Childhood Trauma Questionnaire

The CTQ is a 28-item self-report instrument that measures childhood experiences of physical, sexual, and emotional abuse, in addition to physical and emotional neglect. The CTQ is designed for individuals who are at least 12 years old. Items are rated on a Likert-type scale that ranges from 1 (never true) to 5 (Very often true) and includes both positively and negatively worded items. For example, "I got hit so hard by someone in my family that I had to see a doctor or go to the hospital." This scale has good internal consistency ranging from .80 to .97. Specifically, the sexual abuse subscale ranges from .93 to .95, physical abuse ranges from .81 to .86, and emotional abuse ranges from .84 to .89. (Bernstein & Fink, 1998).

Dissociative Experiences Scale


The DES is a 28-item self-report scale that measures the participant’s level of dissociative symptoms. Participants are asked to rate on a scale from 0% (never) to 100% (always), how often certain experiences happen to them. For example, "Some people have the experience of finding themselves in a place and having no idea how they got there. Circle a number to show what percentage of the time this happens to you." The DES has good test-retest
reliability, ranging from .79 to .96, and good internal reliability, ranging from .83 to .95 (Carlson & Putnam, 1993).

The **Penn Inventory for Post-Traumatic Stress Disorder** (Hammarberg, 1992).

The Penn Inventory is a 26-item self-report instrument that measures the severity, frequency, and intensity of PTSD symptoms. Greater scores indicate higher levels of PTSD symptoms. Overall scores range from 0 to 78, with possible scores for each item ranging from 0 to 3. Participants are asked to circle the statement for each item that best describes how they have felt during the past week, including today. For example,

A. I rarely feel jumpy or uptight.

B. I sometimes feel jumpy or uptight.

C. I often feel jumpy or uptight.

D. I feel jumpy or uptight all of the time.

This scale has good internal consistency with an alpha coefficient of .94, and good test-retest reliability with a score of .96 (Hammarberg, 1992).
Procedure

Participants signed up for the study by using the SONA Research Management System at CSUSB. They reported to a specified conference room in the Social and Behavioral Sciences building at CSUSB at the time they signed up for. A verbal account of the informed consent was administered to all participants as a group, along with a written copy for them to indicate their consent. Participants were informed of their choice to not answer any questions they chose, and to leave the study at any time if they became uncomfortable, without losing their extra credit. After obtaining consent from all participants, they were given the packet of questionnaires which took approximately 45 to 60 minutes to complete. After completing the packet, each participant was taken out of the room and debriefed individually. They were asked if they had any questions about the study or whether or not they wanted to discuss anything about it. During this time, they were given a resource packet with various contact numbers for assault, violence, and mental health agencies.
Statistical Analyses

Separate multiple regression and correlational analyses were run for each type of abuse (physical, sexual, emotional) to test relationships between abuse, dissociation, and PTSD. Only participants with abuse scores greater than five were selected, removing those with no abuse experiences from each abuse sample. Three separate regression analyses were run for each abuse type: A model to predict dissociation from abuse, a model to predict PTSD from abuse, and a model to predict PTSD from dissociation.

Additional multiple regression analyses were run to test dissociation as a moderator between physical abuse and PTSD, and between sexual abuse and PTSD. These analyses were based on conditions not being met to test for mediation.

The Sobel Test was used to test dissociation as a mediator between emotional abuse and PTSD. This analysis was based on meeting the conditions to test for mediation.
CHAPTER THREE
RESULTS

Data Screening

Frequencies were run on all variables of interest to check for data entry errors; all located errors were fixed. Scales were created for each subtype of abuse (physical, sexual, emotional) on the CTQ, in addition to dissociation (DES) and PTSD (PENN Inventory). Normality, outliers, and missing data were checked by running frequencies for demographic variables and the scaled scores. Age was positively skewed and kurtotic, even after the deletion of a 68 year-old outlier. All abuse scales (emotional, physical, and sexual) in addition to the dissociation and PTSD scales were positively skewed and kurtotic. This makes sense considering the sample was made up of college students who typically have low abuse, dissociation, and PTSD scores, with a few having higher scores. Four additional outliers were removed from the sample; one with a PTSD score of 58, two with scores of 59, and one with a score of 75. With the removal of these scores, PTSD remained skewed but not kurtotic.
A missing value analysis was run on all types of abuse, dissociation, and PTSD. The only variable with more than 5% missing data was dissociation. This was expected, due to the DES being added to the ongoing study at a later time than the other scales.

Lastly, descriptive statistics were run on the overall sample of 818 participants for all variables of interest (see table 2).

Table 2

<table>
<thead>
<tr>
<th>Descriptive Statistics for the Overall Sample</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Abuse</td>
<td>804</td>
<td>7.51</td>
<td>3.81</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>802</td>
<td>7.66</td>
<td>4.98</td>
</tr>
<tr>
<td>Emotional Abuse</td>
<td>804</td>
<td>9.55</td>
<td>4.99</td>
</tr>
<tr>
<td>Dissociation</td>
<td>500</td>
<td>381.05</td>
<td>342.00</td>
</tr>
<tr>
<td>PTSD</td>
<td>809</td>
<td>20.31</td>
<td>10.14</td>
</tr>
</tbody>
</table>

Physical Abuse Results

Descriptive statistics were run on all variables of interest for the physical abuse sample (see table 3).
Table 3

Descriptive Statistics for the Physical Abuse Sample

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Abuse</td>
<td>495</td>
<td>9.20</td>
<td>3.98</td>
</tr>
<tr>
<td>Dissociation</td>
<td>319</td>
<td>405.81</td>
<td>339.00</td>
</tr>
<tr>
<td>PTSD</td>
<td>495</td>
<td>21.96</td>
<td>10.14</td>
</tr>
</tbody>
</table>

No significant correlation was found between physical abuse and dissociation ($r = .07, p > .05$). Significant positive correlations were found between physical abuse and PTSD ($r = .25, p < .05$) and between dissociation and PTSD ($r = .41, p < .05$; see Table 4).
Table 4

*Correlations for Abuse Subscales, Dissociation, and Posttraumatic Stress Disorder*

<table>
<thead>
<tr>
<th></th>
<th>Abuse</th>
<th>DES</th>
<th>PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Abuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abuse</td>
<td>-</td>
<td>.07</td>
<td>.25*</td>
</tr>
<tr>
<td>DES</td>
<td>-</td>
<td>-</td>
<td>.41*</td>
</tr>
<tr>
<td>PTSD</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Abuse</th>
<th>DES</th>
<th>PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual Abuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abuse</td>
<td>-</td>
<td>.09</td>
<td>.25*</td>
</tr>
<tr>
<td>DES</td>
<td>-</td>
<td>-</td>
<td>.47*</td>
</tr>
<tr>
<td>PTSD</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Abuse</th>
<th>DES</th>
<th>PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Abuse</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abuse</td>
<td>-</td>
<td>.15*</td>
<td>.37*</td>
</tr>
<tr>
<td>DES</td>
<td>-</td>
<td>-</td>
<td>.38*</td>
</tr>
<tr>
<td>PTSD</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. DES represents dissociation.*

*p < .01
Based on multiple regression, physical abuse did not significantly predict dissociation, $R^2 = .01$, $F(1, 317) = 1.46$, $p > .05$. Physical abuse did significantly predict PTSD, $R^2 = .06$, $F(1, 493) = 33.10$, $p < .05$, explaining 6% of the variance. Additionally, dissociation significantly predicted PTSD, $R^2 = .17$, $F(1, 317) = 62.67$, $p < .05$, explaining 17% of the variance (see table 5).

Table 5

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Outcome</th>
<th>$R$</th>
<th>$R^2$</th>
<th>Adj.$R^2$</th>
<th>$F$</th>
<th>$P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPA</td>
<td>DES</td>
<td>.07</td>
<td>.01</td>
<td>.00</td>
<td>1.46</td>
<td>.23</td>
</tr>
<tr>
<td>CPA</td>
<td>PTSD</td>
<td>.25</td>
<td>.06</td>
<td>.06</td>
<td>33.10*</td>
<td>.00</td>
</tr>
<tr>
<td>DES</td>
<td>PTSD</td>
<td>.41</td>
<td>.17</td>
<td>.16</td>
<td>62.67*</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. *$p < .01$

The condition to test for mediation was not present, since only two of the regression analyses were significant. As a result a two-step hierarchical regression analysis was run to test dissociation as a moderator between physical abuse and PTSD. CPA and dissociation were entered into the first step, followed by their interaction in the second step. CPA and dissociation significantly predicted PTSD, $R^2$
= .21, \( F(2, 316) = 42.99, p < .05 \), explaining 21% of the variance. Since the interaction between physical abuse and dissociation did not significantly predict PTSD, \( \Delta R^2 = .00 \), \( F(1, 315) = .27, p > .05 \), dissociation did not moderate the relationship between physical abuse and PTSD (see table 6).

Table 6

Physical Abuse Hierarchical Regression Analysis Testing Moderation of Dissociation

<table>
<thead>
<tr>
<th>Model</th>
<th>Variables Entered</th>
<th>( R )</th>
<th>( R^2 )</th>
<th>Adj.( R^2 )</th>
<th>( \Delta R^2 )</th>
<th>( F )</th>
<th>( P )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CPA</td>
<td>.46</td>
<td>.21</td>
<td>.21</td>
<td>.21</td>
<td>42.99*</td>
<td>.00</td>
</tr>
<tr>
<td>2</td>
<td>CPA x DES</td>
<td>.46</td>
<td>.22</td>
<td>.21</td>
<td>.00</td>
<td>.27</td>
<td>.60</td>
</tr>
</tbody>
</table>

Note. CPA x DES = interaction

*p < .01

Sexual Abuse Results

Descriptive statistics were run on all variables of interest for the sexual abuse sample (see table 7).
Table 7

Descriptive Statistics for the Sexual Abuse Sample

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual Abuse</td>
<td>305</td>
<td>12.12</td>
<td>5.73</td>
</tr>
<tr>
<td>Dissociation</td>
<td>186</td>
<td>393.71</td>
<td>317.33</td>
</tr>
<tr>
<td>PTSD</td>
<td>305</td>
<td>22.32</td>
<td>10.55</td>
</tr>
</tbody>
</table>

Sexual abuse and dissociation were not significantly correlated ($r = .09, p > .05$). Sexual abuse and PTSD were significantly positively correlated ($r = .25, p < .05$) and dissociation and PTSD were significantly positively correlated ($r = .47, p < .05$; see Table 4).

Based on multiple regression, sexual abuse did not significantly predict dissociation, $R^2 = .01, F(1, 184) = 1.50, p > .05$. In contrast, sexual abuse did significantly predict PTSD, $R^2 = .06, F(1, 303) = 20.63, p < .05$, explaining 6% of the variance. PTSD was also significantly predicted by dissociation, $R^2 = .23, F(1, 184) = 53.36, p < .05$, which explained 23% of the variance (see Table 8).
Similarly to physical abuse, conditions were not met to test dissociation as a mediator between sexual abuse and PTSD. Again, a two-step hierarchical regression analysis was run to test moderation. CSA and dissociation were entered into the first step followed by their interaction in the second step. CSA and dissociation significantly predicted PTSD, \( R^2 = .24, F(2, 183) = 29.51, p < .05 \), explaining 24% of the variance. Since the sexual abuse by dissociation interaction was not significant, \( \Delta R^2 = .00 \), \( F(1, 182) = .63, p > .05 \), dissociation did not moderate the relationship between sexual abuse and PTSD (see Table 9).
<table>
<thead>
<tr>
<th>Model</th>
<th>Variables Entered</th>
<th>R</th>
<th>R²</th>
<th>Adj. R²</th>
<th>ΔR²</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CSA</td>
<td>.94</td>
<td>.24</td>
<td>.24</td>
<td>.24</td>
<td>29.51*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>DES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CSA x DES</td>
<td>.50</td>
<td>.25</td>
<td>.23</td>
<td>.00</td>
<td>.63</td>
<td>.43</td>
</tr>
</tbody>
</table>

**Note.** CSA x DES = interaction

*p < .01

**Emotional Abuse Results**

Descriptive statistics were run on all variables of interest for the emotional abuse sample (see table 10).
Table 10

**Descriptive Statistics for the Emotional Abuse Sample**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Abuse</td>
<td>600</td>
<td>11.14</td>
<td>4.83</td>
</tr>
<tr>
<td>Dissociation</td>
<td>373</td>
<td>404.00</td>
<td>332.62</td>
</tr>
<tr>
<td>PTSD</td>
<td>600</td>
<td>21.86</td>
<td>10.23</td>
</tr>
</tbody>
</table>

Significant positive correlations were found between emotional abuse and dissociation ($r = .15$, $p < .05$), between emotional abuse and PTSD ($r = .37$, $p < .05$), and between dissociation and PTSD ($r = .38$, $p < .05$; see Table 4).

Contrary to physical and sexual abuse, all three regression analyses were significant for emotional abuse. Emotional abuse significantly predicted dissociation, $R^2 = .02$, $F(1, 371) = 8.02$, $p < .05$, explaining 2% of the variance. Emotional abuse significantly predicted PTSD, $R^2 = .14$, $F(1, 598) = 94.92$, $p < .05$, explaining 14% of the variance. Lastly, dissociation significantly predicted PTSD, $R^2 = .14$, $F(1, 371) = 62.55$, $p < .05$, explaining 14% of the variance (see Table 11).
Table 11

**Emotional Abuse Regression Analyses**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Outcome</th>
<th>R</th>
<th>$R^2$</th>
<th>Adj.$R^2$</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abuse</td>
<td>DES</td>
<td>.15</td>
<td>.02</td>
<td>.02</td>
<td>8.02*</td>
<td>.01</td>
</tr>
<tr>
<td>Abuse</td>
<td>PTSD</td>
<td>.37</td>
<td>.14</td>
<td>.14</td>
<td>94.92*</td>
<td>.00</td>
</tr>
<tr>
<td>DES</td>
<td>PTSD</td>
<td>.38</td>
<td>.14</td>
<td>.14</td>
<td>62.55*</td>
<td>.00</td>
</tr>
</tbody>
</table>

*Note. *$p < .01$*

Since all three conditions were met to test for mediation, the Sobel Test was used to test dissociation as a mediator between emotional abuse and PTSD. Support was found for partial mediation (Sobel Test statistic = 2.75, $p < .01$), with the prediction of PTSD from emotional abuse dropping from $\beta = .37$ to .31 after removing the variance explained by dissociation (see figure 1).
Figure 1. Partial Mediation Model Showing the Beta Reduction after Controlling for Dissociation.
The purpose of the current study was to provide further support for relationships between childhood abuse, dissociation, and PTSD, and to determine whether or not dissociation influences the relationship between abuse and PTSD. It was first hypothesized that childhood abuse would predict dissociation and PTSD. Emotional abuse predicted both dissociation and PTSD, thus supporting this hypothesis. Only partial support was found in regards to physical and sexual abuse, since both predicted PTSD while both failed to predict dissociation.

The inability to predict dissociation from physical and sexual abuse is counter to most of the relevant literature. However, a few studies similarly did not find an association between abuse and dissociation. For example, Mulder et al. (1998), who also used the DES to measure dissociation, were not able to predict dissociation from sexual abuse, while Kisiel and Lyons (2001) were not able to predict dissociation from physical abuse (using the Adolescent DES). However, since the DES is one of the most commonly used measures of dissociation, it is probably
unrelated to the inability to predict dissociation from physical and sexual abuse. Draijer and Langeland (1999) were able to predict dissociation (DES) from both physical and sexual abuse. Additionally, Mulder et al. predicted physical abuse from the DES, and Kisiel and Lyons predicted sexual abuse from the adolescent DES. The discrepancies regarding these results may be due to the sample used or other methodological differences between studies.

While emotional abuse was the only significant predictor of dissociation, it was also the strongest predictor of PTSD ($\beta = .37$) and explained the most variance ($R^2 = .14$). This finding was supported by Sullivan et al. (2006) who found that only emotional abuse significantly predicted PTSD and had a higher correlation with PTSD than did other types of abuse. It would be interesting to examine why emotionally abused women are likely to dissociate, while those who are sexually or physically abused may be less likely to dissociate. It may be more painful to hear loved ones use cruel words, possibly leading to low self-esteem and other issues that influence one’s ability to strive. Children may learn to block these
words out and mentally remove themselves from the situation as a way to avoid the pain that words cause.

Another interesting question is whether children who experience both emotional abuse and other types of abuse are more likely to have dissociation and PTSD-related problems than those who only experience emotional abuse. It could be possible that the combination of harsh words and physical or sexual harm put children at a higher risk for trauma-related mental health issues. Since multiple abuse experiences were not examined in the current study, these questions could not be answered.

Addressing the second purpose of the study, the role of dissociation was examined by determining if it acted as a mediator or moderator between abuse and PTSD, or whether it related to these variables independently. Dissociation did not mediate or moderate abuse and PTSD for women who were sexually or physically abused. Instead, abuse and dissociation were each related to PTSD independently. Dissociation did partially mediate the association between emotional abuse and PTSD, thus increasing the prediction of PTSD in women who were emotionally abused. Since dissociation only acted as a partial mediator, the presence of PTSD symptoms is not completely dependent upon its
influence. Rather it seems that when dissociation is present, women who experienced emotional abuse are more likely to develop PTSD symptoms. This could be useful for mental healthcare providers in determining which clients are at a higher risk of developing PTSD. Based on these findings, it would be fruitful to reduce the client’s dissociative symptoms in an effort to reduce the risk of future PTSD symptoms.

Overall, emotional abuse appears to be related to both dissociation and PTSD, while CSA and CPA are only related to PTSD. Additionally, dissociation seems to play an important role in predicting who will develop PTSD following emotional abuse. Since these results are only based on a sample of women, it would be interesting to see if similar predictions are found for men. Are men also more prone to developing PTSD after being emotionally abused? If so, does dissociation play a mediating role between emotional abuse and PTSD for men as it does for women? Future research should examine similar questions to see if these results are gender specific or due to other conditions.

While gender differences may be likely, one’s predisposition to dissociate may also influence
relationships between variables in this study. Individual levels of dissociation may depend on the combination of genetic factors and the environment, rather than relying on environmental factors alone. One limitation to the current study was focusing on changes in dissociation levels as a function of environmental triggers, while failing to measure genetic influences as well.

A second potential limitation to this study was excluding participants who reported no experiences of abuse. Even though participants with low, moderate, and high levels of abuse were included, the range of scores was truncated by not including those who reported no experiences of abuse. To address this concern, post-hoc analyses were run with all participants included to see if their presence affected the findings. The only difference was that physical abuse significantly predicted dissociation, explaining 1% of the variance. Since this effect size is so small, significance may be due to the increased sample size. Sexual abuse was still not predictive of dissociation, thus the addition of these scores did not influence this finding.

An additional limitation was basing analyses on a sample of college students. Most of the sample had low
abuse, dissociation, and PTSD scores, which made it more
difficult to analyze questions related to these variables.
Students are often higher functioning than the general
population, which is evidenced by their ability to attend a
university. Despite this observation, the student
population at CSUSB is more representative of the community
than is true for most universities. The campus has a large
percentage of Hispanic students, many of which come from a
lower socioeconomic status than is typically seen in the
families of those who attend college. These characteristics
are representative of the surrounding community as well,
making it easier to generalize these findings to at least
the local community.

College samples may increase our knowledge of certain
issues in the community, but future research should look at
clinical samples to gain a better understanding of
relationships between abuse and more extreme levels of
dissociation and PTSD. The current study may have failed to
make certain predictions as a result of its focus on higher
functioning individuals. Dissociation in particular may be
related to severe cases of abuse and/or PTSD more commonly
seen in clinical populations. A greater understanding of
abused populations or those with dissociative and/or PTSD
symptoms could lead to better intervention strategies for individuals experiencing problems related to these issues.

In conclusion, the results of this study clear up some confusion in the literature relating to what role dissociation plays in the association between abuse and PTSD. However, why it only mediates this relationship for emotional abuse is still unclear and needs to be further examined. This may be due to the inability to predict dissociation from either physical abuse or sexual abuse. Dissociation is unlikely to link abuse and PTSD if it lacks a relationship with abuse. Research needs to further examine why dissociation may relate to certain types of abuse and not others.

The results of this study make it clear that emotional abuse should not be a neglected topic in the literature. We often think of physical and sexual abuse as more harmful types of maltreatment, but emotional abuse also poses a threat to children. This study may help clinicians understand the importance of addressing emotional abuse as a way to decrease mental health problems in our communities. One way to target this problem is to help parents understand how their words negatively affect their children. Emotional abuse can be very traumatic for kids.
because it affects how they feel about themselves and how they feel others perceive them, leading to larger issues as they grow up. Parents need to understand how much words can hurt so they can avoid damaging their kids. A greater awareness of this issue would benefit society substantially.
REFERENCES


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