SEQUELAE OF CHILD ABUSE: THE ROLE OF SOCIAL AND PERSONAL RESOURCES

A dissertation submitted
to Kent State University in partial fulfillment of the requirements for the degree Doctor of Philosophy

by
Ana-Maria Vranceanu

August, 2007
Dissertation written by
Ana-Maria Vranceanu
B.S., Simmons College, 1997
M.A., Kent State University, 2003
Ph.D., Kent State University, 2007

Approved by

Stevan Hobfoll, Chair, Doctoral Dissertation Committee
Janis Crowther, Members, Doctoral Dissertation Committee
Greer Glazer
Robert Johnson
Maria Zaragoza

Janis Crowther, Chair, Department of Psychology
John Stalvey, Dean, College of Arts and Sciences
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF FIGURES</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>vi</td>
</tr>
<tr>
<td>CHAPTER</td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. METHOD</td>
<td>14</td>
</tr>
<tr>
<td>III. RESULTS</td>
<td>22</td>
</tr>
<tr>
<td>IV. DISCUSSION</td>
<td>38</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>47</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td></td>
</tr>
<tr>
<td>No intervention Consent Form</td>
<td>59</td>
</tr>
<tr>
<td>APPENDIX B</td>
<td></td>
</tr>
<tr>
<td>Standard Care Intervention Consent Form</td>
<td>62</td>
</tr>
<tr>
<td>APPENDIX C</td>
<td></td>
</tr>
<tr>
<td>Measures</td>
<td>66</td>
</tr>
</tbody>
</table>
LIST OF FIGURES

1. HYPOTHESISED MEDIATION MODEL…………………………          13
2. MODEL FOR THE OVERALL SAMPLE…………………………..           26
3. MODEL FOR AFRICAN-AMERICANS…………………………..           28
4. MODEL FOR EUROPEAN-AMERICANS………………………….           29
5. ALTERNATIVE MODEL FOR THE OVERALL SAMPLE………….           31
6. ALTERNATIVE MODEL FOR AFRICAN-AMERICANS……………           32
7. ALTERNATIVE MODEL FOR EUROPEAN-AMERICANS……….           33
8. MODEL FOR DIAGNOSES………………………………………..           35
9. ALTERNATIVE MODEL FOR DIAGNOSES…………………….           36
LIST OF TABLES

1. DEMOGRAPHICS............................................................. 15
2. SCALE DESCRIPTORS.................................................... 23
3. ZERO-ORDER CORRELATIONS........................................ 25
ACKNOWLEDGEMENTS

I dedicate this research to the wonderful women who agreed to participate in this project and continued to strive despite trauma, economical and racial hardship, and to my dad, Petru Vranceanu, who taught me that perseverance, hard work and dedication are key to reaching one’s dreams. I am thankful to my advisor, Dr. Hobfoll, for always believing that I can do great, even in times when I did not, Dr. Johnson, for his patience in teaching me the fine tunes of Lisrel, and to my dissertation committee members for their helpful comments and insights. Mostly, I want to thank my husband, Christopher Sofio, for his never ending support in my academic pursuits and everything I do, and for his talent of showing me the humor in all aspects of my concerns.
INTRODUCTION

The negative effects of childhood abuse (CA) on psychological functioning in adulthood have been largely documented. Depression and posttraumatic stress disorder (PTSD) frequently have been depicted as common indicators of adult psychological distress that result from CA (e.g., Browne & Finkelhor, 1986; Paolucci, Genuis & Violato, 2001; Roosa et al., 1998). Recently there has been an increase in theoretical and empirical work trying to illuminate the mechanisms involved in the etiology of these disorders, rather than merely documenting that the CA – psychological distress relationship exists. This focus on transfer mechanisms should, in turn, contribute to better psychological treatments for CA survivors. This study will concentrate on investigating mechanisms by which CA leads to distress in women often decades after its occurrence. Specifically, I will test a model proposing that social and psychological resources will mediate the association between CA and depression and PTSD in adulthood.

Several theories depict social and psychological resources as key interrelated intervening factors in the manner in which CA survivors function psychologically into adulthood, and how they cope with stressful life events (e.g., Browne & Finkelhor, 1986, Hammen, Henry & Daley, 2000, Schumm, Vranceanu & Hobfoll, in press). Few studies, however, have empirically tested the role of key social and psychological resources as transfer mechanisms linking CA with later PTSD and depression in adulthood.
Furthermore, no prior research has tested simultaneously the role of psychological and social resources in adult CA survivors. Hence, the purpose of this study is to integrate psychological and social resources into a single model, in an effort to understand the etiological processes in the mental health of CA survivors. Utilizing data from a large sample, I examine cross-sectionally the relationship between CA, adult psychological resources, adult social resources and adult depression and PTSD severity and diagnoses in women.

*Child Abuse and Vulnerability to Depression and PTSD in Adulthood*

PTSD is a critical psychological indicator of distress for abuse survivors. Women who report CA have higher rates and severity of PTSD compared to their nonabused counterparts (Briere & Runtz, 1993; Rodriguez, Ryan, Vande Kemp & Foy, 1997; Widom, 1999). Research suggests that between 1/3 to 1/2 of women who experienced CA demonstrate lifetime prevalence of PTSD (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Resnick, Kilpatrick, Dansky, Saunders, & Best, 1993). Furthermore, Rodriguez, Ryan, Van de Kemp, and Foy (1997) reported that among treatment seeking women with histories of CA, 87% met criteria for a PTSD diagnoses compared to only 19% among women with no such history. In addition, Widom (1999) found that children with legally documented CA were 1.75 times more likely to develop PTSD at 20 year follow-up, and women with documented abuse reported a higher number of PTSD symptoms than women without documented CA. Similarly, Hien and Bukszpan (1999) and Vranceanu, Hobfoll and Johnson (under review) found that in a sample of low-
income women, 25% met criteria for diagnosable PTSD. Although most adult survivors do not meet full criteria for PTSD in adulthood, more than 80% appear to develop “some” PTSD symptoms, such as hypervigilence, intrusive thoughts and flashbacks (Briere, 1994), which are nonetheless distressful and warrant clinical attention.

In addition to PTSD, prior research suggests that women with histories of CA have an increased risk of developing depressed mood in adulthood (e.g., Bohn, 2003; Briere & Elliot, 1994; Briere & Runtz, 1987; 1988; Browne & Finkelhor, 1986; Lipovsky & Kilpatrick, 1992; Turner & Butler, 2002). Further, research on child maltreatment has identified a significant, positive relationship between severity of abuse and depression severity (Doyle Peters, 1988; Russel, 1986). Not surprisingly, victimized children report more depressive symptomatology than their nonabused counterparts (Beitchman et al., 1992; Cerezo & Frias, 1994; Lipovsky, Saunders, & Murphy, 1989; Rew, 1989). Furthermore, a representative study reported that in a sample of 56 maltreated children 18% met DSM criteria for major depressive disorder (MDD) and 25% met criteria for dysthymia (Kaufman, 1991). These childhood sequelae seem to have long-term effects on survivor’s emotionality that continue into adulthood, CA survivors having 4 times greater lifetime risk for developing depression compared to their nonabused counterparts (Briere & Elliot, 1994).

PTSD and depression are frequently concomitant sequelae of child abuse (Carlson & Rosser-Hogan, 1991; Kroll et al., 1989; Mollica, Whyshak, de Marneffe, Khuon, & Lovelle, 1987; Perkonigg & Wittchen, 1999). Studies using both clinical and community samples have shown that between 1/3 and 2/3 of those diagnosed with PTSD will at some
point also be diagnosed with major depression (e.g., Blanchard, Buckley, Hickling, & Taylor, 1998; Helzer, Robins, & McEvoy, 1987; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). Although most individuals seem to develop both disorders others may endorse only symptoms consistent with either PTSD or depression. In other cases individuals may meet diagnostic criteria for one of these disorders (e.g., PTSD) while still endorsing subclinical levels of depression which nonetheless need therapeutical attention (Vranceanu, Hobfoll, & Johnson, under review). Consistent with this evidence, it is important to include both disorders in etiological models of adjustment of CA survivors, and study not only their comorbidity, but also mechanisms of development. Further, it is important to assess both symptom severity and diagnoses in order to understand the relative importance of resources in regard to diagnoses versus only symptom presence in adult survivors.

CA and Deterioration of Social Resources

Social resources such as social support and ability to get along with others have been depicted as vital factors for stress resistance and good mental health functioning (e.g., Seligman & Csinkzentmihalyi, 2000; Dohrenwend, 2002). Social resources buffer the negative effects of stress, and allow individuals to adequately integrate within the environment (e.g., Dohrenwend, 2000, Hobfoll, 1989;2000). Social resources appears to be particularly important for people with lower income (Vitaliano et al., 2001), who’s life is burdened by a plethora of stress.
Adult survivors of CA often lack social resources, and, consequently, have poor adult mental functioning. Indeed, a large body of research shows that adult survivors of CA have smaller supportive networks (e.g., Gibson & Hathorne, 1996; Harmer, Sanderson, & Mertin, 1999), perceive their relationships as less supportive (Davis, Petretic-Jackson & Ting, 2001; Stroud, 1999), and report more conflictive interpersonal relationships (Browne & Finkelhor, 1986; Hammen, Henry & Daley, 2000; Hammen, 2003) when compared to their nonabused counterparts. Additionally, adult survivors are often in relationships that are exploitative and victimizing (Flemming et. al., 1999) and have high divorce rates (Felitti, 1991; Flemming et al., 1991), further attesting to their impaired support systems.

How might CA deteriorate social resources? First, CA may cause distortions in children’s cognitions regarding themselves and others, which can become internalized and thus lead to unhealthy adult relationships (e.g., Briere, Berliner, Bulkey, Jenny, & Reid). Second, CA survivors have less actual support in adulthood because their potential family support is limited, as their parents and siblings may have been abuser or themselves harmed by the abuse experience (Browne & Finkelhor, 1996), and thus ineffectual as supporters (Elliot & Carnes, 2001). Third, often CA survivors grew up in dysfunctional family environments, and may have poor scripts for healthy adult relationships (Browne & Finkelhor, 1996). Fourth, CA survivors often develop avoidant or intrusive coping styles and thus may also choose to cut themselves off from others (Teegan, 1999). Finally, CA may impair ability to read social cues, speak up for oneself and find people who will not exploit or abuse others (Kendall-Tackett, 2002).
Mechanisms linking CA to adult depression and PTSD: Social resources as a mediator. Social resources represent one pathway through which CA can lead to depression and PTSD in adulthood. As previously noted, CA increases susceptibility to corrosion of social resources. This, in turn, may increase vulnerability to depression and PTSD. Indeed, a large body of research relates low social support (Brown & Harris, 1987; Cutrona & Troutman, 1986; Dohrenwent, 2000) and high social conflict (Hammen, 1999; Hammen, 2003) to depression. Depressed individuals have smaller and less integrated supportive networks than nondepressed individuals, and perceive others as less available to them (Pattison, DeFranco, Wood, Frazier, & Crowder, 1975; Dohrenwend, 2000). Furthermore, perception of support is inversely related to depression (Pearlin, Menaghan, Lieberman, & Mullan, 1981). In addition, Wethington and Kessler (1986) found that the belief that one can turn to family and friends (supportive network) for emotional or practical assistance might reduce depression over time.

Recent research supports the connection between social resources and PTSD in adulthood. Studies in veteran samples and victims of natural disasters indicate that low levels of social support after the traumatic event are related to PTSD symptoms (Gold et al., 2000). Further, recent research asserts that individuals newly diagnosed with PTSD endorse lower levels of social support when compared to controls (Kotler, Iancu, Efroi, & Amir, 2001; Widows, Jacobsen, & Fields, 2000). Brewin (2000) confirmed these assertions in a recent metaanalyses of studies assessing populations exposed to trauma in
adulthood, where he found that lack of social support was a major risk factor in the
development of PTSD. Furthermore in a recently published metaanalysis, Ozer, Best,
Lipsey and Weiss (2003) found that the strongest inverse relationship between PTSD and
perceived support was in studies with the most time elapsed between trauma and PTSD
assessment. As such, it appears that the effects of social support may be cumulative over
time, making it important to examine the impact of social resource deterioration on
outcomes such as depression and PTSD in CA survivors.

Although theoretical and empirical evidence points toward a link between CA,
deterioration of social resources (decreased support and increased conflict), and risk for
PTSD and depression, to my knowledge no prior studies have accounted for these
relationships within a comprehensive model. Prior work tested the individual role of
social support in the association among various traumas and PTSD only (Brewin, 2000;
Ozer, 2002), neglecting social conflict and the potential comorbidity with depression. In
order to improve understanding and treatment for CA survivors who lack social
resources, studies must further examine the interrelation among CA, social resources and
depression and PTSD.

CA and Deterioration of Psychological Resources

In addition to social resources, psychological resources such as self-efficacy
(personal mastery) and self-esteem are essential for mental health functioning (e.g.,
Hobfoll, 2002; Turner, Lloyd, & Roszell, 1999). Such resources allow individuals to
function effectively in the environment and are employed in coping with stressful life
events (Lefcourt, 1992). Furthermore, psychological resources allow individuals to effectively avoid or prevent some stressful events and circumstances, and, potentially, experience and perceive life events as less problematic (Turner, Lloyd, & Roszell, 1999).

CA survivors often lack psychological resources. It is well established that CA survivors have lower self-esteem (Briere & Brown, 1988; Brown & Finkelhor, 1986; Jumper, 1995; Sedney & Brooks, 1984; Yama et al., 1993) and self-efficacy (Beck & Weushaar, 1989; Gagnon & Hersen, 2000; Seligman, 1975) when compared to their nonabused counterparts. How might CA lead to deterioration of psychological resources? First, CA may lead to development of dysfunctional internal working models acting as a lens through which survivors see the world as being dangerous and overestimate danger and adversity (Briere & Elliot, 1994), leading to an underestimation of their own sense of self-efficacy and self-worth in dealing with both real and perceived danger. Second, CA may facilitate development of self-deprecating and self-blaming schemas (Beck & Weushaar, 1989), which can internalize and become part of adult functioning. Third, CA may instill a sense of pervasive helplessness (Seligman, 1975), hopelessness, powerlessness and danger (Teegen, 1999; Silk, Lee, Hill, & Lohr, 1995), which can lead to a generalized perception of inefficaciousness (Gagnon & Hersen, 2000).

**Mechanisms linking CA to adult depression and PTSD: Psychological resources as a mediator.** A second pathway through which CA can lead to adult depression and PTSD is via deterioration of psychological resources. As already mentioned, CA often depletes survivors’ psychological resources. This, in turn, can lead to psychological
distress, as low psychological resources increase risk of depression (Bagley & Young, 1990; Gauthier, Stollock, Mess & Arnoff, 1996; Rosenberg, 1985). Possessing a prosperous reservoir of psychological resources is related to decreased vulnerability to the deleterious effects of stress (Bandura, Adams, Hardy, & Howells, 1980) and has been found to reduce risk for depression (e.g., Perlin & Schooler, 1978; Pearlin, Liberman, Menaghan, & Mullan, 1981; Turner & Noh, 1983). For example, high levels of self-efficacy have been shown to figure significantly in accounting for depressive symptoms when previous symptoms were controlled (Turner & Noh, 1988) suggesting the vital, potentially causal role of self-efficacy in the development of depression. In addition to self-efficacy, self-esteem is an important resource in overall adjustment and coping with life events, the inverse relationship between depression and self-esteem being one of the most established findings (e.g., Wylie, 1979; Rosenberg, 1985). Furthermore, self-esteem has been found to limit depression in women in the face of stress (Hobfoll & Leiberman, 1987), by preserving the ability to see beyond a particular demanding situation and hence resist translating stress into general, negative self-evaluation (Cohen & Edwards, 1989).

Psychological resources have been found to be important in trauma victims, accounting significantly in the development of PTSD. Cross-sectional and prospective studies of victims of war (King et al., 1999; Solomon, Benhenishty, & Mikulincer, 1991; Solomon, Weisenberg, Schwarzwald, & Mikulincer, 1988) and natural disasters (Dougall, Hyman, Hayward, McFeeley & Baum, 2001) provide evidence that lack of psychological resources is related to PTSD. Additionally, in a sample of survivors of the Oklahoma City bombing, Beninght and his colleagues, 2000, found that psychological
resources such as self-efficacy explained an additional 28% variance in PTSD after controlling for income, threat of death, social support and lost resources.

Although the evidence presented above suggests a link between CA, psychological resources and susceptibility to depression and PTSD in adulthood, no prior research has examined these relationships comprehensively. Prior work tested the role of either self-esteem (e.g., Mullen, 1993; Ritter, Hobfoll, Lavin, Cameron, & Hulsizer, 2000; Turner & Butler, 2003) or self-efficacy (Gaulthier, Stollack, Messe, & Arnoff, 1996) in the association between CA and depression or PTSD. To my knowledge no prior work included both self-esteem and self-efficacy, pivotal resources, in the association between CA and PTSD and depression within a comprehensive model. Considering the importance of psychological resources in adjustment it appears particularly important to further study the role of psychological resources in the association between CA and adult PTSD.

Interrelation of Psychological and Social Resources

Previous research assessing the role of resources in the association between CA and depression and PTSD has failed to comprehensively assess and integrate psychological and social resources. Such integration is extremely important, as there is theoretical and empirical evidence suggesting a reciprocal causation in the association between psychological and social resources (Dougall, Hyman, Hayward, McFeeley, & Baum, 2001; Hobfoll, 1989; Hobfoll, Nadler, & Leiberman, 1988). Having strong psychological resources allows individuals to create and sustain close ties and indirectly
manage the challenges and demands of stress. In turn, successfully mobilizing social resources and dealing with stress reinforces a strong sense of self-efficacy and increased self-esteem. This bidirectional association between social and psychological resources is explained by Hobfoll’s COR theory (Hobfoll, 1998) which proposes the concept of “resource caravans” via which the aggregate of resources tend to travel together over time and act as a bridge to integrate individuals within a community. The interrelation of psychological and social resources in promoting adjustment to stress and overall good mental health functioning was demonstrated empirically by Holohan and Moss (Holohan & Moss, 1991; Holohan et al., 1999) in a series of longitudinal studies. Their findings suggest not only the causal contribution of resources to mental health functioning, but also the fact that possessing resources generates additional resources in both clinical (Holohan, Moss, Holohan & Cronkite, 2000) and community samples (Holohan et al., 1999).

This interrelation between resources appears particularly important in situations involving loss of resources from one category (e.g. loss of a supportive spouse). In such instances the successful mobilization of other resources (e.g. strong self-efficacy) allows individuals to better cope with the loss and adjust to this new situation. Conversely, the effect of such loss can be augmented in the context of weak psychological resources, leading to psychological distress.

Inner-city women in particular are at increased risk for psychological distress, due to their persistent lack of resources and the acute resource losses that occur in the wake of chronically diminished economic conditions (Eckenrode, 1984; Ennis, Hobfoll, &
Schroder, 2000). Specifically, chronic lack of employment opportunities, decline in wages, high rates of pregnancy, multiple children, single-parent households, translate in diminished educational opportunities, employment potential, access to health insurance and other work benefits (McLoyd, 1990; Turner, Wheaton, & Lloyd, 1995). These multiple chronic and acute negative economic and social conditions call upon the mobilization of social and psychological resources. When such resources are depleted due to CA, the risk of psychological distress is heightened, increasing risk for depression and PTSD.

The Current Study:

The proposed study was designed to address limitations of previous endeavors, by investigating comprehensively, within one model, the role of social and psychological resources in the association between CA and adult depression and PTSD (see Figure 1). It is hypothesized that CA will relate to adult depression and PTSD both directly and indirectly, via depleted social and psychological resources. Further, it is hypothesized that social and psychological resources will reciprocally interrelate and impact the association between CA and depression and PTSD. Consistently, I propose that CA will be associated with decreased adult psychological resources not only directly, but also indirectly via depleted social resources. Second, I propose that CA will lead to depleted social resources directly and indirectly, via decreased psychological resources. Third, psychological and social resources are proposed to directly relate to PTSD and depression. Finally, social and psychological resources are proposed to mediate the
association between CA and adult depression and PTSD, explaining, at least partially, this association.

*Figure 1.* Model depicting the hypothesized relationships among CA, social resources, psychological resources, depression and PTSD.
METHOD

Participants

Participants were 682 women\(^1\) recruited from two clinics (hospital base and free-standing community base) serving lower income, inner city women in a medium-sized Midwestern city. This particular sample is highly appropriate for testing the proposed model, given their high rates of trauma and experience of stressful life events (Eckenrode, 1984; Ennis, Hobfoll, & Schroder, 2000). Table 1 presents descriptive statistics for the demographic variables of interest.

\(^1\) Seven outliers were identified and deleted. 29 women self-identified as Asian-Americans, Asians or “Others”. Data from these participants was not included in the primary analyses in order to protect against type 1 error, leading to a final sample of 646 women.
Table 1  
Demographics ($N = 646$)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>European American – 65.9%</td>
</tr>
<tr>
<td></td>
<td>African American – 34.1%</td>
</tr>
<tr>
<td>Age in years</td>
<td>$M = 21.75$  $SD = 3.89$</td>
</tr>
<tr>
<td>Highest grade completed</td>
<td>Eighth grade or less – 1.5%</td>
</tr>
<tr>
<td></td>
<td>Some high school – 36.2%</td>
</tr>
<tr>
<td></td>
<td>High school graduate – 31.9%</td>
</tr>
<tr>
<td></td>
<td>Some college – 25.4%</td>
</tr>
<tr>
<td></td>
<td>College graduate – 4.2%</td>
</tr>
<tr>
<td>Yearly household income</td>
<td>$&lt; $10,000 – 54.3%</td>
</tr>
<tr>
<td></td>
<td>$10,000-15,000 – 18.7%</td>
</tr>
<tr>
<td></td>
<td>$15,000-25,000 – 14.1%</td>
</tr>
<tr>
<td></td>
<td>$&gt; $25,000 – 12.9%</td>
</tr>
<tr>
<td>Employment</td>
<td>Yes - 42.7%</td>
</tr>
<tr>
<td></td>
<td>No – 57.3%</td>
</tr>
</tbody>
</table>

Procedure

Women were invited to participate individually by female interviewers, who explained the nature of the study and offered $25 for completing the interview. The women were assured that their medical care was in no way contingent upon their participation, and that all the information they would provide will remain confidential.
All participants were informed from the onset that they would be randomly assigned to either health promotion intervention or no intervention. Approximately 80% women approached agreed to participate. Upon informal agreement, participants were escorted in a private room where they were asked questions to ensure that they meet inclusionary study criteria. Participants meeting the study criteria were given detailed information about the study and were asked to sign the informed consent form.

Interviews lasted approximately 45-50 minutes and participants were paid $25 upon completion of the study questionnaire. All interviews were conducted prior to any intervention related procedures. Interviewers were culturally diverse female psychology students, who underwent extensive training in multicultural sensitivity via role-plays and discussions. Interviewers were trained to listen non-judgmentally, avoid arguing, roll with resistance, be encouraging, empathic and non-directive, while following a written interview script. Previous research (e.g., Miller & Rollnick, 1991) found that interviews conducted in this manner are particularly effective with this population and encourage responding. Interviewers were provided weekly supervision to discuss interview issues and maintain standardized procedures.

**Measures**

*Demographic Information.* A demographic questionnaire provided information on participant’s age, ethnicity, employment status, income, and education level (see Table 1)
Childhood Abuse. Women’s abuse experiences prior to the age of 16 were assessed with an abbreviated version of the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1994). The CTQ has two 5-item, continuous scales assessing CSA and CPA. Items are answered on a 5-point Likert scale from 0 (“never true”) to 4 (“always true”). Prior research showed that both subscales have excellent reliability and validity (Bernstein et al., 1994). A total abuse score reflecting combined CA experiences was computed by summing the scores on the two subscales. In this study, internal consistency for the combined abuse score was good (α = .87).

Depression. Women’s reports of depression were assessed with the Center for Epidemiologic Study of Depression Scale (CES-D; Radloff, 1977). This is a 20-item Likert scale designed to measure depressive symptomatology in the general population. Items are answered on a 4-point Likert scale from 0 (“rarely or none of the time”) to 3 (“most of the time”). The scale was found to have very high internal consistency and adequate test-retest reliability in previous investigations (Radloff, 1977). In this study internal consistency for the scale was excellent (α = .89). Scores higher than 18 were used to give conservative estimates of clinical depression diagnosis, consistent with previous research (Klinkman, Coyne & Gallo, 1997) which established that the initial cut-off score of 16 proposed by Radloff, 1977 gives overestimates of clinical depressive disorders.
Women’s PTSD symptoms were assessed using the PTSD Symptom Scale-Interview (PSS-I; Foa, 1993). The scale has 17 items examining re-experiencing, avoidance, and arousal symptoms consistent with the DSM-IVTR PTSD diagnosis. Items were answered on a 4-point Likert scale, from 0 (“not at all”) to 3 (“very much”). This scale has been found to have strong reliability and validity (Norris & Riad, 1997) and was designed for work with victims of sexual and physical/emotional abuse. Internal consistency for this particular sample was excellent ($\alpha = .95$). PTSD diagnoses were estimated using an algorithm following the DSM-IVTR criteria.

Women’s perceptions of own availability of social support was assessed with the Social Provision Scale (Russell & Cutrona, 1984). The scale has 10 items answered on a 4-point Likert scale from 0 (“strongly disagree”) to 3 (“strongly agree”). This scale was found to have good psychometric properties in prior investigations (Russell & Cutrona, 1987) and in this study internal consistency good ($\alpha = .83$).

Women’s reports of social conflict were assessed with a modified version of the Social Conflict Tactic Scale (Russell & Cutrona, 1987). The scale has 5 items assessing reports of conflictual social interactions in relationships with others, on a 5-point Likert scale from 0 (“never”) to 4 (“very often”). Total scores were reversed coded so that high scores represent low social conflict. The scale was found to have good reliability and validity in previous investigations. In this study internal consistency was good ($\alpha = .82$).
Psychological Resources. Women’s self-esteem was measured with the Rosenberg Self-Esteem Scale (Rosenberg, 1986). The 10-item scale is a measure of global self-esteem reflecting self-acceptance, self-respect and positive self-evaluation. Items are answered on a 4-point Likert scale from 0 (“strongly agree”) to 3 (“strongly disagree”). This measure has been found to have good psychometric properties in prior studies (e.g., Ensel & Lin, 1991, Rosenberg, 1981) and internal consistency for this sample was excellent ($\alpha = .89$).

Women’s self-efficacy was assessed with the Generalized Self-Efficacy Scale (Jerusalem & Schwarzer, 1981). This scale was designed to assess optimistic self-beliefs to cope with a variety of difficult life demands. In contrast to other scales that were designed to assess optimism, this one explicitly refers to personal agency, i.e., the belief that one's actions are responsible for successful outcomes (Jerusalem & Schwarzer, 1992). The scale has 10-items answered on a 7-point scale from 0 (“not at all true”) to 6 (“exactly true). This scale has been found to be a reliable and valid indicator of self-worth in prior investigations (Schwarzer, 1993; 1994). Internal consistency for this sample was good ($\alpha = .81$).

Analytic Strategy:
Primary analyses were conducted via structural equation modeling (SEM) with Lisrel 8.5 (Joreskog & Sorbom, 2003). The use of SEM in this study had several
advantages. First, SEM requires maximum likelihood estimates (ML), which makes estimates based on maximizing the probability that the observed covariances are drawn from a population assumed to be the same as that reflected in the coefficient estimates, by seeking parameters that best reproduce the estimated population variance-covariance matrix. Second, using SEM I was able to conduct analyses simultaneously rather than step-wise, as a series of OLS multiple regressions, which makes more sense both theoretically and statistically, SEM being “the only analysis that allows for complete and simultaneous tests of all relationships” (Tabachnick & Fidel, 1996, p.71). Indeed, SEM allowed testing the relationships among the variables in light that they act in the presence of other variables as a unit. Third, for latent variables with multiple measures, such as social and psychological resources, SEM does not assume that those variables are measured without errors, or that the residuals between the variables and between their indicators are zero (Podhazur, 1982) and allowed estimation of theoretically sound latent variables.

To investigate the proposed model, a two-step process analysis was followed. First, the bivariate correlation of observed variables was examined in order to establish the statistical significance of the bivariate relations independent of other variables. This first step in mediation tested 3 of the 4 criteria required for establishing mediation (Baron & Kenny, 1986; Kenny, Kashy, & Bolger, 1998). Specifically, I tested whether CA was related to depression and PTSD, CA was related to social resources (social support and social conflict) and psychological resources (self-efficacy and self-esteem), social and psychological resources individual observed variables were related to PTSD and
depression. Second, latent variable structural equation modeling was used to examine the proposed mediation model, and to test the 4th criteria required for mediation, which is aimed at establishing that all or some of the effects of CA onto Depression and PTSD occur via social and psychological resources. To accomplish this task, the full model was compared to a reduced model in which the paths from the root variable (CA) to the dependent variables (depression and PTSD) were deleted. The difference in the chi-squares associated with these models is a test of the significance of the indirect effect of CA onto the dependent variables (PTSD and depression) via the mediators (social and psychological resources; Holmbeck, 1999). A significant chi-square test indicates that the deleted paths are important in the model and suggests partial mediation. A non-significant chi-square test suggests complete mediation. Significance of individual mediation was evaluated with the Goodman I version (MacKinnon, Warsi, & Dwyer, 1995) of the Sobel equation (Baron & Kenny, 1986), which tests the null hypothesis that the mediated effect equals zero in the population. A significant Goodman I Sobel test provides evidence for mediation.
RESULTS

Levels of Child Abuse, Depression and PTSD

Reports of childhood abuse were common among study participants, with 67% of women having experienced CA at least “rarely”\(^2\). According to PSS-I estimates 22% women met criteria for PTSD. The majority of women obtained scores lower than 28 on the PSS-I, suggesting minimally severe PTSD. According to CES-D estimates, 48.7% women obtained scores suggestive of a clinical depressive diagnoses. Means and standard deviations for all study variables are depicted in Table 2

\(^2\) CA severity scores \(\geq 5\) were used to conservatively estimate rates of CA.
Table 2

Scale Descriptives (N = 646)

<table>
<thead>
<tr>
<th>Scale</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>10.54</td>
<td>8.29</td>
</tr>
<tr>
<td>Depression severity</td>
<td>19.43</td>
<td>11.25</td>
</tr>
<tr>
<td>PTSD severity</td>
<td>6.73</td>
<td>10.62</td>
</tr>
<tr>
<td>Social Support</td>
<td>14.95</td>
<td>4.17</td>
</tr>
<tr>
<td>Social Conflict (reverse coded)</td>
<td>8.01</td>
<td>5.23</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>53.22</td>
<td>9.14</td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>21.66</td>
<td>4.80</td>
</tr>
</tbody>
</table>

Note. CA = child abuse. Missing cases are excluded listwise.

Preliminary Analyses

Preliminary analyses revealed significant relationships among several demographic and primary study variables. Significant differences in self-efficacy, F (1, 644) = 6.207, p = .01, self-esteem, F (1, 644) = 3.666, p = .05, and social support, F(1, 644 = 23.387, p = .00) were found based on ethnicity, with African-American women reporting higher self-esteem and self-efficacy and lower social support compared to European-Americans. Significant differences in depression, F (1, 644) = 8.199, p = .00, PTSD, F (1, 644) = 4.719, p = .03, child abuse, F (1, 644) = 3.129, p = .07, self-efficacy, F (1, 644) = 12.887, p = .00, self-esteem F (1, 644) = 23.354, p = .00 and social support, F (1, 644) = 4.719, p =.03 were also found based on employment status, with
unemployed women reporting higher scores on depression, PTSD, and child abuse, and lower self-efficacy, self-esteem and social support compared to their employed counterparts. Chi-squared analyses revealed that unemployed women and African-American women had more PTSD diagnoses compared to employed women, $\chi^2 (1) = 68.00$, $p = .00$ and European-American women, $\chi^2 (1) = 90.00$, $p = .00$, respectively.

Demographic differences were also found based on ethnicity and employment status. Specifically, African-American women were less educated $F (1, 644) = 5.674$, $p = .01$ and had lower levels incomes, $F (1, 644) = 30.651$, $p = .00$ compared to European-American women. Additionally, employed women were significantly older, $F = (1, 644) = 7.42$, $p = .01$, and had higher levels of education $F (1, 644) = 97.322$, $p = .000$ and income than unemployed women. Consistent with these results ethnicity, employment status, income, education level and age were further included as covariates in the hypothesized model.

Next, zero-order correlations were conducted in order to assess the independent relationships among study variables and to test preliminary criteria for mediation (see Table 3).
### Table 3

Zero-Order Correlations for Continuous Variables (N = 646)

<table>
<thead>
<tr>
<th>Variable</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>.28***</td>
<td>.01</td>
<td>.09*</td>
<td>-.01</td>
<td>-.04</td>
<td>-.08*</td>
<td>.08*</td>
<td>.06</td>
<td>.06</td>
</tr>
<tr>
<td>2. Education</td>
<td>_</td>
<td>.29**</td>
<td>-.02</td>
<td>.15**</td>
<td>.16**</td>
<td>.15**</td>
<td>.17**</td>
<td>-.14**</td>
<td>-.11**</td>
</tr>
<tr>
<td>3. Income</td>
<td>_</td>
<td>-.04</td>
<td>.09*</td>
<td>.09*</td>
<td>.17**</td>
<td>.14**</td>
<td>-.15**</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td>4. Child Abuse</td>
<td>_</td>
<td>-.15**</td>
<td>-.22**</td>
<td>-.31***</td>
<td>-.25***</td>
<td>.30***</td>
<td>.45***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Self-Efficacy</td>
<td>_</td>
<td>.60***</td>
<td>.39***</td>
<td>.29***</td>
<td>-.47***</td>
<td>-.20**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Self-Esteem</td>
<td>_</td>
<td>.45**</td>
<td>.34***</td>
<td>-.58***</td>
<td>-.31***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Social Support</td>
<td>_</td>
<td>.40***</td>
<td>-.50***</td>
<td>-.319***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Social Conflict</td>
<td>_</td>
<td>-.48***</td>
<td>-.29***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Depression</td>
<td>_</td>
<td>.39***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. PTSD</td>
<td>_</td>
<td>_</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Social Conflict reversed coded  *p < .05. ** p < .01. *** p < .001
**Mediational Analyses**

*Testing hypothesis of social and psychological resources as mediators between CA, Depression and PTSD severity.* Given the significance of the bivariate correlations among the model components, latent variable structural model analyses were then used to test the proposed mediational models. Confirmatory factor analyses and structural equation modeling (SEM) with Lisrel 8.54 (Joreskog & Sorbom, 2003) were conducted to assess the adequacy of measurement of latent factors and to test the study hypotheses. This allowed testing simultaneously a priori specified hypotheses about the underlying structure of the measurement model and the structural controlling of measurement error (Bollen, 1989).

The SEM confirmed the factor structure of the latent variables. The measurement model consisted of the constructs of social resources (two indicators), and psychological resources (two indicators). Fit indices indicated that the model fit the data very well\(^3\) (see Figure 2).

The structural model was constructed according to theory, and consisted of five exogenous observed demographic variables\(^4\) (income, ethnicity, age, education and employment), one endogenous observed variable (CA), two endogenous mediating latent variables (social resources and psychological resources), and two dependent observed variables (PTSD and depression). To set the scale of the two latent factors,

---

\(^3\) The full-model was compared to a more parsimonious one in which the nonsignificant paths were constrained. Fit indices did not indicate improvement in the model fit.

\(^4\) Demographic variables are not depicted in the figures.
the starting values of self-esteem to psychological resources and social support to social resources were fixed at 1. All estimated parameters were hypothesized a priori. The relationships between the two dependent variables and between the two latent mediating variables were specified as nonrecursive, consistent with theory. The completely standardized structural equation solutions, factor loadings, and $R^2$ values are depicted in Figure 2.

![Diagram](image)

$R^2 = .30$

$R^2 = .63$

$R^2 = .31$

$R^2 = .18$

**Figure 2.** Completely standardized solutions for the hypothesized mediation model for the overall sample (N = 646). *p < .05  **p < .01  ***p < .001, 2-tailed tests. $\chi^2 (17) = 36.71, p = .004$ RMSEA = .04 NFI = .99 GFI = .99

---

3 $R^2$ values were calculated for the full model and thus account for the interrelation among variables. The significant $\chi^2$ is not a valid indicator of model fit for the full model as it is highly affected by the large sample size.
As depicted, CA was directly predictive of decrease in social and psychological resources. CA was also predictive of increase in PTSD, but not depression. Psychological resources were not significantly predictive of either depression or PTSD. Social resources were significantly predictive of both depression and PTSD. Social resources were significantly interrelated to psychological resources. However, the relationship between depression and PTSD significant in the bivariate correlation matrix did not reach the significance level within the model. Given the significant and nonsignificant direct effects of social and psychological resources respectively onto both depression and PTSD, the association between depression and PTSD is completely dependent on social resources.

To test for mediation, the proposed model was compared to a reduced model, in which the two paths between CA and depression and PTSD were deleted. The chi-square difference test was significant, suggesting that the CA to depression and CA to PTSD paths are important in the overall model. This suggested partial rather than complete mediation effects.

Significance of partial mediation was next estimated using the Goodman I Sobel test. The Goodman I Sobel test suggested that social resources acted as a significant mediator in the association between CA and depression (t = 3.77, p = .00), and CA and PTSD (t = 2.71, p = .00). Contrary, psychological resources did not act as a significant mediator between CA and either depression or PTSD (p > .05).
Due to statistical differences on primary study variables based on ethnicity and employment status, I further conducted group analyses in order to test for potential differences in the mechanism for the development of depression and PTSD between African-Americans (N = 426) and European-Americans (N = 220). Results of these models are depicted in Figures 3 and 4.

Figure 3. Completely standardized solutions for the hypothesized mediation model for African-Americans (N = 426). * p < .05 ** p < .01 *** p < .001, 2-tailed tests.

$\chi^2 (15) = 36.09$, p = .002 RMSEA = .05 NFI = .98 GFI = .99.
Figure 4. Completely standardized solutions for the hypothesized mediation model for European-Americans (N = 220). * p < .05 ** p < .01 *** p < .001, 2-tailed tests. \( \chi^2 (15) = 19.61, p = .19 \) RMSEA = .03 NFI = .98 GFI = .99.

Mediation was tested following the procedure delineated for the full model. In all cases the chi-square difference tests suggested that the paths between the root and dependent variables should be included in the model. Significance of mediation was tested with the Goodman I Sobel test.
As depicted several differences were found between the African-American and European-American models. Social resources acted as a significant mediator in the association between CA and depression for both African-American and European-American samples (t = 2.98, p = .00, and t = 1.95, p = .05), and in the association between CA and PTSD only for African-Americans (t = 2.11, p = .03), although the effect was close to the statistical level for European-Americans (t = 1.67, p = .09). Psychological resources did not act as a mediator between CA and depression for African-Americans, but the effect approached the significance level for European-Americans (t = 1.75, p = .07). Finally, psychological resources did not act as a mediator between CA and PTSD for neither sample.

Overall results suggest that CA undermines social and psychological resources, which, in turn impact depression and PTSD either directly, or indirectly, through their interrelation. However, the mechanism of development of depression and PTSD appear to be different based on ethnicity.

Considering the cross-sectional nature of the data I next examined alternative theoretically sound reversed models for the full sample, and separately for African-American and European-American samples. This was done in order to assess whether depression and PTSD could act as equivocal mediators between CA and psychological and social resources. In these models depression and PTSD were entered as endogenous mediating variables, and social and psychological resources were treated as dependent variables. Mediation was tested similarly to the hypothesized models. The estimated
models are depicted in Figures 5, 6 and 7. The fit of the reverse and hypothesized models were identical, suggesting that both models fit the data in a similar manner.

Figure 5. Completely standardized solutions for the alternative model for the overall sample (N = 646). Reversed pathways are depicted in bold. * p < .05 ** p < .01 *** p < .001, 2-tailed tests. $\chi^2 (17) = 36.71$, p = .004 RMSEA = .04 NFI = .99 GFI = .99.
Figure 6. Completely standardized solutions for the alternative model for African-Americans (N = 426). Reverse pathways are depicted in bold. * p < .05 ** p < .01 *** p < .001, 2-tailed tests. $\chi^2$ (15) = 36.09, p = .001 RMSEA = .05 NFI = .98 GFI = .99.
**Figure 7.** Completely standardized solutions for the alternative model for European-Americans (N = 220). Reversed pathways are depicted in bold.

* p < .05 ** p < .01 *** p < .001, 2-tailed tests. \( \chi^2 (15) = 19.61, p = .19 \)

RMSEA = .03 NFI = .98 GFI = .98.
Overall, depression and PTSD were found as significant mediators, although some differences were noted among the 3 models. For the overall model, depression was found to significantly mediate the association between CA and psychological resources (t = 6.67, p = .00) and social resources (t = 6.71, p = .00). PTSD was found to significantly mediate the association between CA and social resources (t = 2.50, p = .01), but not psychological resources (p>.05).

The same pattern of results was found for the African-American sample. Depression significantly mediated the association between CA and psychological resources (t = 6.04, p = .00) and social resources (t = 6.37, p = .00), and PTSD was found to significantly mediate only the association between CA and social resources (t = 2.40, p = .01). For the European-American sample, depression was also found to be a significant mediator in the association between CA and social (t = 2.53, p = .01) and psychological resources (t = 2.62, p = .00). However, for European-Americans PTSD was not a significant mediator for either social or psychological resources.

The significance of mediation for the alternative reversed models suggests that CA can directly impact depression and PTSD, which, in turn, undermine social and psychological resources, with these mechanisms being different based on ethnicity.

*Testing hypothesis of social and psychological resources as mediators between CA, Depression and PTSD diagnoses.*
Next, I examined whether the pattern of results observed for severity maintains for diagnosis of depression and PTSD, by conducting identical analyses. Results of the hypothesized and alternative models are depicted in Figures 8 and 9.

\[
R^2 = .32
\]

\[
R^2 = .43
\]

\[
R^2 = .18
\]

\[
\chi^2(17) = 19.51, p = .30 \text{ RMSEA} = .01 \text{ NFI} = .99 \text{ GFI} = .99.
\]

**Figure 8.** Completely standardized solutions for the hypothesized mediation model for diagnoses for the overall sample (N = 646).* p < .05 ** p < .01 *** p < .001, 2-tailed tests.
Figure 9. Completely standardized solutions for the alternative mediation model for diagnoses for the overall sample (N = 646). Reversed pathways are depicted in bold. * p < .05 ** p < .01 *** p < .001, 2-tailed tests. $\chi^2 (17) = 19.51$ p = .30 RMSEA = .01 NFI = .99 GFI = .99.
As depicted, the pattern of results mirrored the findings observed for the severity models. The Goodman I Sobel test indicated that social resources mediated the association between CA and both depression (t = 3.51, p = .00) and PTSD (t = 2.25, p = .02) diagnoses. Psychological resources did not directly mediate the association between CA and neither depression nor PTSD diagnoses. In the alternative models, depression diagnosis significantly mediate the association between CA and both social (t = 4.89, p = .00) and psychological (t = 4.78, p = .00) resources. PTSD diagnosis directly mediated only the association between CA and social resources (t = 2.61, p = .00).
DISCUSSION

The proposed model whereby social and psychological resources are depicted as mediating the relationship between CA and PTSD and depression was partially supported. Social resources partially mediated the impact of CA on both depression and PTSD severity and diagnoses. However, psychological resources did not act as an immediate mediator of the impact of CA on either depression or PTSD severity or diagnoses. Nonetheless, given the significant interrelation between the two categories of resources, indirect mediation effects could emerge. Specifically, psychological resources may act as indirect mediators of CA onto depression and PTSD through social resources. Likewise, besides acting as a direct mediator, social resources could also operate as an indirect mediator, via their interrelation to psychological resources. In other words, CA undermines both social and psychological resources, which, in turn, increase risk for Depression and PTSD severity and diagnoses directly (as do social resources) or indirectly (as do both social and psychological resources). CA also had a significant direct effect on PTSD severity and diagnosis, but not on depression severity or diagnosis.

These findings highlight the importance of resources in women abused as children. This study supports the hypothesis that abuse leads to resource deficits in adulthood. As such, victims of abuse may become unable to either develop or sustain healthy psychological and social resources to employ in times of need or in daily functioning. That psychological resources did not directly impact depression and PTSD
suggests the centrality of social resources in the mechanism of development of PTSD and depression. This means that only interdependent with social resources can psychological resources lead to depression and PTSD.

Although previous research did not test concomitantly the mediating role of social and psychological resources onto depression and PTSD in survivors of CA, my findings are consistent with studies that tested different aspects of my model (Kaniasty & Norris, 1993; Norris & Kaniasty, 1996; Runtz & Schallow, 1997). However, to my knowledge, this is the first study that tested comprehensively, and found evidence for the mediating effect of social and psychological resources in the association between CA and depression and PTSD severity and diagnosis.

Differences in the hypothesized model were found based on ethnicity. Consistent with the analyses for the entire sample, social resources exerted an overriding role in the association between CA and depression and PTSD. However, the effect was stronger for African-Americans. Additionally, although psychological resources maintained as non-direct mediators of the effects of CA onto PTSD for both samples, for European-Americans there was a trend toward direct mediation of CA onto depression via psychological resources, which likely would have become significant if tested with a larger sample, or if evaluated with a one-tailed test.

That social resources acted as paramount for African-Americans, while psychological resources appeared more influential for European-Americans is not surprising if viewed in light of differential culture norms. Specifically, African-American
culture tends to be more communal, and European-American culture more individualistic (Plant & Sachs-Ericsson, 2004). While collectivistic cultures view social support systems as paramount and conceptualize the person as interconnected within relationships with friends and family, individualistic cultures view the self, independence and individual goal attainment as principal to others such as friends, family and community (Plant, 2004; Plant & Sachs-Ericsson, 2004). Hence, if African-American women have depleted social resources, due to CA and are unable to develop such resources due to psychological resource deficits, they are susceptible to depression and PTSD. The fact that in addition to social resources psychological resources themselves act as a direct mediator of CA onto depression for European-Americans signifies that this emphasis on self is detrimental in that increases women’s vulnerability to depression, by opening up an additional direct mediation path of CA via psychological resources. This differential mediational pattern should be further investigated in studies with larger samples of European-American. If confirmed, these results would suggest that interventions aimed at treating or preventing depression and PTSD should focus on increasing social resources for African-Americans and should address both social and psychological resources for European-Americans.

The alternative model depicting depression and PTSD as potential mediators in the association between CA and social and psychological resources was also supported. Depression significantly mediated the association between CA and both psychological and social resources. However, PTSD directly mediated only the association between CA
and social, not psychological resources. Nonetheless, PTSD may act as an indirect mediator in the association between CA and psychological resources, via its interrelation to depression.

That the post hoc reversed models fit the data as well as the hypothesized models is of great interest, as previous research has began to explore in various contexts the bi-directional relationship between resources and distress. Theoretical and empirical work by Beach Fincham and Beach (1999), Hammen (1991) and Joiner & Coyne, (1999) suggests a reciprocal association between social functioning and psychological distress (e.g., depression and anxiety) in that psychological distress impairs social functioning and it is reinforced by it. Furthermore, Rosenberg and his colleagues (Rosenberg, Schroder, & Schoenback, 2004) demonstrated reciprocal effects among resources and distress specifically for psychological resources (i.e., self-esteem).

In the context of trauma, Benotch (2000) demonstrated a bi-directional association between social resources and PTSD. In a longitudinal study of Gulf War veterans he found that social resources at Time 1 predicted PTSD at Time 2. In addition, he found that PTSD symptomatology increased over the year and was subsequently related to a decrease in social resources. Similarly, King, King, Foy, Keane, and Fairbank (1999) demonstrated the relationship between the caravan of resources (psychological and social) across individual’s lifespan (i.e., before, during, and after the traumatic event) in a large sample of Vietnam veterans; he found that resources at each time point (prewar,
war zone, and postwar) were predictive of PTSD and were further deteriorate by psychological distress.

This apparent bi-directional relationship among psychological distress and resources has never been tested prior in women with histories of CA. Based on the results of this study and incorporating previous theoretical and empirical works, it appears that abuse places survivors at a disadvantage by both deteriorating their resources and leading to PTSD and depression. Furthermore, it appears that abused women are caught in a vicious cycle, whereby their resource deficits reinforce their depression and PTSD, which, in turn, further depletes their already low resource pool. As such, psychological distress and resources can be depicted as not only mutually reinforcing but also cyclically related over time. This assertion is consistent with COR theory (Hobfoll, 1988, 1989) which coined the concept of loss spirals whereby resource losses have residual consequences and long-lasting impact. As such, this psychological and social resource loss cycles initiated by the abuse not only cause psychological distress, but also make women more vulnerable to future loss of resources. This means that over time, women’s resource reservoir gets used up, depression and PTSD symptoms increase in intensity and the associations among these resource deficits and psychological distress gain in strength. This is a public health concern, and suggests that interventions should be aimed at stopping the vicious cycle on which women are caught sooner rather than later, to prevent erosion on resources and increase in psychological distress.
Differences in the alternative models were found based on ethnicity. For African-Americans results were identical with the overall model. However, for European-Americans only depression and not PTSD was found as a significant direct mediator between CA and social and psychological resources. For European-Americans it appears that social resources lead to PTSD, while for African-American the social resource-PTSD relationship is bi-directional.

**Strengths and Weaknesses**

The current study has several strengths. First, I tested the cumulative effect of abusive experiences rather than the individual impact of either child sexual or physical/emotional abuse. This is particularly important not only because of the demonstrated comorbidity of childhood abusive experiences (Higgins, 2001, Higgins & McCabe, 1998), but also because the experience of multiple forms of abuse has increased detrimental effects (Higgins, 2001). By assessing both child sexual and physical/emotional abuse this study provides a more comprehensive understanding of PTSD and depression. Second, the present study expands on previous research by including social and psychological resources within a single model and tested simultaneously their interplay with depression and PTSD in survivors of CA. To my knowledge this is the first study that assessed this interrelation comprehensively in women with histories of CA. Third, this study employed a large sample of inner-city,
ethnically diverse, economically disadvantaged women, which have been given little empirical attention in the CA literature despite evidence showing that poverty is a menace for CA (Jones & McCurdy, 1992). Last, by using SEM I was able to test the relationship among variables simultaneously making the results of this investigation more ecologically valid.

Despite its strengths, the current report also has limitations. First, the retrospective account of CA experiences is a concern, as participants may deny, distort or forget painful experiences when responding to questionnaires (Belsky, 1993; Paulhus, 1991). Second, this study engaged a cross-sectional design that does not permit clear assertions of causality. Further, both PTSD and depression diagnosis were estimates, rather than actual diagnosis.

Implications for Interventions

Results of this study have important implications for interventions. The high rates of abuse, PTSD and depression obtained in this study make it imperative for mental health practitioners to carefully assess for experiences of child abuse, PTSD and depression in inner-city women. Additionally, mental health practitioners should be aware of the resource loss cycles and vulnerability to depression and PTSD that stem from experiences of child abuse. The bidirectional relationship between resource deficiencies and psychological distress suggests that one way to reduce PTSD and depression is to raise level of social and psychological resources and one way to raise
resources is to decrease depression and PTSD. At present, more is known about how to reduce depression and PTSD (via physical, pharmacological, and cognitive-behavioral strategies) than how to raise social and psychological resources. At the same time, the rate of relapse into PTSD and depression is high in survivors of CA, potentially because most interventions do not directly address social and psychological resources within treatments, and focus solely on alleviating the acute distress. As such, the loss cycle ignited by the abuse is never stopped. Consistently, interventions for abuse survivors should concomitantly address the distress and build coping resources in order to end the resources loss cycle onto which women involuntarily embarked due to the abuse. Specifically, treatments aimed at alleviating PTSD and depression should not only focus on emotionally and cognitively processing of events associated with the abuse experiences, but also teach specific skills aimed directly at increasing social and psychological resources. Skills aimed at cultivating healthy relationships, negotiating conflict, increasing self-image and belief in own ability to succeed and effectively make changes in one’s life should be necessary ingredients in interventions for CA survivors. Additionally, interventionist should be aware of the cultural implications of the abuse and address and account for ethnicity in planning interventions.

From a community-based perspective results of this study point to increasing efforts to combat poverty as it is shown to not only promote CA, but also to further reduce the already depleted resources available to women with histories of abuse.

_Future Research_
This bi-directional relationship between resources and psychological distress, albeit conceptually syntonic and interesting, leaves many unanswered questions: Which variable has the more powerful effect on the other, what is the actual direction of the effects, which paths are more powerful? To what extent each variable affects the other? What is the order of events in the distress-resource deterioration relationship? Future studies should aim at answering these questions via prospective investigations measuring both distress and resources proximally and long after the abuse occurred ideally using the same sample. Such studies in conjunction to more sophisticated means of analyses (i.e., reciprocal effects analysis) could provide important insights into untangling the complex trauma-resources/distress relationships. My efforts represent only a humble step in the path of understanding these complex mechanisms.
REFERENCES


We want to do research on helping women reduce their risk of getting sick and helping women stay in good health.

This study has been approved by Kent State University and Akron City Medical Center. We need volunteers to take part and would like you to consider participating. This is entirely up to you and you will not be penalized in any way for not volunteering. The study requires about one and a half hours of your time over six months.

You have the right to complete information about this study. If you participate, you can stop at any time without penalty of any sort. Information about the way the University or Hospital handles research can be gotten from Dr. Walter Adams at Kent State University (phone: 672-2070) or Lynn Smith at Akron City Hospital (phone: 375-4045).

You will be asked to fill out some questionnaires on 2 occasions, each will take about 40 minutes to finish. The first questionnaire will be completed with the aid of one of our staff as soon as we can schedule it with you. The second interview will be conducted in about six months. Some of the questions pertain to sexual behavior and history of sexual and physical abuse you may have experienced. We will also request a urine
sample from you at the time of the follow-up. If you test positive for an STD we will let you and the clinic where we met you know so that you can be properly treated.

Should you participate, you may experience discomfort or embarrassment from being asked to reveal (confidentially) some intimate things about yourself and your sexual behavior. If you feel too much discomfort, please let us know and we can refer you to appropriate community services for help, if you so choose. We have received a federal Certificate of Confidentiality; this allows us to refuse to reveal any information we receive from you, even to a court order. It helps us protect your privacy. We will keep any information you provide us confidential to the extent allowed by law.

If you participate, you will help us learn better ways of helping women like you stay healthy. For filling out questionnaires you will receive $25 for the first questionnaire and $25 for the second questionnaire.

I will answer any questions you may have about the study. You may also call Dr. Stevan Hobfoll (672-2137) at any time regarding questions that you might have.

I have had the study explained to me in detail and understand what my participation will be and that I may withdraw at any time.

______________________________ ______________________________
Participant's Signature           Today's date
If you are a minor (below age 18 and not legally emancipated), please sign above and have your parent or guardian sign below.

I have read the above consent form and agree to my child's participation. I understand that some questions pertain to sexual and physical abuse and that such abuse, if considered current, must be reported by law.

____________________________  ______________________
Parent or Guardian's Signature  Today's date

____________________________  ______________________
Witness  Today's date

____________________________  ______________________
Investigator's Signature  Today's date
We want to do research on helping women reduce their risk of getting sick and helping women stay in good health.

This study has been approved by Kent State University and Akron City Medical Center. We need volunteers to take part and would like you to consider participating. This is entirely up to you and you will not be penalized in any way for not volunteering. The study requires about 15 hours of your time over the next 16 months.

You have the right to complete information about this study. If you participate, you can stop at any time without penalty of any sort. Information about the way the University or Hospital handles research can be gotten from Dr. Rathindra N. Bose at Kent State University (phone: 672-2851) or Lynn Smith at Akron City Hospital (phone: 375-4045).

You will be asked to fill out some questionnaires on 4 occasions, each will take about 40 minutes to finish. We will also arrange for you to be medically tested for sexually transmitted diseases by giving a urine sample. If you test positive on this test for an STD we will let you and the clinic where you are being treated know so that you may
receive proper medical care. Most (but not all) women will be asked to participate in six 90-minute sessions in which you will receive information about how to stay healthy, especially focusing on safer-sex. Other women will be asked to participate in a briefer, 2-session program on the same topic.

The videotapes that you may be asked to view show actors arguing over health and safer-sex issues. Sometimes these arguments are loud and the man in the videotapes may be physically threatening. After viewing these tapes, you may be in one of the groups that practices how to address this kind of conflict together with other women like yourself and a group leader. No men will be in the groups so that women have a safe environment in which to practice conflict resolution skills.

Women will also receive a condom credit card which will allow them to obtain condoms from local pharmacies. These cards have code numbers and participant’s photo. The pharmacies will report to us how many condoms are obtained using only these code numbers.

Following learning these techniques, participants will be asked to talk to one of our staff and show us how you would respond if you were confronted with certain situations. This conversation will be (audio) tape recorded. For this study, we will also need access to your medical files.

Should you participate, you may experience discomfort or embarrassment from being asked to reveal (confidentially) some intimate things about yourself and your sexual behavior or you may find practicing conflict resolution techniques to be stressful. If you feel too much discomfort, please let us know and we can refer you to appropriate community services for help, if you so choose. If you participate, you will help us learn better ways of helping women like you stay healthy. For filling out questionnaires you
will receive $25 for the first questionnaire, $25 for the second and third questionnaire, and $30 for completing final follow-up questionnaires. You will also receive $25 for each health training session you attend.

What you tell us and what we learn from your medical testing and records will be kept confidential (within the limits of the law) in the following manner: You will be asked not to place your name on the questionnaires and we will use a special code number that only we will know. All information will be kept in locked files. We have received a federal Certificate of Confidentiality which allows us to refuse to provide individual information to authorities even if so ordered.

I will answer any questions you may have about the study. You may also call Dr. Stevan Hobfoll (672-2137) at any time regarding questions that you might have.

By volunteering you are saying that you are interested in participating no matter which group you are assigned.

I have had the study explained to me in detail and understand what my participation will be and that I may withdraw at any time.

______________________________ ______________________________
Participant's Signature           Today's date

If you are a minor (below age 18 and not legally emancipated), please sign above and have your parent or guardian sign below.

I have read the above consent form and agree to my child's participation:
I understand that one interview may be audiotaped and that I may choose to hear the audiotape and/or to not be audiotaped, but still remain in the study.
APPENDIX C

MEASURES

Demographics

1. How old are you?

2. What is the highest grade in school you completed?
   a. Eighth grade or less
   b. Some high school
   c. High school graduate or equivalent
   d. College graduate

3. Are you employed?
   a. Yes
   b. No

4. What is the estimated yearly income of your household?
   a. Less than $10,000
   b. $10,000 to $15,000
   c. $15,000 to $25,000
   d. More than $25,000

5. What do you consider your ethnic background?
   a. White
b. Black/African American

c. Asian

d. Native Americans

e. Others

_Childhood Abuse_

Please answer the following referring to the time when you were 15 years old or younger:

1. When I was fifteen years old or younger, people in my family hit me so hard that it left me with bruises or marks.
   a. Never true   b. Rarely true   c. Sometimes true   d. Often true   e. Very often true

2. When I was 15 years old or younger, the punishments I received seemed cruel.
   a. Never true   b. Rarely true   c. Sometimes true   d. Often true   e. Very often true

3. When I was 15 years old or younger, I was punished with a belt, a board, a cord, or some other hard object.
   a. Never true   b. Rarely true   c. Sometimes true   d. Often true   e. Very often true

4. When I was 15 years old or younger, someone in my family yelled and screamed at me.
   a. Never true   b. Rarely true   c. Sometimes true   d. Often true   e. Very often true
5. When I was 15 years old or younger, people in my family said hurtful or insulting things to me.

a. Never true  b. Rarely true  c. Sometimes true  d. Often true  e. Very often true

6. When I was 15 years old or younger, I believe that I was sexually abused.

a. Never true  b. Rarely true  c. Sometimes true  d. Often true  e. Very often true

7. When I was 15 years old or younger, someone molested me.

a. Never true  b. Rarely true  c. Sometimes true  d. Often true  e. Very often true

8. When I was 15 years old or younger, someone tried to make me do sexual things or watch sexual things.

a. Never true  b. Rarely true  c. Sometimes true  d. Often true  e. Very often true

9. When I was 15 years old or younger, someone tried to touch me in a sexual way or tried to make me touch them.

a. Never true  b. Rarely true  c. Sometimes true  d. Often true  e. Very often true

10. When I was 15 years old or younger, someone threatened to hurt me or tell lies about me unless I did something sexual with them.
Abuse-Related PTSD

Have you ever had a period where you felt very troubled or upset because of abuse or assault that you’ve experienced? A. Yes B. No

If yes, please describe your thoughts or feelings you had in the last two weeks.

1. Having upsetting thoughts or images about abuse or assault come into your head when you didn’t want them to.
   a. Not at all    b. A little    c. Moderately    d. Very much

2. Having bad dreams or nightmares about being abused or assaulted.
   a. Not at all    b. A little    c. Moderately    d. Very much

3. Reliving the abuse or assault, acting or feeling as if it were happening again.
   a. Not at all    b. A little    c. Moderately    d. Very much

4. Feeling very emotionally upset when you were reminded of being abused or assaulted (for example, feeling scared, angry, sad, guilty, etc.).
   a. Not at all    b. A little    c. Moderately    d. Very much
5. Experiencing physical reactions when you were reminded of being abused or assaulted (for example, breaking out in a sweat or your heart beating fast).
   a. Not at all  b. A little  c. Moderately  d. Very much

6. Trying not to think about, talk about, or have feelings about being abused or assaulted.
   a. Not at all  b. A little  c. Moderately  d. Very much

7. Trying to avoid activities, people, or places that remind you of being abused or assaulted.
   a. Not at all  b. A little  c. Moderately  d. Very much

8. Not being able to remember an important part of the abuse or assault.
   a. Not at all  b. A little  c. Moderately  d. Very much

9. Having much less interest or participating much less often in important activities.
   a. Not at all  b. A little  c. Moderately  d. Very much

10. Feeling distant or cut off from people around you.
    a. Not at all  b. A little  c. Moderately  d. Very much

11. Feeling emotionally numb (for example, being unable to cry or unable to have loving feelings).
    a. Not at all  b. A little  c. Moderately  d. Very much
12. Feeling as if future plans or hopes will not come true (for example, will have no career, marriage, children, or a long life).
   a. Not at all   b. A little   c. Moderately   d. Very much

13. Having trouble falling or staying asleep.
   a. Not at all   b. A little   c. Moderately   d. Very much

14. Feeling irritable or having fits of anger.
   a. Not at all   b. A little   c. Moderately   d. Very much

15. Having trouble concentrating (for example, drifting in and out of conversations, losing track of a story on television, or forgetting what you read).
   a. Not at all   b. A little   c. Moderately   d. Very much

16. Being overalert (for example, checking to see who is around you, being uncomfortable with your back to a door, etc.).
   a. Not at all   b. A little   c. Moderately   d. Very much

17. Being jumpy or easily startled.
   a. Not at all   b. A little   c. Moderately   d. Very much

_Depression_

Please answer these questions referring to the past two weeks.
1. I was bothered by things that usually don’t bother me.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

2. I did not feel like eating; my appetite was poor.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

3. I felt that I could not shake off the blues even with help from family and friends.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

4. I felt that I was just as good as other people.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

5. I had trouble keeping my mind on what I was doing.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

6. I felt depressed.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time
7. I felt that everything I did was an effort.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

8. I felt hopeful about the future.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

9. I thought my life had been a failure.
   a. Rarely or None of the Time
   b. Some or Little of the Time
   c. Occasionally or a Moderate amount of Time
   d. Most or All of the Time

10. I felt fearful.
    a. Rarely or None of the Time
    b. Some or Little of the Time
    c. Occasionally or a Moderate amount of Time
    d. Most or All of the Time

11. My sleep was restless.
    a. Rarely or None of the Time
    b. Some or Little of the Time
    c. Occasionally or a Moderate amount of Time
    d. Most or All of the Time

12. I was happy.
    a. Rarely or None of the Time
    b. Some or Little of the Time
    c. Occasionally or a Moderate amount of Time
    d. Most or All of the Time

13. I talked less than usual.
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. I felt lonely.</td>
<td>a. Rarely or None of the Time</td>
</tr>
<tr>
<td>15. People were unfriendly.</td>
<td>a. Rarely or None of the Time</td>
</tr>
<tr>
<td>16. I enjoyed life.</td>
<td>a. Rarely or None of the Time</td>
</tr>
<tr>
<td>17. I had crying spells.</td>
<td>a. Rarely or None of the Time</td>
</tr>
<tr>
<td>18. I felt sad.</td>
<td>a. Rarely or None of the Time</td>
</tr>
</tbody>
</table>
19. I felt that people disliked me.
   a. Rarely or None of the Time  b. Some or Little of the Time  
   c. Occasionally or a Moderate amount of Time  d. Most or All of the Time

20. I could not get going.
   a. Rarely or None of the Time  b. Some or Little of the Time  
   c. Occasionally or a Moderate amount of Time  d. Most or All of the Time

_Perceived Social Support_

Please answer the following questions referring to your current relationships with friends and family:

1. Can you depend on others to help you, if you really need it?
   a. No  b. Sometimes  c. Yes  d. Not sure

2. Do you feel you could not turn to others for guidance in time of stress?
   a. No  b. Sometimes  c. Yes  d. Not sure

3. Are there others who enjoy the same social activities you do?
   a. No  b. Sometimes  c. Yes  d. Not sure

4. Do you feel others do not respect your skills and abilities?
   a. No  b. Sometimes  c. Yes  d. Not sure
5. If something went wrong, do you feel others would not come to help you?
   a. No       b. Sometimes       c. Yes       d. Not sure

6. Do your relationships with others provide you with a sense of emotional security?
   a. No       b. Sometimes       c. Yes       d. Not sure

7. Do you feel your abilities and skills are recognized by others?
   a. No       b. Sometimes       c. Yes       d. Not sure

8. Do you feel others do not share your interests and concerns?
   a. No       b. Sometimes       c. Yes       d. Not sure

9. Is there a person you could turn to for advice if you were having problems?
   a. No       b. Sometimes       c. Yes       d. Not sure

10. Do you feel you lack emotional closeness with others?
    a. No       b. Sometimes       c. Yes       d. Not sure

*Perceived Social Conflict*

In the past month, has each of the following occurred to you in relationships with others who are close to you?

1. Serious disagreements about important things to you.
<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Arguments with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Problems with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Been angry or upset with others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Had too many demands made on you by others.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Perceived Self-Efficacy**

Please answer the following questions as they apply to you.

1. I can always manage to solve difficult problems if I try hard enough.
   
   Not at all true  
   Exactly true
2. If someone opposes me, I can find the means and ways to get what I want.

   Not at all true
   1 2 3 4 5 6 7
   Exactly true
   7

3. It is difficult for me to stick to my aims and accomplish my goals

   Not at all true
   1 2 3 4 5 6 7
   Exactly true
   7

4. I am confident I could deal effectively with unforeseen events

   Not at all true
   1 2 3 4 5 6 7
   Exactly true
   7

5. Thanks to my resourcefulness I know how to handle unforeseen situations.

   Not at all true
   1 2 3 4 5 6 7
   Exactly true
   7

6. I can solve most problems if I invest necessary efforts

   Not at all true
   1 2 3 4 5 6 7
   Exactly true
   7

7. I can remain calm when facing difficulties because I can rely on my coping abilities.

   Not at all true
   Exactly true
8. When I am confronted with a problem, I often can’t find a solution.

Not at all true 1 2 3 4 5 6 7

Exactly true

9. If I am in trouble, I can usually think of a solution.

Not at all true 1 2 3 4 5 6 7

Exactly true

10. I often can’t handle problems that come my way.

Not at all true 1 2 3 4 5 6 7

Exactly true

Perceived Self-Esteem

Please choose the best answer as it applies to you.

1. I feel that I am a person of worth, at least on equal plane with others.

a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

2. I feel that I have a number of good qualities.

a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

3. All in all, I am inclined to feel I am a failure.

5. I am able to do things as well as most people.
   a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

6. I feel that I do not have much to be proud of.
   a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

7. I take a positive attitude toward myself.
   a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

8. On the whole, I am satisfied with myself.
   a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

9. I wish I could have more respect for myself.
   a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

10. I certainly feel useless at times.
    a. Strongly agree  b. Agree  c. Disagree  d. Strongly disagree

11. At times, I think I am no good at all.
<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Strongly agree</td>
<td>b</td>
<td>Agree</td>
</tr>
</tbody>
</table>