THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF HUMAN DEVELOPMENT AND FAMILY STUDIES

THE MODERATING EFFECT OF PARENTING ON THE RELATIONSHIP BETWEEN CHILDHOOD TRAUMA EXPOSURE AND THE DEVELOPMENT OF INTERNALIZING VS. EXTERNALIZING BEHAVIORS

JORDAN LAPORTA
SPRING 2016

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degree in Human Development and Family Studies

Reviewed and approved* by the following:

Chad Shenk
Professor of Human Development and Family Studies
Thesis Supervisor

Lisa Gatzke-Kopp
Professor of Human Development and Family Studies
Honors Adviser

* Signatures are on file in the Schreyer Honors College.

ABSTRACT

The present study assessed the extent to which parenting style has a moderating impact on the relationship between cumulative childhood trauma exposure and the development of subsequent internalizing or externalizing behaviors in the child maltreat population. Participants included n = 64 children (Age range = 8-15 years) and an accompanying non-offending caregiver, who each completed a variety of self-report and parent-report measures of child behavior, parenting characteristics, and trauma exposure. Hypotheses for outcomes following trauma exposure included: children raised by permissive parents will be more likely to develop externalizing behaviors; children raised by authoritarian parents will be more likely to develop internalizing behaviors; children raised by authoritative parents will be less likely to develop both internalizing and externalizing behavior. These hypotheses were tested through the analysis of cumulative trauma exposure, parenting characteristics (including maternal warmth, behavioral control, and psychological control), and resulting child internalizing and externalizing symptoms. Results indicated that there exist strong correlations between measures of (a) maternal warmth and externalizing behaviors, (b) parental behavioral control and psychological control, (c) internalizing/externalizing behaviors and cumulative trauma exposure, (d) maternal warmth and cumulative trauma exposure, and (e) minority status and internalizing behaviors. The implications of these findings are discussed in terms of research and future methods of prevention and intervention.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

The completion of this project would not have been possible without the help of my thesis supervisor, Dr. Shenk. I would like to thank him for his extensive support and guidance throughout this process. He truly went above and beyond the call of duty and afforded me all of the necessary resources to put forth the best possible piece of work. I would further like to thank him for allowing me to use his data from the Life Events and Reactions Study (LEARS). Finally, I would like to thank my honors advisor, Dr. Kopp, for her continued assistance throughout the completion of my thesis. I am extremely grateful for all of the help I have received from these two remarkable individuals.

Chapter 1

Introduction

Child Maltreatment

The Child Abuse Prevention and Treatment Act of 2010 (CAPTA) defines child maltreatment as "Any recent act or failure to act on the part of a parent or caretaker which results in death, serious physical or emotional harm, sexual abuse or exploitation; or an act or failure to act, which presents an imminent risk of serious harm" (CAPTA, 2010 p. 6). Defining child maltreatment is a continuous process. The manner in which we assign its meaning has a great deal to do with the effects it can have on its victims, the characteristics of its perpetrators, and the broader societal setting in which it takes place. Presently, as child maltreatment is gaining expansive research and media attention, the manner in which we define it is changing. Most relevant to researchers in the state of Pennsylvania, there have recently been important changes to the state's Child Protective Services Law (CPSL) in response to multiple accounts of unreported sexual abuse taking place on Pennsylvania State University's campus. Specifically, the state has updated its requirements for mandatory reporting, broadening the scope to include, "Any person who, in the course of employment, occupation, or practice comes into contact with children, to report when the person has reasonable cause to suspect on the basis of medical, professional, or other training or experience that a child under the care supervision, guidance, or training of that person or of an agency, institution, organization or other entity with which that person is affiliated is a victim of child abuse", whereas previously the law simply required abuse be reported when the child came to the reporter in his/her official capacity (Domestic Relations Code, 23 PA. C.S. § 6311, 2014). The definition of maltreatment has also been adjusted as a result of this law. Child maltreatment can be defined as any recent act or failure to act, (having occurred within the last two years) that results in (1) any serious

physical injury such that caused the child severe pain or significantly impaired his/her physical wellbeing, (2) neglect, such that there was repeated, prolonged, or unconscionable failure to appropriately supervise the child or provide the child with adequate essentials of life, or (3) sexual abuse, which includes the coercion, employment, inducement, or persuasion of a child into engaging or assisting another individual in engaging in sexually explicit conduct (Domestic Relations Code, 23 PA. C.S. § 6303, 2013). The, alteration of these laws and the updated definitions that accompanied them are expected to increase recognition, reporting, and substantiating of child maltreatment in Pennsylvania. This will hopefully serve as an example for other states and will result in similar results across the United States. However, this is simply one example of the constant conversation surrounding child maltreatment and, in light of these recent changes, it is likely that the definition of maltreatment and the public policies in place to prevent and treat it will continue to change over time.

Trauma Exposure in the Maltreated Population

Trauma exposure in children has consistently shown strong correlations to adverse effects concurrently and throughout the life course. Many studies have linked childhood trauma exposure to numerous mental health disorders including depression, anxiety (Heim & Nemeroff, 2001), borderline personality disorder (Herman, Perry, & Van Der Kolk, 1989), posttraumatic stress disorder (PTSD; Yehuda, Halligan, & Grossman, 2001), aggression (Sarchiapone, Carli, Cuomo, Marchetti, & Roy, 2009), and oppositional defiant disorder (ODD; Ford, Racusin, Daviss, Ellis, Rodgers, Reiser, Schiffman, & Sengupta, 1999). The long-term effects of exposure are contingent upon a number of environmental factors. This study will examine parenting style and its moderating impact on the effects of childhood trauma exposure.

Numerous types of childhood traumas, also referred to as Adverse Childhood Experiences (ACES), often co-occur with child maltreatment. These traumas can include household dysfunctions, such

as substance abuse, familial mental illness, marital discord, criminal behavior in the household (Felitti et al., 1998) and more. As childhood trauma has been proven an effective predictor of adversity in the maltreated population, it will stand at the forefront of this study in its investigation of its effects on child psychopathology in an exclusively maltreated population.

Psychopathology

Neglect, physical abuse, psychological maltreatment, and sexual abuse are the most common types of child maltreatment in the U.S. In 2013 alone there were an estimated 679,000 new cases of abuse or neglect in the United States, of which 79.5% of victims were neglected, 18.0% physically abused and 9.0% were sexually abused (U.S. Department of Health and Human Services, 2013). These staggering numbers contribute to the diminished wellbeing of the abused as well as cost to society.

The prevalence of child maltreatment results in a cumulative public health impact of $124 billion (Fang, Brown, Florence & Mercy, 2012). Psychopathology is one of the primary factors causing the broad public health impact of child maltreatment. To demonstrate this, a study by Yanos, Czaja, and Widom (2010) analyzed the implications child maltreatment has for service use through adulthood. They examined a sample of abused or neglected and non-victimized children based on self-report data for use of mental health and social services in the past year. Results showed that individuals with histories of childhood abuse and neglect were significantly more likely to use these services in adulthood than were individuals in the control group. Yanos and colleagues (2010) explained this phenomenon by pointing to the increased rates of psychiatric morbidity that are common of victims of child maltreatment, which in turn influences higher healthcare spending.

Psychopathology is typically studied according to two broad categories: internalizing and externalizing behaviors. Internalizing behaviors can be defined as the expression of depression, fearfulness, inhibition, over-control and withdrawn behavior, whereas externalizing behaviors can be

defined as including aggression, antisocial, and under controlled behavior (Kendall-Tackett, Williams & Finklehor, 1993). Surprisingly, these behaviors have been shown to follow different pathways throughout the life course. Internalizing behaviors typically develop throughout the life course and their severity increases with age. Externalizing behaviors, on the other hand, typically onset during childhood or adolescence and decrease with age, all the while persisting into adulthood (Kessler, Chiu, Demier, & Walters, 2005). The continuous and lasting expression of these behaviors demonstrates the importance of further research on potential protective factors that may prevent or diminish their effects.

Unfortunately, internalizing and externalizing behaviors often influence very serious outcomes in adulthood for affected individuals. For instance, externalizing behaviors in childhood have been linked to substance abuse disorders (King, Iacono, & McGue, 2004), disruptive disorders (i.e. oppositional defiant disorder, antisocial personality disorder, and ADHD), anxiety disorders and mood disorders (Reef, Diamantopoulou, Van Meurs, Verhulst, & Van der Ende, 2011). Internalizing disorders, on the other hand, have been associated with higher rates of depression, anxiety, and suicidal ideation in adulthood (Colman, Wadsworth, Croudace, & Jones, 2007).

The risk of developing internalizing or externalizing behaviors that persist throughout the life course is much higher for victims of child maltreatment (Lansford et al., 2002; Thornberry, Ireland, & Smith, 2001). As a result, child maltreatment contributes to mental health problems in adulthood (Fergusson, Boden, & Horwood, 2008). Public health costs for psychopathology are so high because the expressed internalizing and externalizing behaviors persist into adulthood, thus leading to adult psychiatric disorders if left untreated. Despite this high risk, some individuals do not develop behavior problems as a result of maltreatment (Lansford et al., 2002; Thornberry, Ireland, & Smith, 2001), which suggests that there exist protective factors in certain individuals' environments that promote resiliency.

Exposure to multiple types and repeated episodes of maltreatment is consistently associated with more severe psychological effects (Gilbert, Widom, Browne, Fergusson, Webb, & Janson, 2009). This phenomenon is called a dose-response relationship, which explains that differing levels of exposure to a

stressor can lead to different outcomes, with more frequent exposure being consistent with more severe outcomes. A strong dose-response relationship has been observed between a breadth of exposure to childhood traumas (including maltreatment) and risk factors for adult health (Felitti et al., 1998). The same effects can be found when individuals experience multiple forms of trauma separately from maltreatment. For example, Dube et al. (2001) found that children who experienced maltreatment concurrently with household dysfunction (i.e. battered mother, substance abuse in the home, mentally ill mother, parental divorce/separation, or having an incarcerated family member) were anywhere from two to five times more likely to attempt suicide in adulthood. They included that these instances are highly interrelated and, as a result, often co-occur. Other studies have similarly focused on the implications multiple experiences of trauma can have for psychological outcomes. Felitti et al. (1998) looked at the relationship between child maltreatment and household dysfunction and some of the leading causes of death in adulthood as part of the Adverse Childhood Experiences (ACE) Study. For each individual who had reported exposure to a single category of adversity, the probability that they had also been exposed to one additional category was approximately 80%, and the probability that they had been exposed to two or more additional categories was approximately 54%. It follows that as the number of exposures an individual experienced increased, the prevalence and risk of mortality increased as well.

Parenting

Parenting is often considered one of the most influential factors affecting child development and as such it has consistently been a topic of interest amongst developmental researchers. It can be explained as having two very different actions. First, parenting can act as a protective factor by fostering resiliency in children faced with adversity. Second, it can act as a risk factor, cumulatively contributing to the negative effects of adverse childhood experiences. There are three parenting styles of interest, as described by Baumrind (1991), and each one contributes a different impact on child development. The

first is Authoritarian Parenting, which encompasses parents who are demanding and directive. They are not responsive to their children, but rather are focused on obedience, regulation, and strict monitoring. The second is Permissive Parenting, which includes parents who are highly responsive but not demanding. They are typically very lenient and allow their children to self-regulate their behavior. The final parenting style is the Authoritative Parenting style, which is often considered to be the gold standard of parenting. These parents are demanding but also responsive to their children. They are assertive, but not intrusive, and implement supportive disciplinary methods.

Studies show that different parenting styles can influence different outcomes. Factors indicative of "good parenting", including parent-child closeness, parent involvement in education, and firm discipline, have been linked to increased achievement and better behavior in school of children from homeless families (Miliotis, Sesma, & Masten, 1999). As a result, Authoritative Parenting is associated with promoting the best outcomes in children. In contrast, where Authoritative Parenting promotes consistently good results, the results for Authoritarian and Permissive Parenting tend to be more mixed. In general, Authoritarian Parenting is associated with increased internalizing behaviors. One explanation of this is that the over-controlling and non-responsive environment diminishes child self-esteem, which leads to an internalization of emotions. In contrast, Permissive Parenting is associated with increased externalizing behaviors. This can be explained by the indulgent nature of Permissive Parenting that gives children a great deal of freedom, thus making them more comfortable with and inclined toward outward expressions of emotion (Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994).

Since parenting styles appear to be strongly correlated with child psychopathology and ACES have their own implications for psychological outcomes, it is important to study the relationship between these concepts. While numerous studies in the past have focused on the varying effects of ACES and child maltreatment on developmental behaviors, little research has analyzed which specific factors influence the likelihood of acquiring certain behaviors over others as a result of maltreatment. According to the Center for Children's Health (2012), parenting that is nurturing, consistent, supportive and fosters

secure attachments can act as a protective factor against adverse childhood experiences. It also points out that parenting that is neglectful or over-demanding can act as a risk factor, encouraging negative effects of adverse childhood experiences. It is the goal of this study to determine whether or not parenting style is the missing link between ACES and their outcomes. If we can definitively point to parenting domains that make up the different parenting styles, warmth, behavioral control, and psychological control, as moderators for the outcomes of trauma exposure, there exist implications for prevention and intervention. Parents can be targeted through parenting classes that will train them to sensitively communicate with their child after an incidence of maltreatment to help prevent subsequent negative outcomes. It can also allow an opportunity for intervention when negligent parenting practices may be contributing to those outcomes. This project will specifically analyze the outcomes of maltreatment in accordance with the different parenting styles of primary caregivers, such that different styles should yield different expressions of internalizing vs. externalizing behaviors in victims.

Most commonly the parents of the victims are also the perpetrators of maltreatment. Data show that 91.4% of cases point to the either one or both parents as the perpetrators (U.S. Department of Health and Human Services, 2013). For this reason, it is important that maltreatment research regarding parenting distinguish the role of the parent being studied. This study, when referring to parenting, will exclusively be referencing the behaviors and actions of a non-offending caregiver. This may include the child's biological parents, adoptive parents, foster parents, or caretaking relatives.

The present study will analyze the moderating effect of parenting style on the likelihood of developing internalizing vs. externalizing behaviors following childhood trauma exposure in an exclusively maltreated population. Specifically, it will test whether differences in internalizing and externalizing behaviors are displayed as a result of three characteristics of parenting: warmth, psychological control, and behavioral control. My hypotheses are threefold: (1) Children raised by parents low in behavioral and psychological control but high in warmth will be more likely to develop externalizing behaviors following trauma exposure; (2) Children raised by parents high in behavioral and

psychological control and low in warmth will be more likely to develop internalizing behaviors following trauma exposure; (3) Children raised by parents with high levels of warmth and behavioral and psychological control will be less likely to develop both internalizing and externalizing behavior following trauma exposure.

Chapter 2

Methods

Sample

The data for this study were collected as a part of The Life Events and Reactions Study (LEARS). LEARS is an ongoing, genetic case-control association study, examining the relationship between substantiated child maltreatment and subsequent psychiatric disorders. All participants were recruited from Child Protective Services (CPS) in Cincinnati, OH. A designated social worker at CPS provided contact information for families with a child that had received a substantiated designation of child maltreatment in the past 12 months. These families were mailed a recruitment letter describing the study and then were contacted by a project coordinator to determine their eligibility based on inclusion/exclusion criteria. Eligible families then came to the data collection site to participate in the study. The final available sample size for the current study consisted of $n = 64$ children and a non-offending caregiver. Children in this sample were aged 8-15 (M =11.38, SD = 2.31). Approximately 65% were female, 67% were minorities, and 62% were living in a single parent household.

Procedures

All study procedures were approved by the local institutional review board prior to data collection. Inclusion criteria for the study include: (1) individuals between the ages of 8-15 years with a substantiated designation of child maltreatment, (2) fluency in English, (3) a parent/caregiver who has had custody of the participant for 6 months or longer and was not the perpetrator of maltreatment, (4) participant placement in a stable caregiving environment for at least 6 months, and (5) participants taking

psychotropic medication need to have taken that medication without change in dosage for two months or longer. Exclusion criteria include individuals with active suicidal/homicidal ideation or active psychiatric disorder.

Caregivers accompanied their children to provide informed consent upon arrival for their research appointments. As no participants in this study were of legal age to provide consent for research, a caregiver with legal custody of the child signed a parental permission form and child assent was obtained for all participants before data were collected. Each family attended one appointment, which lasted approximately 120 minutes. Families were compensated $40 for their time and travel to complete the study.

Measures

Adverse Childhood Experiences (ACE). ACEs, or cumulative childhood traumas, were measured using the Comprehensive Trauma Interview-Screen (CTI-Screen). This is a 22-item self-report assessment of the child's exposure to a wide range of traumatic events and adversities that are common in childhood and adolescence. Children are asked to respond to each question by indicating "yes" they have experienced the event or "no" they have not (Barnes, Noll, Putnam, & Tricket, 2009). This includes questions such as, "Have you ever moved or changed residences that were particularly upsetting to you?" or "Have you ever been hit or beaten, or physically mistreated by any adults?" The CTI-Screen is a widely used instrument that is validated and highly reliable, with exceptional sensitivity in detecting trauma (Shenk, Noll, Peugh, Griffin, & Bensman, in press).

Parenting. Parenting styles were assessed using the Children's Report of Parental Behavior Inventory (CRPBI). It is a 30-item questionnaire that assesses the child's self-report account of the degree of acceptance and control delivered by his/her caregivers. The child is asked to determine whether a set of

descriptive behavior statements are “like”, “somewhat like”, or “not like” their mother and father (Shaefer, 1965). The listed statements describe potential parenting scenarios and describe various parental behaviors. This included statements such as, “My mother is a person who is able to make me feel better when I’m upset” or “My mother is a person who is very strict with me.” This instrument is well established and has been used in research for over 40 years (Fristad & Karpowitz, 1988). The CRPBI results are coded into three measures of parenting: warmth, psychological control, and behavioral control.

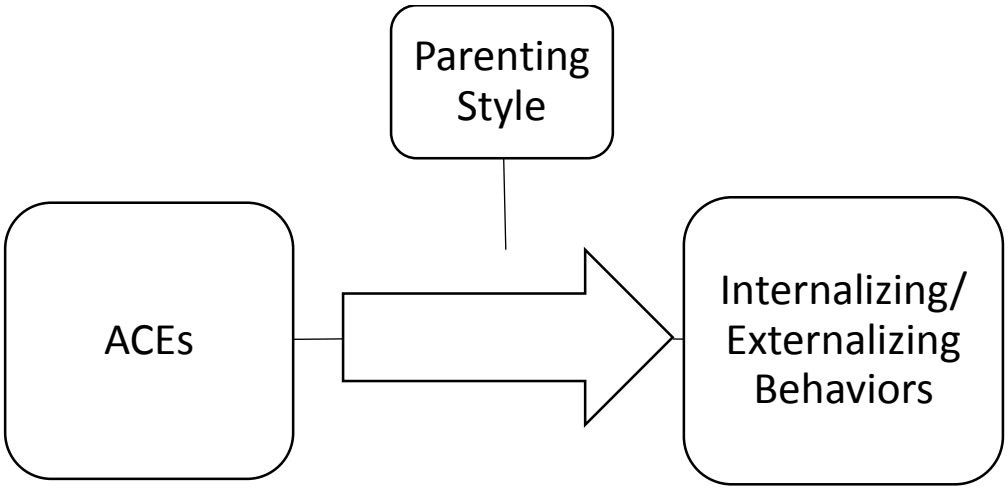
Internalizing and Externalizing Behaviors. Lastly, internalizing and externalizing behavioral outcomes were measured using the Child Behavior Checklist (CBCL). This is a widely used, 113-item caregiver-report measure assessing internalizing and externalizing behaviors as indices of general psychopathology in children (ages 4-18 years) expressed within the last 6 months. Parents are asked to respond to statements regarding their child’s behavior with a designation of 0=not true, 1=somewhat or sometimes true, and 2=very true or often true. This includes statements such as, your child: “Can’t sit still, is reckless, or hyperactive” or “Would rather be alone than with others” (Achenbach, 1991). Raw scores for internalizing and externalizing behaviors obtained from the CBCL were used in subsequent statistical analyses.

Data Analytic Strategy

Statistical analyses were conducted for the participants’ responses to each questionnaire. Descriptive statistics were performed for four measures: (1) frequency counts for the subtypes of child maltreatment (physical abuse, sexual abuse, neglect), (2**)** frequency counts for ACEs; (3) means and standard deviations of internalizing and externalizing behaviors from the CBCL; and (4) means and standard deviations of the three parenting characteristics of interest (warmth, psychological control, and behavioral control). Next, correlations among study-related variables were examined to identify parameters for inclusion in a subsequent hierarchical regression model. Hierarchical regression analyses

were utilized to examine whether or not various parenting domains measured with the CRPBI moderated the relationship between ACEs and subsequent internalizing and externalizing behaviors.

Figure 1. Moderating Relationship



Chapter 3

Results

Descriptive Statistics

Descriptive statistics were conducted for demographic variables and revealed the sample to be 67.2% minority (African American 53.1%, Hispanic 1.6%, Multiracial 7%, Other 1.6%), 62.1% single parent household, and 51.5% income under $10,000/year. Mean participant raw scores for internalizing behaviors were M = 11.53, SD = 8.58 and externalizing behaviors were M =14.85, SD = 10.58, with higher scores indicating a greater severity of behavior problems. Parenting behaviors were designated as follows: Warmth, M = 25.48, SD = 3.71; Behavioral Control, M = 19.05, SD = 3.14; Psychological Control, M = 19.00, SD = 4.32. Frequencies for child maltreatment were: Sexually abused, n = 26; Physically abused, n = 32; Neglected n = 6. Participants had each experienced an average of 7 traumas throughout their lives, with a minimum of 1 trauma (i.e. participant was only maltreated) and a maximum of 15 (i.e. participant experienced all types of trauma). For a detailed review of the frequencies for each trauma type from the CTI-Screen, reference Table 5.

Zero-Order Correlations

Correlations were performed to determine which significant relationships existed amongst the variables of interest. First, demographic analyses revealed that minority status (Minority = 1; White = 0) was moderately negatively correlated with internalizing behaviors (r = -.31, p < .05) and sex (Female = 1; Male = 0) was moderately negatively correlated with parental behavioral control (r = -.27, p < .05). Next, internalizing and externalizing behaviors showed a strong correlation with one another (r = .55, p < .01).

A moderate negative correlation was evident between externalizing behaviors and parental warmth (r = -.32, p < .05). Two measures of parenting, behavioral control and psychological control, were significantly correlated (r = .48, p < .01). Finally, ACEs were strongly correlated with externalizing behaviors (r = .39, p < .01) and moderately negatively correlated with parental warmth (r = -.31, p < .05). See Table 1 for full results. Demographic and parenting variables correlating significantly with internalizing and externalizing behaviors were then selected for inclusion in the hierarchical regression model.

Table 1. Pearson's Correlations

	Intern	*Extern*	*MWTOT*	*MPTOT*	*MBTOT*	*CTI*	*Minority*	*Sex*
Intern	–							
Extern	0.55**	–						
MWTOT	-0.05	-0.33*	–					
MPTOT	-0.19	0.12	-0.15	–				
MBTOT	-0.13	-0.07	0.13	0.48**	–			
CTI	0.33*	0.39**	-0.31*	-0.12	-0.08	–		
Minority	-0.31*	-0.10	0.10	0.02	0.13	-0.11	–	
Sex	0.00	-0.11	-0.17	-0.23	-0.27*	0.03	-0.09	–

Note. CTI represents cumulative ACES scores from the Comprehensive Trauma Inventory-Screen (CTI-Screen). MWTOT represents maternal warmth total scores, MPTOT represents maternal psychological control total scores, and MBTOT represents maternal behavioral control total scores from the Children's Report of Parental Behavior Inventory (CRPBI). Intern and Extern represent Internalizing and Externalizing behaviors, respectively, as calculated using the Child Behavior Checklist (CBCL). Minority represents the Minority Status variable, which includes a compilation of all races other than Caucasian (African-American, Hispanic, Multiracial, and Other).

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

Hierarchical Regression

Internalizing Behaviors. In Step 1, the independent variables CTI, Maternal Warmth, and Minority Status were entered as a block in the first model of the hierarchical regression analysis to assess the degree of variance accounted for by these variables in relation to the total internalizing behavior symptoms. Minority status was included as a covariate because it was significantly correlated with the predictor variables (see Table 1). This first block of variables yielded significant results, $F(3,54) = 4.07$, $p = .01$, accounting for 19% of variance in total internalizing symptoms. As noted in Table 7, CTI scores and Minority Status were significant individual contributors to this model.

In Step 2, a second model was created that added the interaction variable (representing the interaction between CTI and Maternal Warmth) to the Step 1 model to assess whether this relationship accounted for a significant amount of additional variance in total internalizing symptoms. This second model did not yield significant results, $F(4,54) = 3.29$, $p = .33$. Minority Status remained a significant individual contributor to this model.

Externalizing Behaviors. In Step 1, the same variables used for the previous regression (CTI, Maternal Warmth, and Minority Status) were entered as a block in the first model of this next hierarchical regression analysis, which assessed the variance these variables accounted for in relation to total externalizing behavior symptoms. Again, this first block of variables produced significant results, $F(3,54) = 4.35$, $p = .008$ accounting for 20% of variance in total externalizing symptoms. As noted in Table 8, CTI was a significant individual contributor to this model.

In Step 2, the interaction variable representing the relationship between CTI and Maternal Warmth was added to the Step 1 model to assess the whether or not that relationship accounted for a significant increase in variance of externalizing symptoms. This second model did not produce significant results, $F(4, 54) = 3.31$, $p = .55$ and none of the included variables yielded significant individual

contributions.

Table 2. Demographics

	M (SD) or N (%)
Average Age	11.38 (2.3)
Male	22 (34.4)
Female	42 (65.6)
Caucasian	21 (32.8)
Minority Status	43 (67.2)
Single Parent Household	41 (62.1)
Income Under $10,000/year	34 (51.5)

Note. Minority Status variable includes a compilation of all races other than Caucasian (African-American, Hispanic, Multiracial, and Other).

Table 3. Type of Maltreatment

	N (%)
Physical Abuse	32 (50.0)
Sexual Abuse	26 (40.6)
Neglect	6 (9.4)

Note. All participants experienced at least one of the above forms of child maltreatment.

Table 4. Average Internalizing/Externalizing Behaviors (Raw Scores)

	M (SD)
Internalizing Behavior Problems	11.53 (8.58)
Externalizing Behavior Problems	14.85 (10.58)
Total Behavior Problems	44.80 (26.10)

Note. Behavior reports based on cumulative scores taken from Child Behavior Checklist (CBCL).

Table 5. Average Levels of Parenting Behaviors

	M (SD)	*Minimum*	*Maximum*
Maternal Warmth	25.48 (3.71)	16.00	30.00
Maternal Behavioral Control	19.05 (3.14)	13.00	27.00
Maternal Psychological Control	19.00 (4.32)	11.00	27.00

Note. Parenting behaviors reported from Children's Report of Parental Behaviors Inventory (CRPBI). Higher scores indicate stronger expression of behavior.

Table 6. Types of Traumas

	N (%)
Average # of Traumas	6.82
Moved/Changed Residences That Was Upsetting	25 (39.1)
Someone Close Moved Away From Subject	37 (57.8)
Someone Close to Subject Very Sick or Died	41 (64.1)
Subject Very Sick	20 (31.3)
Subject Gone Through Painful/Scary Medical Procedure	27 (42.2)
Subject Ever Run Away From Home	5 (7.8)
Social Worker Ever Come Talk With Subject About Things Going on in the Family	31 (48.4)
Ever Times Subject Didn't Have Clean Clothes/ Enough to Eat/Place to Sleep	7 (10.9)
Subject Ever Been Given Drugs or Alcohol by Adults	5 (7.8)
Ever Times When Adults Put Subject Down or Said Insulting Things to Subject	23 (35.9)
Ever Times When Subject Saw or Heard Adults That Take Care of Him/Her Hit/Hurt Each Other Physically	19 (29.7)
Subject Ever Locked in Room or Closet for Long Time	6 (9.4)
Subject Ever Hit or Mistreated by Adults	9 (14.1)
Subject Ever Mugged/Held up/Physically Threatened	18 (28.1)
Subject Try to Hurt Self	8 (12.5)
Subject Ever Cut Self on Purpose	4 (6.3)
Subject Knows Anyone that has been Killed/Attacked/Badly Hurt by Someone	28 (43.8)
Subject Ever Witness Serious Accident	29 (31.3)
Subject Ever Experience Any Natural Disaster	6 (9.4)
Anyone Ever done or Tried to do Something Sexual to Subject that they Didn't Want	20 (31.3)
Anyone in Subjects Family Ever Have Unwanted Sexual Experience	9 (14.1)
Anyone Else Subject Knows that has had Unwanted Sexual Experience	14 (21.9)

Table 7. Hierarchical Linear Regression Model for Internalizing Behaviors

Variable	***B***	***SE***	***t***	***95% CI***	R^2	$R^2\Delta$
Step 1					0.19	0.19*
CTI	0.88*	0.35	2.51	0.18 – 1.59		
Maternal Warmth	0.22	0.31	0.70	-0.41 – 0.85		
Minority Status	-5.22*	2.34	-2.23	-9.92 – -0.52		
Step 2					0.21	0.02
CTI * Maternal Warmth	0.11	0.11	0.98	-0.11 – 0.33		

Note. CTI represents cumulative trauma scores from the Comprehensive Trauma Inventory-Screen (CTI-Screen).

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

Table 8. Hierarchical Linear Regression Model for Externalizing Behaviors

Variable	*B*	*SE*	*t*	*95% CI*	R^2	$R^2\Delta$
Step 1					0.20	0.20*
CTI	1.04*	0.43	2.41	0.17 – 1.90		
Maternal Warmth	-0.67	0.39	-1.75	-1.45 – 0.10		
Minority Status	-0.73	2.87	-0.26	-6.49 – -5.03		
Step 2					0.21	0.01
CTI * Maternal Warmth	0.08	0.35	0.60	-0.19 – 0.35		

Note. CTI represents cumulative trauma scores from the Comprehensive Trauma Inventory-Screen (CTI-Screen).

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

Chapter 4

Discussion

The purpose of this study was to analyze the moderating role of parenting on the relationship between Adverse Childhood Experiences (ACEs) and the development of either internalizing or externalizing behaviors in the child maltreatment population. Using hierarchical regression analyses, ACEs were shown to be a significant predictor for both of the outcome variables. It can therefore be inferred that there exists a dose-response relationship in this case, such that exposure to a higher number of traumas in childhood influences a greater likelihood of subsequent internalizing and externalizing behavior expressions. This result follows logically because the sample in this case consisted of exclusively maltreated individuals and research to date has shown that maltreatment experienced concurrently with ACEs yields more serious outcomes (Dube et al., 2001).

Correlation analyses revealed four interesting components to this study. First, maternal warmth was significantly negatively correlated with externalizing behavior. This indicates that children who have warm caregivers, regardless of past trauma exposure, exhibit fewer externalizing behaviors. In the hierarchical regression analysis, maternal warmth showed a marginally significant (p = .09) relationship to externalizing behaviors. One explanation for this phenomenon regards the parents' response to their children after trauma exposure. Perhaps warmer parents are more attentive to their children following incidences maltreatment or trauma exposure, thus fostering a comfortable home environment in which the child may freely utilize his/her parental support in order to deal with negative emotions in a positive way. In turn, these children are less likely to develop externalizing behavior problems in response to adversity. This example is characteristic of the authoritative parenting style, which is characterized by warm and responsive parenting (Baumrind, 1991). In turn, the hypothesis that children with authoritative parents will demonstrate fewer externalizing behavior problems following trauma exposure was supported. However, this was not the case for internalizing behaviors, as no significant relationship was reported. In

addition, having a caregiver that demonstrated high levels of psychological or behavioral control did not influence a greater likelihood of developing internalizing or externalizing behaviors after trauma exposure, as was initially hypothesized.

Second, the measures of maternal behavioral control and maternal psychological control were highly correlated with one another. It follows that parents who characteristically utilize behavioral control will have a greater likelihood of utilizing psychological control in their parenting practices as well, and vice versa. This finding may have significant implications for parent sensitivity training or counseling interventions. For instance, families that are seeking intervention to reduce parental behavioral control may also benefit from interventions that target psychological control.

Third, highly significant correlations were presented between ACEs and internalizing/externalizing behaviors. This result was maintained in both regression analyses. Consistent with the research to date, the greater number of traumas a child has encountered, the greater his or her likelihood of developing internalizing and externalizing behaviors as a result (Lansford et al., 2002; Thornerry, Ireland, & Smith, 2001; Fergusson, Boden, & Horwood, 2008). Perhaps this finding will influence future methods of prevention for children exposed to trauma by focusing efforts specifically on the deterrence of these behaviors.

Fourth, maternal warmth was significantly negatively correlated with ACEs. We can interpret this to mean that having a warm caregiver can act as a protective factor that diminishes an individual's likelihood of being exposed to ACEs. One reason for this may be that parents who are characteristically warm are more attentive and available to their children and, as a result, it is more likely that these parents will do their best to prevent their children's exposure to ACEs. Insight from this finding may inform future methods of prevention. For example, families from high-risk neighborhoods or demographics may benefit from parent sensitivity training that will foster warmth in parent-child interactions, which may in turn prevent childhood exposure to traumatic events.

Interestingly, minority status produced significant results with regard to behavioral outcomes. After finding strong initial correlations between minority status and the outcome variables, it was included as a predictor in the regression analyses. Consequently, across all regression analyses for internalizing behaviors, minority status maintained its significance, such that minorities were less likely in this sample to develop internalizing behaviors. This points to a protective quality of belonging to a minority racial group that research has not until this point highlighted.

Despite the overall strength of this study, there exist several limitations that must be acknowledged. First, the sample size was relatively small, which may account for some of the discrepancies between the initial correlation analyses and final regression models. Future studies conducted with larger sample sizes may feasibly yield more significant results. Second, this study did not have an entirely representative sample of the overarching population. The majority of the sample reported living in a single parent household that had a yearly income of less than $10,000. Further, this sample included very few neglected children, which made it difficult to determine any differences amongst outcomes based on type of maltreatment. Finally, in order to truly determine the long-term effects of cumulative trauma exposure and the influence of parenting on the development of behavior problems, a longitudinal framework is recommended for future studies. This report could not conclusively make assumptions about long-term effects after collecting data on only one occasion per family.

This project considered the implications its findings may have from a prevention standpoint. Results uncovered some important associations between parental warmth and child behavioral outcomes, as well as likelihood of trauma exposure, which characterize parental warmth as a protective factor. This is consistent with findings from Miliotis, Sesma, and Masten (1999), who explain that good parenting characterized by warmth and support influences better child outcomes. It follows that future methods for the prevention of behavior problems should focus on the promotion of warmth in parent-child relationships. In doing so, professionals may be able to deter child maltreatment and trauma exposure from occurring and, if exposure occurs, they may further be able to successfully intervene to prevent

adverse behavior outcomes in victims. However, there remains a crucial need to continue this research and determine the critical pathways between childhood trauma exposure and behavioral outcomes in order to better inform future methods of prevention and intervention in the maltreated population

REFERENCES

Achenbach, T. (1991). Integrative guide for the 1991 CBCL/4-18, YSR, and TRF profiles. *Department of Psychiatry,* University of Vermont.

Barnes, J., Noll, J., Putnam, F., & Tickett, P. (2009). Sexual and physical revictimization among victims of severe childhood sexual abuse. *Child Abuse & Neglect, 33*(7), 412-420, doi:10.1016/.chiabu.2008.09.013

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *The Journal of Early Adoelscence, 11*(1), 56-95, doi:10.1177/0272431691111004

Buehler, C., Benson, M., & Gerard, J. (2006). Interparental hostility and early adolescent problem behavior: The mediating role of specific aspects of parenting. *Journal of Research on Adolescence, 16*(2), 265-292.

The Child Abuse and Prevention and Treatment Act (CAPTA) Reauthorization Act of 2010, 42 U.S. Code Chapter 67 – Child Abuse Prevention and Treatment and Adoption Reform (42 U.S.C. 5101 et seq; 42 U.S.C. 5116 et seq.).

Center for Children's Health. (2012). Strengthening our families: Risk and protective factors of child abuse. Retrieved on September 22, 2015 from http://www.centerforchildrenshealth.org/SiteCollectionDocuments/Counties/Hood%20County/RiskProtectiveFactors%20of%20Child%20Abuse.pdf

Colman, I., Wadsworth, M., Croudace, T., & Jones, P. (2007). Forty-year psychiatric outcomes

following assessment for internalizing disorder in adolescence. *The American Journal of Psychiatry, 164*(1), 126-133.

Domestic Relations Code, Act 108, 23 PA. C.S. § 63-6303 (2013).

Domestic Relations Code, Act 33, 23 PA. C.S. § 63-6311 (2014).

Dube, S., Anda, R., Felitti, V., Chapman, D., Williamson, D., & Giles, W. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span. *Jama, 286*(24), 3089-3096, doi:10.1001/jama.286.24.3089

Fang, X., Brown, D., Florence, C., &Mercy, J. (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse & Neglect, 36*(2), 156-165, doi:10.1016/j.chiabu.2011.10.006.

Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., Koss, M., & Marks, J. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. *American Journal of Preventative Medicine, 14*(4), 245-258, doi:10.1016/S0749-3797(98)00017-8

Fergusson, D., Boden, J., & Horwood, J. (2008). Exposure to childhood sexual and physical abuse and adjustment in early adulthood. *Child Abuse and Neglect, 32*(6), 607-619, doi:10.1016/j.chiabu.2006.12.018

Ford, J., Racusin, R., Daviss, W., Ellis, C., Thomas, J., Rodgers, K., Reiser, J., Schiffman, J., & Sengupta, A. (1999). Trauma exposure among children with oppositional defiant disorder and attention deficit-hyperactivity disorder. *Journal of Consulting and Clinical*

Psychology, 67(5), 786-789, doi:10.1037/0022-006X.67.5.786

Fristad, M., Karpowiz, D. (1988). Norms for the children's report of parental behavior inventory-Modified form. *Psychological Reports, 62*(2), 665-666.

Heim, C. & Nemeroff, C. (2001). The role of childhood trauma in the neurobiology of mood and anxiety disorders: Preclinical and clinical studies. *Biological Psychiatry, 49*(12), 1023-1039, doi:10.1016/S0006-3223(01)01157-X

Herman, J., Perry, C., Van der Kolk, B. (1989). Childhood trauma in borderline personality disorder. *American Journal of Psychiatry, 146*(4), 490-195.

Kendall-Tackett, K., Williams, L., & Finklehor, D. (1993). Impact of sexual abuse on children: a review and synthesis of recent empirical studies. *Psycholocial Bulletin, 113*(1), 1-64.

Kessler, R., Chiu, W., Demier, O., & Walters, E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62*(6), 617-627, doi:10.1001/archpsyc.62.6.617

King, S., Iacono, W., & McGue, M. (2004). Childhood externalizing and internalizing psychopathology in the prediction of early substance use. *Addiction, 99*(12), 1548-1559, doi:10.1111/j.1360-0443.2004.00893.x

Lansford, J., Dodge, K., Pettit, G., Bates, J., Crozier, J., & Kaplow, J. (2002). A 12-year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence. *Archives of Pediatric Adolescent Medicine, 156*(8), 824-830, doi:10.1001/archpedi.156.8.824

Miliotis, D., Sesma, A., & Masten, A. (1999). Parenting as a protective process for school success in children from homeless families. *Early Education and Development, 10*(2), 111-133, doi:10.1207/s15566935eed1002_2

Molnar, B., Buka, S., & Kessler, R. (2001). Child sexual abuse and subsequent psychopathology: Results from the national comorbidity survey. *American Journal of Public Health, 91*(5), 753-760.

Reef, J., Diamantopoulou, S., Van Meurs, I., Verhulst, F., & Van der Ender, J. (2011). Developmental trajectories of child to adolescent externalizing behavior and adult DSM-IV disorder: Results of a 24-year longitudinal study. *Social Psychiatry and Psychiatric Epidemiology, 46*(12), 1233-1241, doi:10.1007/s00127-010-0297-9

Sarchiapone, M., Carli, V., Cuomo, C., Marchetti, M., & Roy, A. (2009). Association between childhood trauma and aggression in male prisoners. *Psychiatry Research, 165*(1-2), 187-192, doi:10.1016/j.psychres.2008.04.026

Schaefer, E. (1965). Children's reports of parental behavior: An inventory. *Child Development, 36*(2), 413-424.

Shaffer, D., Fisher, P., Lucas, C., Dulcan, M. & Schwab-Stone, M. (2000). NIMH diagnostic interview schedule for children version IV (NIMH DISC-IV): Description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child and Adolescent Psychiatry, 39*(1), 28-38.

Schludermann, S. (1988). Shortened child report of parental behavior inventory (CRPBI-30):

Schludermann Revision. *Unpublished manuscript*, University of Manitoba, Winnipeg, Manitoba, Canada.

Shenk, C., Noll, J., Peugh, J., Griffin, A., & Bensman, H. (2015). Contamination in the prospective study of child maltreatment and female adolescent health. *Journal of pediatric psychology*, doi:10.1093/jpepsy/jsv017

Steinberg, L., Lamborn, S., Drling, N., Mounts, N., & Dornbusch, S. (1994). Over-time changes in adjustment and competence among adolescents from authoritative, authoritarian, indulgent, and neglectful families. *Child Development, 65*(3), 754-770, doi:10.1111/j.1467-8624.1994.tb00781.x

Thornberry, T., Ireland, T., & Smith, C. (2001). The importance of timing: The varying impact of childhood and adolescent maltreatment on multiple problem outcomes. *Development and Psychopathology, 13*(4), 957-979.

US Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2015). *Child maltreatment 2013*. Available from http://www.acf.hhs.gov/programs/cb/research0data-technology/statistics-research/child-maltreatment

Yanos, P., Czaja, S., & Widom, C. (2010). A prospective examination of service use by abused and neglected children followed up into adulthood. *Psychiatric Services, 61*(8), 796-802.

Yehuda, R., Halligan, S., & Grossman, R. (2001). Childhood trauma and risk for PTSD: Relationship to intergenerational effects of trauma, parental PTSD, and cortisol excretion.

Development and Psychopathology, 13(3), 733-753

Academic Vita

Jordan Laporta

Jlaporta5@gmail.com

Education

B.S., Human Development and Family Studies, 2016, Pennsylvania State University
Minor in Health Policy and Administration
Honors in Human Development and Family Studies, Schreyer Honors College

Thesis

Title: The Moderating Effect of Parenting Style on the Relationship Between Childhood Trauma Exposure and the Development of Internalizing vs. Externalizing Behaviors
Thesis Supervisor: Dr. Chad Shenk

Research Experience

- *Research Assistant* to Dr. Chad Shenk for the Life Events and Reactions Study (LEARS), Fall 2014-Spring 2016
- *Research Assistant* to Dr. Jennifer Zosh for the Brandywine Child Development Lab, Summer 2014

Leadership

- *President of Human Rights Brigades*, lead bi-monthly chapter and Executive Board meetings, organize free legal clinics in Panamanian communities, facilitate human rights discussions amongst members

  Spring 2015-2016
- *Key Holder at Metro Clothing Store*, supervise 20 employees, administer evaluations, conflict resolution, delegate daily tasks

  December 2014-2015
- *Learning Empowerment Academic Program (LEAP) Mentor*, mentor to incoming freshman at Pennsylvania State University

  Summer 2014

Awards

- Dean's List: Fall 2012, Spring 2013, Spring 2014, Fall 2014, Spring 2015, Fall 2015

Community Service Involvement:

- *Executive Board Member to Penn State Global Brigades*, service organization involved in initiatives to foster sustainable development in both local and international communities