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THE RELATION OF PARENTAL DEPRESSION TO POSTTRAUMATIC STRESS IN BOSNIAN YOUTHS: THE MEDIATING ROLE OF FILIAL RESPONSIBILITY

by

BRIAN ISAKSON

Under the direction of Gregory Jurkovic

ABSTRACT

This study examined the role of filial responsibility as a mediator between parental depression and posttraumatic stress symptomatology (PTSS) in Bosnian youths. The sample consisted of 145 6th-8th grade boys and girls and their parents. Unfairness and caregiving scales were combined in an interaction term to test the hypothesis. Parental depression significantly predicted parental report of adolescent PTSS but the filial responsibility variables did not significantly mediate the relationship between parental depression and PTSS. A post-hoc analysis examined the role of filial responsibility mediating the relationship between parental education level and PTSS. The interaction terms did not significantly mediate the relationship but the unfairness variable significantly mediated the relationship between parental education level and adolescent report of PTSS.

INDEX WORDS: Posttraumatic stress disorder, Trauma, Filial responsibility, Parental depression

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by

BRIAN ISAKSON

A Thesis Presented in Partial Fulfillment of Requirements for the degree of

Master of Arts

in the College of Arts and Sciences

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by

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CHAPTER 1

Introduction

The war in Bosnia (1992-1995) was very harmful to families. Muslims in Bosnia were victims of warfare as well as ethnic cleansing. Families faced sniper fire and mortar fire, and witnessed family members killed or sexually abused. Snipers often deliberately targeted children. Families were often forced from their homes and made to live in refugee camps where men were killed and women were raped. About 200,000 people were killed during the war, 15,000 of which were children (Raymond & Raymond, 2000). Serbian nationalists particularly targeted the capital city of Sarajevo. Sarajevo was under siege for 1,000 days. People fled from villages to the city, which was intended to be a safe haven from the fighting, but they experienced mortar and sniper fire constantly. Life after the war was very difficult for Bosnians. The economy was destroyed; many men had been killed or were missing, and many families were unable to return to their homes. They were unable to receive quality medical care and social welfare. Many people still faced discrimination and were mistrustful of people of other nationalities. There was corruption in the political and financial systems (Friedman, 2004). Because of all these experiences, those who survived the war were highly traumatized (Dahl, Mutapcic, & Schei, 1998; Goldstein, Wampler, & Wise, 1997).

Research in the field of trauma has shown that exposure to trauma is detrimental to adolescent psychological functioning. Traumatic events can be natural as well as human made. An event is considered traumatic within Diagnostic and

Statistical Manual of Mental Disorders-IV-T.R. (American Psychiatric Association, 2000), if a person 1) perceived that his or her life was in danger or that he or she would seriously be harmed and 2) experienced intense horror, fear, or helplessness. An extreme reaction to the traumatic event may lead to posttraumatic stress disorder (PTSD). In this disorder the traumatized person persistently 1) reexperiences the traumatic event, 2) avoids reminders of the event and experiences numbed responsiveness, and 3) suffers from increased arousal. These symptoms cause significant distress in important areas of functioning in the person's life.

Much research has been conducted linking a broad range of traumatic events with PTSD. It has been shown that traumatic events, such as experiencing a hurricane (Vernberg, La Greca, Silverman, & Prinstein, 1996), motor vehicle accidents (Keppel-Benson, Ollendick, & Benson, 2002), community violence (Burton, Foy, Bwanausi, Johnson & Moore, 1994; Wood, Foy, Layne, Pynoos, & James, 2002), abuse and witnessing family violence (Dubner & Motta, 1999; Boney-McCoy & Finkelhor 1996; Silva et al, 2000), war (Thabet & Vostanis, 2000; Papageorgiou et al., 2000; Vizek-Vidovic, Kuterovac-Jagodic & Arambsic, 2000), and terrorist attacks (Koplewicz et al., 2002) predict significant levels of PTSD in children and adolescents.

Trauma Exposure and Posttraumatic Stress Symptomatology

Trauma exposure accounts for only part of the variance in posttraumatic stress symptomatology (PTSS). Other variables must be investigated to obtain a full picture of the variables that lead to this disorder. One potentially important factor is parental depression, which may have a negative impact on children and adolescents because depressed parents are often not available emotionally for their children. Depressed

parents may not be able to provide an enriching environment for children and, in fact, depressed parents may lead their children into unsafe and stressful environments (Goodman & Gotlib, 1999). Therefore, traumatized children whose parents are depressed may lack a very important resource to help them cope with traumatic events. This leaves them more vulnerable, and they may develop posttraumatic stress disorder.

Parental Depression and Posttraumatic Stress Symptomatology

Although the literature is rich in studies of the negative impact of parental depression on various adolescent outcomes, few studies have investigated the effects of parental depression on children who have experienced a traumatic event. Kelly, Faust, Runyon, and Kenny (2002) investigated the effects of parental depression in sexually abused children. Compared to non-depressed mothers, depressed mothers reported significantly higher levels of conduct disorder, socialized aggression, attention problems or immaturity, and psychotic behavior in their sexually abused children. Depressed and non-depressed mothers did not report significantly different levels of anxiety or withdrawal behaviors or excessive motor tension in their sexually abused children. Children's self-report of depressive symptoms indicated that children of depressed mothers reported significantly higher levels of depression compared to children of non-depressed mothers. In another study examining parental depression and trauma, Kilic, Ozguven, and Sayil (2003) found that paternal depression significantly predicted PTSS in Turkish children following an earthquake. Paternal depression did not predict child depression in this sample.

Although studies have shown that PTSD and depression are comorbid in war-exposed populations (Favaro, Maiorani, Colombo, Santonastaso, 1999), very little

research has been conducted investigating the effects of parental depression on adolescents who have experienced war trauma. In a study of the effects of war exposure and maternal reactions in the psychological wellbeing of Bosnian adolescents, Smith, Perrin, Yule and Rabe-Hesketh (2001) found that maternal depression significantly predicted child depression.

Parental Depression and Filial Responsibility

Goodman and Gotlib (1999) proposed that one of the reasons maternal depression is detrimental to child psychological functioning is that children are not only exposed to depression but also to a variety of stressors related to depression that mediate the association between maternal depression and child psychopathology. They propose that some of these stressors are poverty, marital discord, and maternal stress. Additionally, various family interaction styles may be stressful for a child. One of these family interaction styles may be filial responsibility.

Filial responsibility is a family dynamic in which children fulfill instrumental and/or emotional caregiving roles in their families. It may be developmentally inappropriate or psychologically burdensome (Boszormenyi-Nagy & Spark, 1973; Jurkovic, 1997). Instrumental caregiving involves taking care of the physical needs of the family, such as cooking, child rearing, and shopping. Emotional caregiving involves taking care of the family's socioemotional needs through such tasks as being a companion, mediating conflicts, and providing support and nurturing. A child can assume these roles with parents or siblings as the recipients of the caregiving (Jurkovic, Jesse & Goglia, 1991). It is not uncommon for parents to recruit their children to help

with the family's instrumental and emotional needs in times of crisis or stress (Boszormenyi-Nagy & Krasner, 1986).

Filial responsibility becomes problematic when there is an unfair balance of give-and-take in the family. In this situation children assume caretaking responsibilities without being acknowledged, supported, and supervised; children may even be manipulated into these roles (Jurkovic, 1997). Boszormenyi-Nagy and Krasner (1986) referred to this unfair balance in the caretaking dynamic as destructive parentification. A destructively parentified child experiences anxiety, stress, and depression in his or her attempt to fulfill the needs or interests of a family member at the denial of his or her own needs (Boszormenyi-Nagy & Spark, 1973; Jurkovic, 1997). According to Jurkovic (1997), developmental characteristics may increase the likelihood of children's assuming considerable filial responsibility. For example, a child who displays early innate therapeutic tendencies and empathy may be more inclined to assume filial responsibility (Sagi & Hoffman, 1976; Zahn-Waxler & Robinson 1995). Also, a child may seek proximity to his or her caregiver through caregiving behaviors because his or her parent is not available emotionally (Bowlby, 1979; Main & Hesse, 1990).

Jurkovic, Kuperminc, and Casey (submitted for publication) investigated filial responsibility and personal and social adjustment in immigrant Latino adolescents. They found that instrumental caregiving had a negative impact on self-reported stress only when there was perceived unfairness in the balance of give-and-take in the home. Also, adolescents had more problems in school when they were involved in high levels of emotional caregiving in an unfair home environment.

Langrock, Compas, Keller, Merchant, and Copeland (2002) investigated how children and adolescents cope with the stress of parental depression. They found that children of depressed parents have elevated levels of internalizing and externalizing emotional and behavioral problems. As the numbers of stressors due to parental depression increased, children used less adaptive methods of coping in Langrock et al.'s (2002) study. They also found that children who were able to use strategies aimed at accepting and adapting to the stress of living with a depressed parent displayed lower levels of depression/anxiety and aggression than children who attempted to take direct action to change the stressful situation or their emotions. Studies of young children show that signs of emotional caretaking can be seen at an early age. Zahn-Waxler, Cummings, McKnew, and Radke-Yarrow (1984) studied altruism and social interactions in toddlers of parents with bipolar disorder. They found that children of parents with bipolar disorder had heightened emotionality following stimulation of distress and were more likely to remain fixated on a distressed peer in an experimental situation when compared to a group of children whose parents did not have bipolar disorder.

In a study of caring behavior in toddlers of clinically depressed mothers and non-depressed mothers, Radke-Yarrow, Zahn-Wexler, Richardson, Susman, and Martinez (1994) found that children of depressed mothers were more likely than children of non-depressed mothers to intervene in reaction to their mother's simulated sadness. They also found that girls were more likely to intervene in response to maternal sadness than boys regardless of their mothers' mood status. Boys were only likely to intervene if their mothers were severely depressed.

Zahn-Waxler, Kochanska, Krupnick, and McKnew (1990) studied guilt, emotional involvement, and caring behavior in a group of children of depressed and well mothers. Children of depressed mothers did not differ from the control group in the increase of guilt symptoms with age. Yet, younger children of depressed mothers were more likely to display themes of involvement and responsibility in another's interpersonal distress than the control group. However, older children of depressed mothers displayed less involvement and responsibility than children of non-depressed mothers. The authors proposed that the older children were still experiencing guilt, but displayed apathy because they were struggling against these feelings.

Filial Responsibility and Posttraumatic Stress Symptomatology

Green and Jurkovic (submitted for publication) examined the relation between destructive filial responsibility, family coping, trauma symptomatology and other negative psychological outcomes in sexually abused adolescent girls. They found that elevated scores in destructive filial responsibility were significantly related to anxiety, depression, anger, posttraumatic stress, and sexual concerns. They also found that girls from families with fewer coping skills exhibited significantly higher levels of destructive filial responsibility and experienced more anxiety, anger, and posttraumatic stress. Filial responsibility significantly mediated the relationship between family coping and both child anxiety and posttraumatic stress. Filial responsibility partially mediated the relationship between family coping and anger. This study suggests that poor family coping negatively impacts anxiety, anger, and posttraumatic stress disorder through an unfair balance in fairness and extensive caregiving in sexually abused adolescent girls.

Jurkovic and Martin (1999) investigated filial responsibility and sexual abuse in a population of female undergraduate college students. They found that unfair caregiving significantly moderated the relationship between trauma exposure and PTSS, such that, the relation between trauma exposure and PTSS was significantly greater when unfair caregiving was high. By contrast, using a recently developed multi-dimensional measure of filial responsibility (Jurkovic & Thirkield, 1999), Morrell (2003) found that fairness alone, not the interaction of fairness and caregiving, significantly predicted intrusive symptoms of PTSD in a population of undergraduate college students.

Filial responsibility is an important variable to study in adolescents who have been exposed to war trauma because of the nature of war and life after war. Families in war zones have been impacted by war, and one of the parents may experience symptoms of depression. As a result of parental depression, an adolescent may assume caretaking roles that the parents cannot fully supervise and support, exacerbating the effects of trauma leading to higher levels of PTSS. The present study examined the relation between parental depression and PTSS and the hypothesized mediating role of problematic filial responsibility (Jurkovic, 1997). This mediating relationship takes place when a child is expected to fulfill caretaking roles in the family in an unfair way. The psychological coping skills of the child are then taxed because he or she is taking care of others' needs instead of his or her own needs. Therefore, he or she is vulnerable to the negative consequences of the traumatic experience. It is hypothesized that the mediation takes place only under circumstances of low justice in the home reflecting the lack of reciprocity in give-and-take in the family.

CHAPTER 2

Methods

Sample

A quasi-random sample of 145 6th, 7th, and 8th grade boys and girls and their parents (mostly mothers) was drawn from an elementary school in Sarajevo, Bosnia in December 2000. The students in 6th-8th grades were given the opportunity to participate in the study. The children were between 6 and 8 years of age when the war ended. The parents had an average of 11-12 years of education. Ninety-six % of the parents who participated in the study were Muslim. All of the children and their parents were exposed to significant war trauma.

Procedure

The school psychologist and two assistants administered the questionnaires at the school. Informed consent was given by the parents, and assent by the children. The parents met in groups of 10-15, while the adolescents met in groups of 8-10. There was a 99% participation rate. The participation rate was this high because parents were very eager for their children to receive help. Also, because the school was often the center of the community, parents were very involved in school activities. The school psychologist was available to answer any questions during the testing and held debriefing sessions after the testing. All of the measures were translated from English to Bosnian and back-translated to check for accuracy.

Measures

In addition to a demographic questionnaire, several self-report measures were administered.

Two Factor Index of Social Position (Hollingshead, 1965). The educational scale of this instrument was used to classify the parents' level of schooling. Ratings can range from 1 (graduate professional training) to 7 (less than seven years of school). The parents' ratings within each family were averaged.

Parent's Report of Posttraumatic Stress (PROPS) (Greenwald & Rubin, 1999). This 32 item measure assesses internalizing, externalizing, and somatic symptoms during the previous 7 days in children as reported by their parents. Ratings range from 0 (not true) to 2 (very true). The PROPS has high internal reliability with an alpha of .93 in a population of American adolescents in western Massachusetts (Greenwald & Rubin, 1999). The internal reliability in the current was also high ($\alpha = .93$) (Jurkovic, Sarac, Kuperminc, & Morrell, 2002). This measure has been translated into German, Spanish, Bosnian, Persian, Dutch, Italian, and Finnish (Greenwald et al., 2002).

Children's Report of Posttraumatic Stress (CROPS) (Greenwald & Rubin, 1999). This 26 item measure assesses intrusion, avoidance, psychosomatic, anxiety, dysphoric symptoms and self-alienation during the previous 7 days in children as reported by the children. Ratings range from 0 (not true) to 2 (very true). The CROPS has high internal reliability with an alpha of .91 in a population of American adolescents in western Massachusetts (Greenwald & Rubin, 1999). The internal reliability in the current study was also high ($\alpha = .89$) (Jurkovic et al., 2002). This measure has been translated into German, Spanish, Bosnian, Persian, Dutch, Italian, and Finnish (Greenwald et al., 2002).

Center for Epidemiological Studies of Depression—CES-D (Ensel, 1986). This measure assesses parental depression during the previous 7 days. The CES-D was found to be internally reliable in this sample ($\alpha = .80$). This measure uses a 0-3 scale, and there are 20 items. Summed scale scores can range from 0 to 60. The clinical cutoff score for depression typically used in studies of Americans is 16 (Shima, Shirano, & Kitamura, 1985; Weissman, Myers, & Harding, 1978). Norms are not available for a Bosnian population. This measure has been translated into Afrikaans, Arabic, Cambodian, Cantonese, Danish, Dutch, French, German, Greek, Italian, Japanese, Portuguese, Spanish, and Swedish (The Quality of Life Instruments Database, n.d.)

Filial Responsibility Scale for Youth—FRS-Y (Jurkovic, Kuperminc, & Casey, 2000). This 34-item, self-report instrument consists of three subscales: Instrumental Caregiving, Emotional Caregiving, and Fairness. Scores for each item range from 1 (not at all true) to 4 (very true). Two of the items related to language brokering were not included in this study. A factor analysis of the theoretically derived structure of the FRS-Y was conducted to evaluate the applicability to the sample. The analysis yielded a fairness factor, while the instrumental and emotional caregiving factors loaded onto a single caregiving factor. This may be because the Bosnian youths did not distinguish between instrumental and caregiving activities. Therefore, the data were analyzed using fairness and combined caregiving variables. The FRS-Y was found to be internally reliable for fairness ($\alpha = .81$) and caregiving ($\alpha = .85$) (Jurkovic, Kuperminc, Sarac, & Weisshaar, in press). The FRS-Y has been translated into Spanish and Bosnian.

CHAPTER 3

Results

Descriptive Statistics

Descriptive statistics for the three independent variables (parental depression, fairness, and caregiving), the two dependent variables (child report of posttraumatic symptomatology and parental report of child posttraumatic symptomatology) and demographic variables are shown in Table 1.

Preliminary Analyses

Scores on the different variables were examined for outliers and distributional properties before computing regression statistics. No significant outliers were detected. Unfairness scores, as measured by the FRS-Y, were significantly positively skewed. This variable was transformed using logarithmic 10 to minimize skewness. All of the other variables were normally distributed.

Regression Analyses

To test the hypothesis that the relation between maternal depression and PTSS is mediated by filial responsibility, a series of analyses were conducted. Only mothers' depression was investigated because the majority of parents who participated were mothers. The filial responsibility measure was used in three different ways to test the mediation model. For the first filial responsibility variable (unfairxcare), centered scores on the transformed unfairness subscale and the caregiving subscale were multiplied to create an interaction term. Whenever this variable was used, the unfairness and caregiving variables were controlled to isolate

Table 1

Descriptive Statistics for Independent and Dependent Variables (Mother's Only)

Variable	N	Frequency	Range	Mean	Standard Deviation
Gender	111	Boys—49, Girls-62			
Grade	111	6th—21, 7th—38, 8th--52	6-8	7.28	0.77
Parent's Education Level	112		1-7	3.75	1.33
Depression	107		5-53	20.74	9.81
Caregiving Total	110		0.84-2.95	1.84	0.43
Caregiving Boys	49		1.32-2.74	1.91	0.38
Caregiving Girls	61		0.84-2.95	1.78	0.46
Unfairness Total	111		1.11-1.51	1.24	0.10
Unfairness Boys	49		1.11-1.48	1.26	0.11
Unfairness Girls	62		1.11-1.51	1.21	0.09
PTSS—Child Report Total	111		0.00-1.69	0.69	0.35
PTSS—Child Report Boys	49		0.16-1.42	0.74	0.33
PTSS—Child Report Girls	62		0.00-1.69	0.65	0.35
PTSS—Parent Report Total	98		0.00-1.75	0.62	0.39
PTSS—Parent Report Boys	43		0.03-1.75	0.74	0.36
PTSS—Parent Report Girls	55		0.00-1.50	0.53	0.38

Note: The unfairness mean and standard deviation are based on the transformed variable

the influence of the interaction term. For the second filial responsibility variable (careunfair1), adolescents who scored above the median on the caregiving variable and above the median on the unfairness scale were assigned a score of 1; all other adolescents were assigned a score of 2 (see Table 2 for number of adolescents in each group).

Table 2

Number of Participants in Carefair1 Categories (Mothers Only)

	High Unfairness High Caregiving	The Rest of the Population
Boys	24	25
Girls	15	46
Total	39	71

For the third filial responsibility variable (careunfair2), the unfairness and caregiving variables were also divided by the median to make a dichotomous variable, but the adolescents who scored above the median on the caregiving variable and above the median on the unfairness scale were assigned a score of 1; adolescents who scored below the median on the caregiving variable and below the median on the unfairness variable were assigned a score of 2 (see Table 3 for number of adolescents in each group).

Table 3

Number of Participants in Carefair2 Categories (Mothers Only)

	High Unfairness High Caregiving	Low Unfairness Low Caregiving
Boys	24	11
Girls	15	16
Total	39	27

The caregiving and unfairness variables were investigated separately as mediators as well.

A correlation matrix of the primary demographic, independent, and dependent variables with only mothers participating is presented in Table 4. The relationships

between parental depression and the two PTSS variables were significantly correlated, but the relationships between maternal depression and the three filial responsibility variables were not. The relationships between parental depression and the caregiving and unfairness variables were also not significant. Therefore, the proposed mediation models were not tested. The same mediation model was examined with either parent participating, which increased the N from 111 to 140 participants. Similar results were obtained (see Table 5 for descriptive statistics, Tables 6 & 7 for number of adolescents in various groups for filial responsibility variables and Table 8 for correlations).

Table 6

Number of Participants in Carefair1 Categories (Either Parent)

	High Unfairness High Caregiving	The Rest of the Population
Boys	31	30
Girls	20	58
Total	51	88

Table 7

Number of Participants in Carefair2 Categories (Either Parent)

	High Unfairness High Caregiving	Low Unfairness Low Caregiving
Boys	31	12
Girls	20	20
Total	51	32

Because parental depression was significantly correlated to the two PTSS variables, several regression analyses were conducted to test whether parental depression predicted PTSS in adolescents. Both parental education level and gender were controlled because of their significant relationships to PTSS. As shown in Table 9, parental depression did not account for a significant amount of variance in adolescent report of PTSS for adolescents whose mothers participated.

Table 4

Zero Order Correlation Matrix (Mothers Participating)

	Gender	Grade	Education	Depression	PROPS	CROPS	Caregiving	Unfairness	Carefair1	Carefair2	Carexfair
Gender	1	-.31	-.16	-.08	-.27**	-.14	-.15	-.24*	-.25**	-.21	.02
Grade		1	.05	.15	.01	.15	-.01	.02	.06	.00	.06
Education			1	.28**	.21*	.27**	.11	.25**	.16	.24*	-.07
Depression				1	.58**	.20*	.10	.14	.08	.10	.08
PROPS					1	.31**	.04	.23*	.22*	.25	.10
CROPS						1	.41**	.59**	.47**	.60**	-.13
Caregiving							1	.44**	.65**	.85**	-.14
Unfairness								1	.64**	.79**	.24*
Carefair1									1	1.00**	.24*
Carefair2										1	-.64**
Carexfair											1

* $p < .05$, ** $p < .01$.
Note: The carexfair variable has caregiving and fairness variables controlled for in partial correlations

Table 5

Descriptive Statistics for Independent and Dependent Variables (Either Parent)

Variable	N	Frequency	Range	Mean	Standard Deviation
Gender	140	Boys—61, Girls—79			
Grade	140	6th—26, 7th—48, 8th—66	6-8	7.29	0.76
Parent's Education Level	141		1-7	3.68	1.33
Depression	134		0-53	19.75	9.78
Caregiving Total	139		0.84-3.79	1.86	0.46
Caregiving Boys	61		1.26-2.74	1.94	0.38
Caregiving Girls	78		0.84-3.79	1.80	0.50
Unfairness Total	140		1.11-1.57	1.25	0.11
Unfairness Boys	61		1.11-1.57	1.27	0.12
Unfairness Girls	79		1.11-1.51	1.22	0.09
PTSS—Child Report Total	140		0.00-1.69	0.70	0.35
PTSS—Child Report Boys	61		0.16-1.65	0.75	0.34
PTSS—Child Report Girls	79		0.00-1.69	0.66	0.35
PTSS—Parent Report Total	127		0.00-1.75	0.61	0.39
PTSS—Parent Report Boys	53		0.03-1.75	0.72	0.37
PTSS—Parent Report Girls	72		0.00-1.50	0.53	0.37

Note: The unfairness mean and standard deviation are based on the transformed variable

Table 9

Parental Depression Predicting Adolescent Report of PTSS (Mothers Only)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.047	.067	-.068	-.702	---	---	---
Parental Education	.064	.025	.251	2.589*	.073	2, 101	3.98*
Step 2							
Gender	-.043	.067	-.063	-.649	---	---	---
Parental Education	.054	.026	.212	2.113*	---	---	---
Depression	.096	.069	.139	1.39	.091	3, 100	3.32*

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

Similarly, when either parent participated, parental depression did not account for a significant amount of variance in adolescent report of PTSS (see Table 10).

Table 10

Parental Depression Predicting Adolescent Report of PTSS (Either Parent)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.031	.061	-.045	-.515	---	---	---
Parental Education	.065	.023	.251	2.891**	.069	2, 128	4.75**
Step 2							
Gender	-.026	.060	-.037	-.431	---	---	---
Parental Education	.052	.023	.199	2.211*	---	---	---
Depression	.118	.062	.169	1.904	.095	3, 127	4.44**

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

As shown in Table 11, parental depression accounted for a significant amount of variance in parental report of adolescent PTSS for adolescents whose mothers participated.

Table 8

Zero Order Correlation Matrix (Either Parent)

	Gender	Grade	Education	Depression	PROPS	CROPS	Caregiving	Unfairness	Carefair1	Carefair2	Carexfair
Gender	1	-.05	-.20*	-.10	-.24**	-.12	-.15	-.23**	-.26**	-.23*	.05
Grade		1	.06	.16	-.01	.11	.02	.03	.03	.02	.01
Education			1	.31**	.24**	.27**	.11	.25**	.15	.23*	.01
Depression				1	.56**	.23**	.12	.16	.11	.17	-.02
PROPS					1	.37**	.05	.25**	.25**	.27*	.06
CROPS						1	.39**	.59**	.47**	.59**	-.16
Caregiving							1	.44**	.65**	.82**	.04
Unfairness								1	.60**	.76**	.32*
Carefair1									1	1.00**	.05
Carefair2										1	-.72**
Carexfair											1

* $p < .05$, ** $p < .01$.
Note: The carexfair variable has caregiving and fairness variables controlled for in partial correlations

Table 11

Parental Depression Predicting Parental Report of Adolescent PTSS (Mothers Only)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.184	.077	-.237	-2.378*	---	---	---
Parental Education	.053	.028	.189	1.903	.104	2, 92	5.32**
Step 2							
Gender	-.160	.065	-.206	-2.480*	---	---	---
Parental Education	.079	.024	.028	0.324	---	---	---
Depression	.449	.070	.555	6.429**	.384	3, 91	18.88**

* $p < .05$, ** $p < .01$.

Similarly, for adolescents who had either parent participate, parental depression accounted for a significant amount of variance in parental report of adolescent PTSS (see Table 12).

Table 12

Parental Depression Predicting Parental Report of Adolescent PTSS (Either Parent)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.148	.070	-.188	-2.125*	---	---	---
Parental Education	.062	.025	.219	2.473*	.098	2, 118	6.375**
Step 2							
Gender	-.117	.060	-.149	-1.957	---	---	---
Parental Education	.015	.023	.052	.647	---	---	---
Depression	.428	.065	.525	6.586**	.342	3, 117	20.237**

* $p < .05$, ** $p < .01$.

There were also gender differences worthy of note. Independent samples t-tests were conducted to examine differences between boys and girls reports of caregiving, fairness, PTSS and parental report of PTSS (see Tables 1 and 5 for means and standard deviations). For adolescents whose mothers participated, while boys reported a higher

level of caregiving than girls, the difference was not significant, $t(108) = 1.53$, $p = .13$. In comparison to girls, boys reported a significantly higher level of unfairness in the home, $t(109) = 2.54$, $p < .05$. While there was no significant gender difference on adolescent report of PTSS, $t(109) = 1.48$, $p = .15$, parents reported that boys showed a significantly higher amount of PTSS symptoms than girls, $t(96) = 2.73$, $p < .01$. As noted above, correlations were conducted between gender and both adolescent report of PTSS and parental report of adolescent PTSS. There were negative correlations between gender and adolescent report of PTSS ($r = -.14$) and between gender and parental report of adolescent PTSS ($r = -.27$). This indicates that boys displayed higher levels of PTSS. A Fisher's Z test was conducted to determine if there was a significant difference between the correlation coefficients. There was not a significant difference between the two correlation coefficients, Fisher's $Z = .99$, $p = .16$. Similar non-significant gender differences were found for adolescents who had either parent participate.

Additional Analyses: Mediating Role of Filial Responsibility in the Relation of Parental Education to PTSS.

It was reasoned that parental education level could serve as a proxy for socioeconomic status because people with higher education level had better access to resources. To investigate this reasoning, parental education level was correlated with current employment of the parents at the time of the study. This proved to be a moderate correlation ($r = .34$, $p < .01$). Parents who had higher education level were more likely to have a job at the time of the study. Therefore, it was reasoned that filial responsibility may mediate the relationship between parental education level and PTSS. The carefair2 and unfairness variables were both significantly related to parental education level and

PTSS (see Tables 4 & 8 for coefficients). The carexfair, carefair2, and caregiving variables were not significantly related to either parental education level or PTSS and were not tested as mediators. Parental education level was significantly related to PTSS. Therefore, several mediation models were tested. For the carefair2 variable, for adolescents whose mothers participated, the model of carefair2 mediating the relationship between parental education level and adolescent report of PTSS was tested. For adolescents for whom either parent participated, the models of carefair2 mediating the relationship between parental education level and both adolescent report of PTSS and parent report of adolescent PTSS were tested.

For the unfairness variable, for adolescents whose mothers participated, the models of unfairness mediating the relationship between parental education level and both adolescent report and parental report of adolescent PTSS were tested. For adolescents who had either parent participate, the models of unfairness mediating the relationship between parental education level and both adolescent report and parental report of adolescent PTSS were tested.

Hierarchal regression analyses were conducted separately to test the mediation models. Gender was significantly related to parental report of adolescent PTSS and was, therefore, controlled in all analyses so that results of parent report of adolescent PTSS and adolescent report of PTSS could be compared. Results for carefair2 mediating the relationship between parental education level and adolescent report of PTSS for adolescents whose mothers participated is summarized in Table 13.

Table 13

Carefair2 Mediating the Relationship between Parental Education Level and Adolescent Report of PTSS (Mothers Only)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.063	.094	-.084	-.676	.007	1, 64	.46
Step 2							
Gender	-.087	.93	-.012	-.093	---	---	---
Parental Education	9.08	.038	.299	2.416*	.091	2,63	3.17*
Step 3							
Gender	.058	.078	.077	.745	---	---	---
Parental Education	.055	.032	.182	1.744	---	---	---
Carefair2	.438	.079	.571	5.524**	.391	3,62	13.27**

* $p < .05$, ** $p < .01$.

Gender did not account for a significant amount of variance in adolescent report of PTSS. As shown in step 2, parental education level accounted for a significant amount of variance in adolescent report of PTSS. As shown in step 3, when carefair2 was added to the equation, parental education level no longer accounted for a significant amount of variance in adolescent report of PTSS while carefair2 accounted for a significant amount of variance in adolescent report of PTSS. However, a Sobel Test conducted to measure significant mediation was not significant, $t(62) = 1.58$, $p = .11$.

Results for carefair2 mediating the relationship between parental education level and adolescent report of PTSS for adolescents who had either parent participate is summarized in Table 14.

Table 14.

Carefair2 Mediating the Relationship between Parental Education Level and Adolescent Report of PTSS (Either Parent)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.073	.084	-.096	-.871	.009	1, 81	.759
Step 2							
Gender	-.013	.086	-.018	-.160	---	---	---
Parental Education	.080	.034	.266	2.362*	.074	2, 80	3.190*
Step 3							
Gender	.062	.072	.081	.860	---	---	---
Parental Education	.049	.029	.164	1.731	---	---	---
Carefair2	.446	.073	.571	6.147**	.373	3, 79	15.698**

$p < .05$, ** $p < .01$.

Gender did not account for a significant amount of variance in adolescent report of PTSS. As shown in step 2, parental education level accounted for a significant amount of variance in adolescent report of PTSS. As shown in step 3, when carefair2 was added to the analysis, parental education level no longer accounted for a significant amount of variance in adolescent report of PTSS while carefair2 accounted for a significant amount of variance in adolescent report of PTSS. However, a Sobel Test conducted to measure significant mediation was not significant, $t(79) = 1.55$, $p = .12$.

Results for carefair2 mediating the relationship between parental education level and parental report of adolescent PTSS for adolescents who had either parent participate are summarized in Table 15.

Table 15

Carefair2 Mediating the Relationship between Parental Education Level and Parental Report of Adolescent' PTSS (Either Parent)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.134	.088	-.177	-1.528	.031	1, 72	2.336
Step 2							
Gender	-.093	.090	-.123	-1.037	---	---	---
Parental Education	.059	.035	.203	1.705	.070	2, 71	2.652
Step 3							
Gender	-.068	.090	-.090	-.765	---	---	---
Parental Education	.049	.035	.167	1.415	---	---	---
Carefair2	.170	.090	.218	1.881	.114	3, 70	3.011*

* $p < .05$, ** $p < .01$.

Gender did not account for a significant amount of variance in parental report of adolescent PTSS. As shown in step 2, parental education level did not account for a significant amount of variance in parental report of adolescent PTSS. As shown in step 3, when carefair2 was added to the analysis, neither parental education level nor carefair2 accounted for a significant amount of variance in parental report of adolescent PTSS.

Results for unfairness mediating the relationship between parental education level and adolescent report of PTSS for adolescents whose mothers participated are summarized in Table 16.

Table 16

Unfairness Mediating the Relationship between Parental Education Level and Adolescent Report of PTSS (Mothers Only)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.091	.066	-.131	-1.375	.017	1, 108	1.890
Step 2							
Gender	-.062	.065	-.090	-.955	---	---	---
Parental Education	.067	.024	.258	2.747**	.082	2, 107	4.775**
Step 3							
Gender	.014	.056	.020	.255	---	---	---
Parental Education	.035	.021	.134	1.666	---	---	---
Unfairness	1.898	.278	.599	6.835**	.363	3, 106	20.116**

* $p < .05$, ** $p < .01$.

Gender did not account for a significant amount of adolescent report of PTSS. As shown in step 2, parental education level accounted for a significant amount of variance in adolescent report of PTSS. As shown in step 3, when unfairness was added to the analysis, parental education level no longer accounted for a significant amount of variance in adolescent report of PTSS while unfairness accounted for a significant amount of variance in adolescent report of PTSS. A Sobel Test conducted to measure significant mediation was significant, $t(106) = 2.25$, $p < .05$.

Results for unfairness mediating the relationship between parental education level and adolescent report of PTSS for adolescent who had either parent participate are summarized in Table 17.

Table 17

Unfairness Mediating the Relationship between Parental Education Level and Adolescent Report of PTSS (Either Parent)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.081	.059	-.116	-1.368	.013	1, 137	1.872
Step 2							
Gender	-.045	.059	-.065	-.770	---	---	---
Parental Education	.066	.022	.254	3.014**	.075	2, 136	5.533**
Step 3							
Gender	.024	.050	.034	.480	---	---	---
Parental Education	.035	.019	.134	1.863	---	---	---
Unfairness	1.797	.234	.557	7.677**	.342	3, 135	24.902**

* $p < .05$, ** $p < .01$.

Gender did not account for a significant amount of adolescent report of PTSS. As shown in step 2, parental education level accounted for a significant amount of variance in adolescent report of PTSS. As shown in step 3, when unfairness was added to the analysis, parental education level no longer accounted for a significant amount of variance in adolescent report of PTSS while unfairness accounted for a significant amount of variance in adolescent report of PTSS. A Sobel Test conducted to measure significant mediation was significant, $t(135) = 2.35$, $p < .05$.

Results for unfairness mediating the relationship between parental education level and parental report of adolescent PTSS for adolescents whose mothers participated is summarized in Table 18.

Table 18

Unfairness Mediating the Relationship between Parental Education Level and Parental Report of Adolescent PTSS (Mother's only)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.205	.077	-.264	-2.668**	.070	1, 95	7.120**
Step 2							
Gender	-.187	.076	-.241	-2.446**	---	---	---
Parental Education	.053	.028	.186	1.888	.104	2, 94	5.439**
Step 3							
Gender	-.170	.077	-.219	-2.217*	---	---	---
Parental Education	.043	.028	.152	1.521	---	---	---
Unfairness	.615	.395	.157	1.555	.126	3, 93	4.486**

* $p < .05$, ** $p < .01$.

Gender did account for a significant amount of variance in parental report of PTSS. As shown in step 2, parental education level did not account for a significant amount of variance in parental report of adolescent PTSS. As shown in step 3, when unfairness was added to the analysis, neither unfairness nor parental education level accounted for a significant amount of variance in parental report of PTSS while gender did. Therefore, mediation was not found.

Results for unfairness mediating the relationship between parental education level and parental report of adolescent PTSS for adolescents who had either parent participate are summarized in Table 19. Gender did account for a significant amount of variance in parental report of PTSS. As shown in step 2, parental education level accounted for a significant amount of variance in parental report of PTSS. As shown 3, when unfairness was added to the analysis, parental education level still accounted for a significant amount of variance in parent report of adolescent PTSS as did unfairness. However, a

Sobel Test conducted to measure significant mediation was not significant, t(120) = 1.55, p = .12.

Table 19

Unfairness Mediating the Relationship between Parental Education Level and Parental Report of Adolescent' PTSS (Either Parents)

Variable	b	SE_b	B	t	R^2	$df_{m,e}$	F
Step 1							
Gender	-.181	.069	-.231	-2.625**	.053	1, 122	6.891**
Step 2							
Gender	-.154	.069	-.196	-2.241*	---	---	---
Parental Education	.062	.025	.214	2.449*	.098	2, 121	6.586**
Step 3							
Gender	-.133	.069	-.169	-1.937	---	---	---
Parental Education	.051	.026	.177	1.996*	---	---	---
Unfairness	.644	.325	.176	1.982*	.127	3, 120	5.806**

* $p < .05$, ** $p < .01$.

CHAPTER 4

Discussion

Parents in this study reported elevated depression five years after the war. The average depression score was above the clinical cutoff score of 16 used in studies of Americans (see Tables 1 and 5). This study supports previous research that parental depression predicted adolescent PTSS (Kilic, Ozguven, & Sayil, 2003). This relationship may be due to the fact that depressed parents are not available to their children emotionally (Goodman & Gotlib, 1999). The children do not have as much help to cope with traumatic experiences and, therefore, may develop higher levels of PTSS. It is interesting to note that parental depression only predicted parental report of adolescent PTSS. This finding may be due to the fact that parent's own depression affects how they view their child's PTSS. They may see the child as suffering from symptoms more than the child does.

It is also interesting that there was no gender difference found in caregiving behaviors, but boys reported a significantly higher amount of unfairness in the home. It appears that both boys and girls were expected to fulfill caregiving roles. Perhaps boys felt the treatment they received in the home in post-war Bosnia was unfair, according to cultural expectations. Also, there was no significant gender difference in adolescent report of PTSS, but parents reported a significantly higher level of PTSS symptoms in boys. Perhaps this is because boys display more of the externalizing symptoms of PTSS than girls, and therefore, parents are able to see these symptoms more easily.

This study sought to extend the research by examining what mechanisms may mediate the relationship between parental depression and PTSS. It was hypothesized that filial responsibility, specifically caregiving in an unfair environment, would mediate the relationship between parental depression and posttraumatic stress symptomatology. Because parental depression and filial responsibility were not significantly correlated, the model was not tested. This finding came as a surprise because, as noted earlier, previous studies found that children of depressed parents displayed more caregiving behaviors, especially emotional caregiving behaviors (Langrock, Compas, Keller, Merchant, and Copeland, 2002; Radke-Yarrow, Zahn-Wexler, Richardson, Susman, and Martinez, 1994; Zahn-Waxler, Cummings, McKnew, and Radke-Yarrow, 1984; Zahn-Waxler, Kochanska, Krupnick, and McKnew, 1990). The lack of relationship between these two variables may be due to measurement problems. The surveys used to measure parental depression and filial responsibility were both self-report, and therefore, the participants may not have accurately reported parental depression and filial responsibility. While there may have been measurement errors, both parental depression and filial responsibility were significantly related to PTSS. Because parental depression and problematic filial responsibility were both related to a variable with which they theoretically should covary (PTSS), it could be argued that parental depression and filial responsibility were measured accurately. While previously mentioned studies did find a relationship between parental depression and caregiving behaviors in children, they did not measure destructive filial responsibility per se. Also, the caregiving behavior by adolescents in the current study may have been specifically related to post-war conditions and not to an enduring pattern of family interaction due to parental depression. In

addition, the populations in the studies cited, mostly from white, middle-class, American families were quite different than the war-affected Bosnian population in this study. Considering the previously described post-war Bosnia, the experiences of the Bosnian families were drastically different from those of families in earlier research.

In planning the study, parental education level was proposed as a control variable to account for differences in socioeconomic status. In order to examine the data further, it was reasoned that parental education level could serve as a proxy for socioeconomic status because people with higher education level had better access to resources. Education was significantly correlated to current employment and, therefore, was considered a proxy for SES. It was decided to extend the focus of the study to examine parental education level as a predictor of PTSS, in place of the parental depression variable. Several studies have found that SES is a predictor of PTSS in adolescents. Mghir, Raskin, Bhurgra, and Krause (1999) found that Afghan children from higher SES backgrounds showed significantly less evidence of PTSD than children from lower SES backgrounds. In a study of 54 Salvadoran 12-year-olds, Walton, Riley, Nuttall, and Vazquez (1997) found that higher SES and education of parents was related to better mental health. Therefore, models were used in the current study examining filial responsibility as a mediator between parental education level and PTSS.

The filial responsibility interaction term, carefair2, in which those adolescents with high unfairness and high caregiving were compared to adolescents with low unfairness and low caregiving, proved to be the only interaction term that correlated significantly with parental education level and PTSS. However, the carefair2 variable did not mediate the relationship between parental education level and adolescent report of

PTSS for adolescents who had only mothers participate or had either parent participate. The unfairness variable significantly mediated the relationship between parental education level and adolescent report of PTSS for adolescents who had only mothers participate and had either parent participate. Perhaps the significant results are due to the fact that families at a higher SES level have better access to economic and financial services and resources, and therefore, were better able to cope with stressors related to trauma and war. When families have more access to resources and services, a sense of fairness is more likely to characterize the give-and-take in the home between parent and child.

It is important to note several variables that did not prove to be significant in this model. As noted above, the caregiving and unfairness variables were examined as mediators separate from each other. While unfairness proved to be a significant mediator, caregiving was not significantly correlated to parental education level or parental report of adolescent PTSS and, therefore, could not be tested in a model. This finding supports other studies (Morrell, 2003) that indicate that caregiving does not necessarily have a harmful impact on adolescents; it is actually the unfair conditions in the give-and-take in the home that has a harmful impact. Perhaps caregiving was not related to parental education level because war conditions made it necessary for all children to participate in caregiving behaviors regardless of SES level of parents. While caregiving was significantly related to adolescent report of PTSS, it was not significantly related to parental report of PTSS. This may be a result of parents not recognizing the PTSS symptoms of their children. Parental report of adolescent PTSS did not prove to be a significant outcome variable. While it was used in several models because it was

significantly correlated to the other variables, the models were not significant. This may be due to the fact that parents are not as aware of their children's posttraumatic stress symptomatology because several of the symptoms are more internally focused. Also, parents may be dealing with their own posttraumatic stress symptomatology and other stressors and, therefore, may have a difficult time recognizing the symptoms in their children.

There are limitations to this study worthy of note. While it was a strength that both adolescents and parents reported on adolescent PTSS, the study only used self-report measures. As noted above, parents own depression and PTSS may be affecting their view of their children's PTSS symptoms. There were no observational measures or other forms of data used in this study which would help understand current symptomatology more objectively. In addition to the self-report aspect of this study, this was a cross-sectional study conducted five years after the war in Bosnia ended. Therefore, over the course of time, symptoms may have subsided, and SES levels may have changed. It is hard to get a clear picture of what life was like for these adolescents over the course of time. But it is significant to note that the post hoc findings of unfairness mediating the relationship between parental education level and PTSS were found five years after the war, indicating that the effects of war are longstanding.

In terms of future directions, because of the post hoc nature of the significant results, the model of filial responsibility mediating the relationship between parental education level and adolescent report of PTSS needs to be replicated. Certainly, the role of SES variables in general in the development of PTSS in children and families deserve greater attention in the traumatology field. More longitudinal research needs to be

conducted to examine these factors over an extended period of time to see how they play out through the life cycle.

In conclusion, while parental depression predicted parental report of adolescent posttraumatic stress symptomatology, this study did not support the hypothesis that filial responsibility mediates the relationship between parental depression and adolescent PTSS. The model could not be tested because parental depression was not related to filial responsibility. However, post hoc results suggest that unfairness in the give-and-take in the home between parent and child mediates the relationship between parental education level and adolescent report of PTSS.

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