

1-1-2015

Effects of Foster Care Placements on the Mental Health of Abused Children in Florida

Sarah M. Nelson

Nova Southeastern University, snelson1986@gmail.com

This document is a product of extensive research conducted at the Nova Southeastern University [College of Psychology](#). For more information on research and degree programs at the NSU College of Psychology, please [click here](#).

Follow this and additional works at: http://nsuworks.nova.edu/cps_stuetd



Part of the [Psychology Commons](#)

Share Feedback About This Item

NSUWorks Citation

Nelson, S. M. (2015). Effects of Foster Care Placements on the Mental Health of Abused Children in Florida. .
Available at: http://nsuworks.nova.edu/cps_stuetd/88

This Dissertation is brought to you by the College of Psychology at NSUWorks. It has been accepted for inclusion in College of Psychology Theses and Dissertations by an authorized administrator of NSUWorks. For more information, please contact nsuworks@nova.edu.

**EFFECTS OF FOSTER CARE PLACEMENTS ON THE MENTAL HEALTH OF
ABUSED CHILDREN IN FLORIDA**

by

Sarah M. Nelson

A Dissertation Presented to the School of Psychology
of Nova Southeastern University
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

NOVA SOUTHEASTERN UNIVERSITY
2015

APPROVAL PAGE

This dissertation was submitted by Sarah Nelson under the direction of the Chairperson of the dissertation committee listed below. It was submitted to the School of Psychology and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology at Nova Southeastern University.

Approved:

2/19/15
Date of Defense


Jan Faust, Ph.D., A.B.P.P., Chairperson


Ryan Black, Ph.D.


Barry Nicrenberg, Ph.D., A.B.P.P.

2/27/15
Date of Final Approval


Jan Faust, Ph.D., A.B.P.P., Chairperson

ACKNOWLEDGEMENTS

I would like to thank my dissertation chair and faculty advisor, Dr. Jan Faust for her guidance, encouragement, and trust throughout my graduate studies, including the dissertation process. She has been a role model, mentor, and friend throughout these past few years and I will always be appreciative of her positive encouragement and willingness to help me explore my interests and abilities. I would also like to thank my committee members. I would first like to thank Dr. Ryan Black for assisting me with the statistical portion of this study. I would also like to thank Dr. Barry Nierenberg, who has significant expertise on this topic, and has always shown an inclination to offer a helping hand. Finally, I would like to thank my parents, Ted and Betsy, my significant other, Mike Koren, my sisters Melinda and Karen, and my brother Sam. No matter what happens, their support and encouragement have allowed me to take this process one step at a time, not take life too seriously, live in the moment, and always be grateful for the gifts that I possess.

TABLE OF CONTENTS

LIST OF TABLES	vi
LIST OF FIGURES	vii
ABSTRACT	viii
CHAPTER I: STATEMENT OF THE PROBLEM	1
CHAPTER II: REVIEW OF THE LITERATURE	3
The Current State of the Foster Care System	3
Mental Health Functioning and Treatment of Children in Foster Care	5
Positive Outcomes in the Foster Care System	7
Summary, Purpose, and Hypotheses	8
CHAPTER III: METHOD	10
Participants	10
Procedure	11
Measures	12
Measures of Background Information	12
Demographic Questionnaire	12
Measures of Child Functioning, Self-Report	12
CDI	12
RCMAS	12
Measures of Child Functioning, Parent-Report	13
CBCL	13
Measures of Parent/Guardian Functioning, Self-Report	13
PSI-3	13
BDI-2	13
Family Measures	13
FES	14
Data Analysis	14
CHAPTER IV: RESULTS	16
Preliminary Analyses	16
Multiple Regression	17
Child Depression	18
Child Anxiety	18
Parent Report of Child Internalizing Symptoms	18

Parent Report of Child Externalizing Symptoms	19
Family Conflict	21
Parenting Stress	21
Parental Depression	22
CHAPTER V: DISCUSSION	24
Moderated Multiple Regression	24
Significance of Main Effects	26
Study Strengths	27
Study Limitations	28
Future Directions	28
REFERENCES	31
APPENDICES	37
Residual Scatterplots for Regression Models	37

LIST OF TABLES

Table 1:	Participant Demographics at Intake (N=234)	10
Table 2:	Descriptive statistics for children with a history of foster care (n=54)	16
Table 3:	Descriptive statistics for children without a history of foster care (n=180)	17
Table 4:	Regression coefficients for child depression	18
Table 5:	Regression coefficients for child anxiety	18
Table 6:	Regression coefficients for child internalizing symptoms	19
Table 7:	Post hoc regressions for child internalizing symptoms	19
Table 8:	Regression coefficients for child externalizing symptoms	20
Table 9:	Post hoc regressions for child externalizing symptoms	20
Table 10:	Regression coefficients for family conflict	21
Table 11:	Regression coefficients for parenting stress	22
Table 12:	Post hoc regressions for parenting stress	22
Table 13:	Regression coefficients for parental depression	23
Table 14:	Post hoc regressions for parental depression	23

LIST OF FIGURES

Figure 1:	Residual scatterplot for CDI	37
Figure 2:	Residual scatterplot for RCMAS	38
Figure 3:	Residual scatterplot for internalizing symptoms	39
Figure 4:	Residual scatterplot for externalizing symptoms	40
Figure 5:	Residual scatterplot for family conflict	41
Figure 6:	Residual scatterplot for parenting stress	42
Figure 7:	Residual scatterplot for parent depression	43

**EFFECTS OF FOSTER CARE PLACEMENTS ON THE MENTAL HEALTH OF
ABUSED CHILDREN IN FLORIDA**

by

Sarah M. Nelson, M.S.

Nova Southeastern University

ABSTRACT

INTRODUCTION: As evidenced in the literature, when maltreated children are admitted into state care, they are frequently not afforded sufficient mental health treatment. Concomitantly, foster parents are often not given proper training in providing complex care for these children. As such, the current study aimed to examine the role that foster care has in the development of psychopathology in maltreated children and their caregivers. **METHODS:** Participants included 234 maltreated youths (ages 7 to 17) presenting for treatment at a community mental health center specializing in childhood trauma. Children and adolescents currently residing in foster care as well as in their biological home environments were included. **RESULTS:** Results of multiple regression models indicated that a history of foster care plays a significant role in the association between children and adolescents who have witnessed domestic violence and internalizing disorders, externalizing disorders, and parenting stress. **DISCUSSION:** Results from this study revealed that a lack of foster care history plays a significant role in moderating the development of psychopathology in children and adolescents who have witnessed domestic violence. This association was also found with parenting stress. Future research needs to further explicate the specific roles that a child's living situation can play in future psychological impairment.

CHAPTER I

Statement of the Problem

Foster care within this country has been a long and enduring system designed as a protection or safeguard for children who are no longer able to stay within their biological home environment (for various reasons). Although many children benefit greatly from the services that these state agencies provide, many appear to suffer marginalization with inadequate care or support (both mental and physical). This may lead to various ill effects, placing more of a burden on the foster care system in order to provide them greater care. Of particular interest, evidence indicates that a large majority of children entering into foster care are coming from environments of abuse (e.g., physical, sexual, etc.), and may require significantly more services than children entering foster care for other reasons. Steps need to be taken, specifically for children who have suffered abuse, to streamline and improve the process of foster care placement, in order to protect not only their physical wellbeing, but their future emotional and mental wellbeing as well.

The current study aimed to examine the negative effects that foster care placements have on the developing child. Specifically, children who have suffered various abuse (e.g., sexual, physical, etc.) before being placed in foster care are of particular interest. It was predicted that children who have been abused and are currently in foster care would exhibit more significant levels of psychosocial issues (e.g., depressive symptoms, anxiety symptoms, externalizing symptoms), when compared to children who have been abused and do not have a history of foster care placements. Furthermore, it was predicted that the foster care environments would reveal greater levels of conflict, caregiver depression, and parenting stress than kinship or biological home environments. Results from this study served to both highlight the role that

placement into foster care plays on the vulnerable child, as well as the particular need for the identification of abused children in foster care in order to provide them with greater care.

CHAPTER II

Review of the Literature

The Current State of the Foster Care System

Recent estimates indicate that approximately 400,540 children are in the foster care system within the United States, with nearly 50% residing in nonrelative foster family homes. Data also indicate that the most common length of stay for children while in foster care is between one and 11 months (Child Welfare Information Gateway, 2013). While specific guidelines vary across different states, the majority of children enter foster care from situations of abuse or neglect. Other reasons for foster care placement include severe behavioral problems, parental issues, abandonment, severe physical or emotional illness without proper care, parental incarceration, substance abuse, and death (Academy of Child and Adolescent Psychiatry, 2005).

These statistics indicate that a significant population of children entering the foster care system are already diagnosed, or hold a significant future risk for the development of psychopathology. Aside from the already diagnosed psychopathology, significant evidence indicates that children who have been abused, or come from tumultuous home environments are more likely to exhibit behavioral and emotional problems in the future (Dube, Anda, Felitti, Chapman, Williamson, & Giles, 2001; Weaver & Clum, 1993). With this in mind, many foster parents come ill-equipped to handle children with extensive emotional or physical needs. Research indicates that a significant number of individuals both within and outside of the foster care community express concerns that foster parents are often not genuinely invested in being a foster parent, express low levels of commitment towards care and may be licensed within the program for only the monetary incentives (Berrick, 1997; Dozier, 2005). Exacerbating this issue, as many children when they enter foster care lack a history of caring or loving relationships,

these children may not hold the capacity to develop a strong attachment with any new caregivers (Simms, Dubowitz, & Szilagy, 2000). Evidence also suggests that foster children with behavioral problems placed in “nonkinship” (i.e., with non-biological foster parents) are more likely to experience disruptions in care, with more frequent changes in placement (Barber, Delfabbro, & Cooper, 2001; Chamberlain, Price, Reid, Landsverk, Fisher, & Stoolmiller, 2006). As many children often initially respond to their placement in foster care with depression, anger, or aggression (Simms, et al., 2000), the first few months are critical in developing a long lasting and secure placement. Due to the strong and continued support that many foster parents require in situations such as these are often not available, it stands to reason that a placement with a child who has behavioral or emotional problems would potentially fail.

In terms of requirements for licensure, although varying widely by state, most criteria fall significantly short in assessing a potential family’s foster environment ability to adequately care for a child. Research indicates that most licensing standards for foster parents generally include no more than a baseline assessment of environmental safety and level of supervision, and not include an assessment of the parent’s ability to provide sufficient day-to-day treatment and care (Shlonsky & Berrick, 2001). Data also indicate that many agencies may be suffering foster parent dropout due to lack of monetary funds, and inadequate training (Rhodes, Orme, & Buehler, 2001). In terms of quality of care, review of the literature has revealed that foster parents, mothers specifically, frequently exhibit higher scores of parenting stress and more negative scores on attitudes towards child-rearing (Orme & Buehler, 2001). With the foster care system prevailing as a significant residential placement for maltreated children, the quality of care and more specifically, the qualifications of those expected to provide the care, should be

examined. More research is needed in order to fully address these issues. The current study investigated the significant psychosocial effect that these environments have on abused children.

Mental Health Functioning and Treatment of Children in Foster Care

Review of the literature has indicated that 94% of older youths who had been in the foster care system utilized mental health care at one point in their lives, with exceptionally high rates observed in individuals having utilized inpatient psychiatric treatment (42%) or other residential treatment, including group homes (77%) (McMillen, Scott, Zima, Ollie, Munson, & Spitznagel, 2004). Evidence also indicates that as high as 57% of children in the foster care system hold a diagnosis of at least one mental illness (dosReis, Zito, Safer, & Soeken, 2001). After children return home from foster care (i.e., reunification), they are significantly more likely to be arrested, drop out of school, receive lower grades, experience internalizing problems (i.e., depression, anxiety), and other behavior problems (Taussig, Clyman, & Landsverk, 2001). Similarly, instability in foster care placement (e.g., multiple placements) has been repeatedly shown to be detrimental to the overall behavioral outcomes of children in foster care (cf: Newton, Litrownik, & Landsverk, 2000; Rubin, O'Reilly, Luan, & Localio, 2007). In terms of utilization of mental health care, the literature suggests that children who experience multiple placements and/or episodic foster care are significantly more likely to use mental health services within the first year in foster care (Rubin, Alessandrini, Feudtner, Mandell, Localio, & Hadley, 2004). As 50% of foster care children are placed in nonkinship foster homes, and are more likely to experience this episodic or unstable care (Barber, et al., 2001; Chamberlain, et al., 2006; Child Welfare Information Gateway, 2003), the above evidence indicates that a significant proportion of children in foster care will at one point develop or experience maladaptive behavior and likely require the use of mental health services. Evidence also suggests that children and adolescents in

foster care are significantly more likely to take psychotropic medication for a variety of impairments when compared to other children in low income homes, but not in foster care (Zito, et al., 2008). Particularly interesting, of the children and adolescents who received prescriptions for psychotropic medication, almost half (41%) received up to three different classes of drugs, and approximately 15% received up to four (Zito, et al., 2008).

Related to this, evidence suggests that while children are in foster care, services are not provided even with a demonstrated need. Zima, Bussing, Yang, & Belin (2000) found that while 80% of randomly selected children in foster care were diagnosed with a psychiatric disorder, only 51% of these children actually received mental health services, and only 52% received special education services. In addition, more recent evidence indicates that the mental health care services that are provided to children in foster care are insufficient; this is particularly true for children who have experienced trauma. (Oswald, Heil, & Goldbeck, 2010). A comprehensive review of the literature also revealed shortcomings in the diagnostic criteria of various diagnoses (e.g., Posttraumatic Stress Disorder) for children following trauma (Oswald, et al., 2010). This, while seemingly insignificant, may prove vital in the search for quality care for children in foster care suffering from traumatization. Providing another barrier in the pursuit of proper treatment for children and adolescents in foster care is the idea that even while in state custody, biological parents are often still called upon to provide legal consent for the receipt of mental health treatment (Simms, et al., 2000). The identification and treatment of children deemed at risk for maladaptive development is significant in the fostering of a positive quality of life following cessation of care, or reunification with biological relatives. Furthermore, given the significant population of youths in foster care requiring mental health treatment, ensuring that the proper legal consents are in place for the receipt of mental health treatment should be considered a vital

step in the overall journey of children and adolescents towards finding a new and permanent home.

Positive outcomes in the foster care system. In contradiction, some literature has shown foster care to have a positive impact on these children. Recent studies have indicated that a small population of children, specifically younger children, benefit from longer periods of time in foster care (specifically 12 months or longer) and exhibit significant and positive changes in behavior and IQ, or cognitive functioning (Fanshel & Shinn, 1978; Horwitz, Balestracci, & Simms, 2001). Additionally, when certain services are in place, evidence has indicated more positive outcomes for foster children aging out of the system. For example, trainings, positive support networks, and relevant job experience in care have been found to be associated with adjustments that are positive (Reilly, 2003). Also encouraging, programs pairing children in foster care with adult mentors have been found to provide positive outcomes. Long-term follow-up studies focusing on the outcomes of these mentor relationships indicated significantly more positive and healthy adjustment for adults who experienced this as children, when compared to adults with no positive mentor in their lives while in the foster care system (Ahrens, DuBois, Richardson, Fan, & Lozano, 2008). More research needs to be conducted in order to examine the relevant protective factors for children in foster care. In addition to intervention programs in place, the role that the quality of environment and caregivers needs to be elucidated. The possibility of reverting to baseline (i.e., experiencing a reduction of problematic behavior when removed from more severe environments) from more extreme presentations also needs to be ruled out. With a greater understanding of how these mechanisms interact with the children in the system, more positive outcomes following the receipt of foster care can be observed.

Summary, Purpose, and Hypotheses

The purpose of the present study was to examine the magnitude of risk that foster care placements provide for children who have suffered abuse, in the later development of psychosocial and/or behavioral problems. The literature has highlighted a strong likelihood for children who have been abused to enter into the foster care system. Similarly, evidence has shown that a significant proportion of foster children currently hold a diagnosis of psychopathology. Additionally, multiple studies have shown that children who enter into foster placements suffer a host of ill effects, including insufficient mental health care, and multiple placements with foster parents who may lack proper training or the abilities to handle special needs (both mental and physical). With a greater understanding of the role that foster care plays on the subsequent development or exacerbation of various psychosocial issues in children and adolescents, the immediate quality of care and functioning later in life for these individuals can be greatly improved. In addition, this may lead to a more positive impact on children after leaving or aging out of the foster care system.

As the literature has already explicated a well-established relationship between child abuse and psychosocial impairment, in the current study foster care was examined as a moderator. Baron and Kenny (1986) defined a moderator variable as a variable that impacts the magnitude or trend of the relationship between an independent variable and a dependent variable. Consequently, it was predicted that a history of foster care, specifically in those children and adolescents who have suffered abuse, will significantly moderate the relationship between child abuse and the development of psychosocial impairments, including internalizing (e.g., depression, anxiety) and externalizing (e.g., anger, inattention/hyperactivity) symptoms. In addition, as parent variables and family environment have proven significant in the overall

wellbeing of children and adolescents in foster care, it was predicted that a history of foster care will also moderate the relationship between the experience of abuse and the development of impairment in the parent/guardians and in the family environment of children and adolescents with a history of foster care. Parent/caregiver and familial variables examined included parenting stress levels, parenting depression, and family conflict.

CHAPTER III

Method

Participants

Data for this study were drawn from an archival database. Participants included 234 children and adolescents between the ages of 7 and 17 presenting for treatment at a community mental health center specializing in the treatment of childhood trauma located within a large metropolitan area. Children and adolescents currently residing in foster care ($n=54$) as well as children and adolescents residing in their biological home environments (as a control group) were included in the dataset. Information was gathered regarding each subject's age, socio-economic status, current family environment, race/ethnicity, and abuse history. Children and adolescents of interest were asked to complete various self-report questionnaires designed to measure various facets of their psychosocial functioning and family environment (depending on their age). One parent or guardian of the child of interest was also asked to report on their psychosocial functioning in addition to the family environment. As seen in Table 1, the current population was quite diverse in terms of gender, age, and ethnicity (on par with national statistics, US Census Bureau, 2010). Furthermore, general demographics did not differ significantly between the foster care and the non-foster care populations.

Table 1
Participant demographics at intake (N=234)

<u>Characteristic</u>	<u><i>n</i></u>	<u><i>%</i></u>
Sex		
Male	94	40.2
Female	140	59.8
Age		
7	25	10.7
8	26	11.1
9	24	10.3

10	39	16.7
11	24	10.3
12	22	9.4
13	16	6.8
14	22	9.4
15	21	9.0
16	13	5.5
17	2	0.8
Race/Ethnicity		
Caucasian (non-Hispanic)	147	62.8
Black (non-Hispanic)	45	19.2
Hispanic/Latino	33	14.1
Asian/Pacific Islander	2	0.9
Biracial/Multiracial	6	2.6
Not Reported	1	0.4
Abuse Type		
Intimate Partner Violence (IPV)	31	13.2
Sexual Abuse	88	37.6
Physical Abuse	19	8.1
Sexual Abuse/IPV	29	12.4
Physical Abuse/IPV	10	4.3
Sexual Abuse/Physical Abuse	36	15.4
Physical Abuse/Sexual Abuse/IPV	21	9.0

Procedure

Participants were recruited from a local community mental health center located within a large metropolitan area. Participants were asked to fill-out all measures with someone on study staff, at a separate time than their regularly scheduled therapy sessions. A parent or legal guardian (e.g., foster parent) was asked to complete various measures regarding their own psychosocial functioning and the overall home environment. All study procedures took approximately 45 minutes to finish. The child was asked to fill out measures regarding their own psychosocial functioning. These procedures took approximately 30 minutes. Study staff were available to answer questions. All participants were informed of the limits of confidentiality

within the realm of psychological research and that their participation in the current study would not affect the treatment that they may receive at the institution's clinic.

Measures

Both the child and their respective parent or legal guardian (e.g., foster parent) completed multiple psychosocial and environmental functioning questionnaires.

Measures of background information. A demographic questionnaire was independently designed by researchers in order to ascertain basic demographic information including race/ethnicity, education, age, and gender. Trauma history was also ascertained, and verified by state or protective agency.

Measures of child functioning, self-report.

The Child Depression Inventory (CDI; Kovacs, 1992) was developed as a screening device to measure the intensity and severity of childhood depressive symptoms (for ages 7 to 17). It has 27 self-rated items using a Likert scale, and has five symptom-oriented subscales including negative mood, interpersonal difficulties, negative self-esteem, ineffectiveness, and anhedonia. For the purposes of this study, only the total scale was utilized. The Children's Depression Inventory has been extensively studied and has repeatedly shown internal consistency ranges between 0.71 and 0.87, and strong concurrent and criterion validity, and interrater and test-retest reliability (Kovaks, 1992).

The Revised Clinical Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978) was designed to garner a quick and easy identification of the source and magnitude of a child's anxiety. Scores are thought to be of clinical interest when they are greater than or equal to 60. It is normed for children and adolescents up to age 19 and holds good overall reliability and validity. For the purposes of this study, only the total score was utilized.

Measures of child functioning, parent-report.

The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) was formulated to assess and/or identify behavioral and emotional issues in children and adolescents ages 6-18. It has 120 items on a Likert scale. Questions are grouped into syndromes, with multiple questions from each syndrome added together to provide internalizing and externalizing scales. Psychometric properties indicate excellent test-retest (0.95-1.00) and interrater (0.93-0.96) reliability, and good internal consistency (0.78-0.97). Convergent validity has also been found to be good (Achenbach & Rescorla, 2001). For the purposes of this study, only the internalizing and externalizing scales were utilized.

Measures of parent/guardian functioning, self-report.

The Parenting Stress Inventory-3rd Edition (PSI-3; Abidin, 1995) was designed to assess and/or identify parenting and family characteristics that may contribute to maladaptive functioning in children. It has 120 items on a Likert scale and yields seven child domain scores, eight parent domain scores and a total stress scale. Psychometric data indicate that the PSI-3 holds high internal reliability and validity with scores remaining reliable over time (Berry & Jones, 1995). For the purposes of this study, the total scale was utilized, as only a generalized measure of parenting stress was desired. Reliability coefficients indicated high internal consistency (.96 or greater) for the Total Stress scale (Abidin, 1995).

The Beck Depression Inventory-2nd Edition (BDI-II; Beck, Steer & Brown, 1996) was developed to measure the intensity, severity, and depth of depression in patients with psychiatric diagnoses. Its long form is composed of 21 questions on a Likert scale, each designed to assess a specific symptom common among people with depression. Internal consistency for the BDI

ranges from .73 to .92 with a mean of .86. (Beck, Steer, & Garbin, 1988) Validity estimates also indicate high levels of construct validity (Beck, et al., 1996).

Family measures.

The Family Environment Scale (FES; Moos & Moos, 1994) is a 90-item binary measure, developed to measure social and environmental characteristics of families. The FES is comprised of 10 scales that are representative of different domains of perceived family functioning. Internal consistency reliability estimates for the Form R subscales range from .61 to .78. Authors also report moderate to strong convergent validity and strong discriminative validity. For the purposes of this study and based on the literature, the conflict scale was utilized to assess familial context and functioning. The concept of conflict refers to openly expressed anger and conflict among the family milieu. (Moos & Moos, 1994).

Data Analysis

Analyses were performed on archival data from a local community clinic which routinely collects relevant data on children and adolescents who have been exposed to trauma and have a history of varying home environments including foster care ($N= 54$) and living with biological relatives ($N= 180$). For the purposes of this study, history of foster care was coded dichotomously (0=no, 1=yes) before analyses were conducted. Descriptive statistics on outcome variables for each group were examined, including measures of central tendency (mean) and variability (standard deviation, range). In order to examine the effects that both abuse and foster care have on the identified outcomes, eight multiple regression analyses were employed. Each of the eight multiple regression models included type of abuse (sexual abuse, physical abuse, and witness to domestic violence) history of foster care, and three interaction terms (SexualAbuse by Foster Care, PhysicalAbuse by Foster Care, DomesticViolence by Foster Care) as independent

variables. The interaction terms were utilized in order to evaluate moderation, along with separate post hoc linear regression analyses for children with a history of foster care and children without a history of foster care. Outcome variables included child depression (CDI), child anxiety (RCMAS), internalizing symptoms (CBCL), externalizing symptoms (CBCL), and family environment variables, including parent depression (BDI), parenting stress (PSI), and family conflict (FES). The type one error rate was set at $\alpha=.05$ for the model. For post hoc analyses, in order to maintain the type one error rate of $\alpha=.05$, a Bonferroni correction was applied (i.e., $.05/2=.025$). The assumptions of multiple regression (e.g., homogeneity of variances) were evaluated prior to the analyses. For each model, the following information is provided: Significance of the overall model, proportion of variance explained by the set of predictors (R^2), significance of each of the predictors, and the unique proportion of variance explained by each predictor (sr^2). All data analysis procedures were carried out using SPSSx22.

CHAPTER IV

Results

Preliminary Analyses

Measures of central tendency and variability (*Mean (M)*, *Standard Deviation (SD)*, *Range*) are provided in Tables 2 and 3 with respect to all predictor variables for each group (foster care vs. no foster care). In order to examine the potential for selection bias between groups, several independent samples t-tests were performed. There were no significant differences between groups with respect to basic demographic variables; including gender ($t_{234}=-.728$, $p=.230$) which was coded dichotomously (i.e., males=0, females=1), age ($t_{234}=.559$, $p=.166$), which was continuously coded for number of years, and race/ethnicity ($t_{234}=.267$, $p=.395$), which was coded categorically.

Table 2

Descriptive statistics for children with a history of foster care (n=54)

	<u>M (Mdn)</u>	<u>SD</u>	<u>Range</u>
CDI	53.39	11.71	34-84
RCMAS	51.00	11.55	25-73
CBCL Int.	61.10	13.17	32-84
CBCL Ext.	60.71	15.43	33-93
FES conflict	4.36	1.97	0-8
PSI Total Stress	244.04	43.15	145-364
BDI	9.48	10.37	0-43
Total Family Income	\$46,005 (\$25,268)	\$44,320	0-\$150,000

Table 3

Descriptive statistics for children without a history of foster care (n=180)

	<u>M (Mdn)</u>	<u>SD</u>	<u>Range</u>
CDI	51.47	10.97	34-100
RCMAS	52.08	12.34	19-87
CBCL Int.	62.97	12.10	27-88
CBCL Ext.	61.55	12.99	30-85
FES conflict	4.87	1.986	0-9
PSI Total Stress	253.73	46.95	129-361
BDI	11.81	9.59	0-46
Total Family Income	\$31,027 (\$24,288)	\$29,634	0-\$200,000

Multiple Regression

For each regression model, the independent variables included types of abuse (e.g., witness to domestic violence, sexual abuse, and physical abuse), history of foster care, and the three interaction terms as moderators (e.g., Foster.Care-by-Sexual.Abuse, Foster.Care-by-Physical.Abuse, Foster.Care-by-WitnessDV). Data were obtained from both children and a parent/guardian. With respect to child report, the following outcome variables were included: 1. Child depression (CDI), 2. Child anxiety (RCMAS). With respect to parent/guardian report, the following outcome variables were included: 3. Parent report of internalizing symptoms (CBCL Int.), 4. Parent report of externalizing symptoms (CBCL Ext.), 5. Family conflict (FES conflict), 6. Parenting stress (PSI Total Stress), and 7. Parent depression (BDI). Overall, each model showed little to no multicollinearity, as indicated by low VIF values. Furthermore, scatterplots of the predicted values against the residuals indicated minimal systematic clustering. The scatterplot for each outcome variable is included in Appendix I. Taken together, these results suggest that

the assumptions of all of the models that were analyzed are tenable and that a linear model is a good fit for the data. Results for individual models are detailed below.

Child depression. The first multiple regression model examined child depression as an outcome (Table 4). The set of predictors accounted for a significant amount of the variance in the association with child depression, but no interaction terms were found to be significant.

Table 4
Regression coefficients for child depression

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	.246	.039	.003	1.542
PhysicalAbuse	.093	.006	.248	1.459
DomesticViolence	.044	.001	.587	1.512
FosterCare	.165	.004	.369	7.703
SexualAbuse-By-FosterCare	.007	<.001	.964	4.841
PhysicalAbuse-By-FosterCare	-.069	.002	.508	2.506
Domestic Violence-By-FosterCare	-.110	.005	.297	2.510

Model: $F(7, 212)=2.38, R^2=.073, p=.023$

Child anxiety. The next outcome variable examined was child anxiety (Table 5). Similar to child depression, the set of predictors accounted for a significant amount of the variance in child anxiety, but no interaction terms were found to be significant.

Table 5
Regression coefficients for child anxiety

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	.325	.067	<.001	1.586
PhysicalAbuse	.102	.007	.197	1.451
DomesticViolence	.057	.002	.492	1.570
FosterCare	.079	.001	.668	7.799
SexualAbuse-By-FosterCare	-.158	.005	.286	5.030
PhysicalAbuse-By-FosterCare	-.009	<.001	.929	2.530
Domestic Violence-By-FosterCare	.009	<.001	.933	2.547

Model: $F(7, 213)=2.666, R^2=.081, p=.012$

Parent report of child internalizing symptoms. Following this, the more general outcome of child internalizing symptoms (Table 6) was examined. Overall, the set of predictors accounted for a significant amount of the variance in child internalizing symptoms. In addition to

this, the interaction term of Domestic Violence by Foster Care was significant. Upon examination of this effect, two additional linear regressions were conducted for children with a history of foster care and children without a history of foster care. Independent variables included child sexual abuse, child physical abuse, and witness to domestic violence. The dependent variable included child internalizing symptoms (CBCL Int.). Results of these analyses (Table 7) revealed a significant association between child internalizing symptoms and witness to domestic violence in children without a history of foster care. Furthermore, results suggested a modest relationship between physical abuse and foster care in the association with child internalizing symptoms, although the effect did not reach a statistically significant level.

Table 6

Regression coefficients for child internalizing symptoms

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	.023	<.001	.801	1.582
PhysicalAbuse	-.047	.002	.584	1.411
DomesticViolence	.205	.028	.021	1.515
Foster Care	-.129	.002	.530	8.175
SexualAbuse-By-FosterCare	.131	.003	.417	5.076
PhysicalAbuse-By-FosterCare	.223	.019	.055	2.604
Domestic Violence-By-FosterCare	-.318	.038	.007	2.678

Model: F(7, 179)=2.369, R²=.085, p=.024

Table 7

Post hoc regressions for child internalizing symptoms

	<u>Independent Variable</u>	β	sr^2	p
Foster Care	SexualAbuse	5.062	.024	.297
	PhysicalAbuse	7.302	.076	.069
	<i>DomesticViolence</i>	<i>-7.776</i>	<i>.071</i>	<i>.078</i>
<i>Model: F(3, 37)=3.085, R²=.20, p=.039</i>				
No Foster Care	SexualAbuse	.670	<.001	.800
	PhysicalAbuse	-1.191	.002	.582
	<i>DomesticViolence</i>	<i>5.169</i>	<i>.037</i>	<i>.021</i>
<i>Model: F(3, 142)=2.092, R²=.042, p=.104</i>				

Parent report of child externalizing symptoms. The next outcome variable examined was child externalizing symptoms (Table 8). Similar to child internalizing symptoms, the set of

predictors and the interaction term of Domestic Violence By Foster Care accounted for a significant amount of the variance in child externalizing symptoms. Upon examination of this effect, two additional linear regressions were conducted for children with a history of foster care and children without a history of foster care. Independent variables included child sexual abuse, child physical abuse, and witness to domestic violence. The dependent variable included child externalizing symptoms (CBCL Ext.). Results of these analyses (Table 9) revealed a significant association between witness to domestic violence and parent report of child internalizing symptoms in children without a history of foster care. Furthermore, results revealed a modest association between witness to domestic violence and parent report of child externalizing symptoms in children with a history of foster care, although this did not reach a statistically significant level

Table 8
Regression coefficients for child externalizing symptoms

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	.111	.008	.210	1.582
PhysicalAbuse	.092	.006	.274	1.411
DomesticViolence	.277	.051	.002	1.515
FosterCare	.053	<.001	.791	8.175
SexualAbuse-By-FosterCare	.058	.001	.714	5.076
PhysicalAbuse-By-FosterCare	.150	.009	.185	2.604
Domestic Violence-By-FosterCare	-.415	.065	<.001	2.678

Model: F(7, 179)=3.581, R²=.123, p=.001

Table 9
Post hoc regressions for child externalizing symptoms

	<u>Independent Variable</u>	β	sr^2	p
Foster Care	SexualAbuse	5.711	.023	.303
	PhysicalAbuse	8.866	.081	.054
	DomesticViolence	-10.903	.102	.032
<i>Model: F(3, 37)=3.930, R²=.242, p=.016</i>				
No Foster Care	SexualAbuse	3.580	.011	.200
	PhysicalAbuse	2.573	.009	.261
	DomesticViolence	7.646	.070	.001
<i>Model: F(3, 142)=3.883, R²=.076, p=.011</i>				

Child report of family conflict. The fifth model included family conflict as the outcome (Table 10). Similar to child depression and anxiety, the set of predictors accounted for a significant amount of the variance in family conflict, but no interaction terms were found to be significant. However, results suggested a modest relationship between domestic violence and foster care in the association with child conflict, although this interaction did not reach a statistically significant level.

Table 10
Regression coefficients for family conflict

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	.177	.020	.035	1.528
PhysicalAbuse	.127	.011	.116	1.426
DomesticViolence	.001	<.001	.994	1.479
FosterCare	.014	<.001	.938	7.286
SexualAbuse-By-FosterCare	-.088	.002	.537	4.432
PhysicalAbuse-By-FosterCare	.105	.004	.321	2.428
Domestic Violence-By-FosterCare	-.197	.015	.073	2.630

Model: F(7, 203)=2.437, R²=.078, p=.020

Parenting stress. Following this, parenting stress (Table 11) was examined as an outcome. Analysis revealed that the set of predictors accounted for a significant amount of the variance. The interaction term Domestic Violence by Foster care also accounted for a significant amount of the variance. Upon examination of this effect, two additional linear regressions were conducted for children with a history of foster care and children without a history of foster care. Independent variables included child sexual abuse, child physical abuse, and witness to domestic violence. The dependent variable included parenting stress (PSI Total Stress). Results of these analyses (Table 12) revealed a modest association between witness to domestic violence and parenting stress in children with a history of foster care, although this did not reach a statistically significant level.

Table 11
Regression coefficients for parenting stress

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	-.014	<.001	.877	1.291
PhysicalAbuse	.094	.007	.304	1.329
DomesticViolence	.162	.019	.084	1.390
FosterCare	.037	<.001	.897	13.187
SexualAbuse-By-FosterCare	-.001	<.001	.998	10.725
PhysicalAbuse-By-FosterCare	.084	.003	.491	2.369
DomesticViolence-By-FosterCare	-.302	.035	.018	2.579

Model: F(7, 150)=1.5, R²=.065, p=.171

Table 12
Post hoc regressions for parenting stress

	<u>Independent Variable</u>	β	sr^2	p
Foster Care	SexualAbuse	-1.765	<.001	.949
	PhysicalAbuse	22.930	.069	.157
	DomesticViolence	-33.883	.132	.054
<i>Model: F(3, 25)=1.972, R²=.191, p=.144</i>				
No Foster Care	SexualAbuse	-1.677	.013	.880
	PhysicalAbuse	9.317	.089	.313
	DomesticViolence	15.164	.150	.091
<i>Model: F(3, 125)=1.501, R²=.035, p=.218</i>				

Parental depression. The final model examined (Table 13) utilized parent depression (BDI) as the outcome. The interaction term Domestic Violence by Foster Care accounted for a significant amount of the variance in parental depression. Upon examination of this effect, two additional linear regressions were conducted for children with a history of foster care and children without a history of foster care. Independent variables included child sexual abuse, child physical abuse, and witness to domestic violence. The dependent variable included parental depression (BDI). Results of these analyses (Table 14) revealed modest associations between witness to domestic violence and parenting in children with a history of foster care in addition to the set of predictors and parental depression, however these relationships were not statistically significant.

Table 13

Regression coefficients for parental depression

<u>Independent Variable</u>	β	sr^2	p	VIF
SexualAbuse	-.043	.001	.622	1.522
PhysicalAbuse	.007	<.001	.937	1.450
DomesticViolence	.065	.003	.451	1.484
FosterCare	.040	<.001	.844	8.209
SexualAbuse-By-FosterCare	.141	.004	.373	4.994
PhysicalAbuse-By-FosterCare	-.126	.006	.278	2.691
DomesticViolence-By-FosterCare	-.268	.027	.021	2.660

Model: $F(7, 187)=1.952, R^2=.068, p=.064$

Table 14

Post hoc regressions for parental depression

	<u>Independent Variable</u>	β	sr^2	p
Foster Care	SexualAbuse	2.731	.011	.455
	PhysicalAbuse	-3.606	.029	.230
	DomesticViolence	-7.142	.102	.030
<i>Model: $F(3, 39)=3.558, R^2=.215, p=.023$</i>				
No Foster Care	SexualAbuse	-.981	.002	.623
	PhysicalAbuse	.137	<.001	.937
	DomesticViolence	1.293	.004	.452
<i>Model: $F(3, 148)=.409, R^2=.008, p=.747$</i>				

Chapter V

Discussion

The current study sought to examine the role that foster care plays in the psychosocial outcomes of children and adolescents who have experienced various types of trauma. It was hypothesized that a history of foster care would significantly moderate the relationship between psychosocial impairment and the incidence of abuse in children and adolescents who have experienced either physical abuse, sexual abuse, or witness to domestic violence as well as in their caregivers. Outcomes were examined using several multiple regression models.

Independent variables examined included types of abuse (e.g., sexual abuse, physical abuse, or witness to domestic violence), foster care history (0=no, 1=yes), and three interaction terms (i.e., SexualAbuse-By-FosterCare, PhysicalAbuse-By-FosterCare, and DomesticViolence-By-FosterCare).

Moderated Multiple Regression

Results of the multiple regression models indicated that a history of foster care significantly moderates the association between children and adolescents who have witnessed domestic violence and internalizing disorders, externalizing disorders, and parenting stress. Upon further examination of these effects, a significant positive linear association was found between witness to domestic violence and parent report of internalizing symptoms and externalizing symptoms in children and adolescents without a history of foster care. Modest negative linear associations (that were trending towards significance, $\alpha=.025$) were also found between witness to domestic violence and parent report of externalizing symptoms and parenting stress in children and adolescents with a history of foster care. In contrast, the significance of foster care as a moderator was not found in the association between psychosocial impairment in

children/adolescents and their parents/caregivers with a history of either sexual abuse or physical abuse. These results can likely be explained by the fact that witness to domestic violence as a trauma depends largely on a child/adolescent's home environment. Upon entrance into foster care following the removal of a child from their biological home, it is likely that the child's main stressor is removed, thus minimizing the impact on his/her psychosocial functioning. This explanation is solidified by the significant association between domestic violence and child internalizing/externalizing symptoms in children and adolescents without a history of foster care. This phenomenon is also represented in the observed modest associations which indicated that as children with a history of domestic violence go into foster care, their substantive risk for externalizing symptoms and their caregiver's risk for parenting stress goes down.

In contrast to this, studies show that the negative impacts of sexual abuse and physical abuse persist much more frequently than witness to domestic violence in children and adolescents, even after removal from the environment in which the abuse occurred (Dubner & Mott, 1999; McMillen, et al., 2005). Also of note, the moderation of foster care in the relationship between child functioning and child abuse was only seen in outcomes which were the result of parent/guardian report (CBCL internalizing and externalizing). This could be the result of poor child insight into their own current functioning or enhanced ability of parents/guardians (as bystanders) to perceive impairment in children and adolescents. Related to this, foster care was also found to moderate the relationship between parenting stress and the maltreatment of children and adolescents. These results are in line with the above noted results that indicate a greater ability for parents to perceive child impairment. This phenomenon, coupled with additional evidence which indicates more significant emotional and behavioral

problems in children who have been in foster care (dosReis, et al., 2001, Taussig, et al., 2001), likely explains the moderation of foster care between child abuse and parenting stress.

Significance of Main Effects

Aside from the above noted moderated relationships (i.e., significant interaction effects), there were several significant main effects in the analyzed multiple regression models, indicating an associative relationship. Most pointedly, sexual abuse as a predictor variable was significantly associated with child depression, child anxiety, and family conflict. This coincides with the literature which suggests that sexual abuse is associated with significant impairment in children and adolescents, as well as their home environments, with or without the subsequent experience of foster care (Nash, Hulse, Sexton, Harralson, & Lambert, 1993; Putnam, 2003; Trickey, Siddaway, Meiser-Stedman, Serpell, & Field, 2012). More specifically, in contrast to all other types of abuse with or without a history of foster care, children who have been sexually abused were able to endorse significant impairment in functioning. This phenomenon may be explained by elements of our culture where spanking and/or corporal punishment are still considered more normative, which in turn, may minimize overall distress in the child. Furthermore, the literature has shown that children and adolescents who have experienced physical abuse, but not sexual abuse, often maintain an external locus of control relative to the abuse (Valle & Silovsky, 2002). This is in contrast to child survivors of sexual abuse, who often experience more prolonged internalized emotional suffering after the abuse has ended (Chen, et al., 2010). Furthermore, this effect may also be explained by recent research, which has shown that mothers who have experienced domestic violence often model non-reactivity. This is manifested in the mother's children as a lack of responding or impairment following physical abuse, but not sexual abuse. Explaining this further, authors posited that this is accounted for by the fact that the effects of

sexual abuse are incongruent with the family's experience of physical violence, including physical abuse of child, or witnessing abuse of the mother. (Faust, Nelson, & Campanile, In Press).

Also of note, foster care as main effect was not significant in any model of child/adolescent psychopathology, parent/guardian functioning or family functioning. Due to the fact that foster care only posed a significant influence on psychosocial functioning when in an interaction with abuse, this suggests that the experiences of abuse or maltreatment and living in foster care hold an additive effect on the psychosocial functioning of children and adolescents who have suffered maltreatment.

Study Strengths

Overall, this study holds significant strengths and its design and implementation. First of all, as noted above, the study results fill in significant gaps in the existing literature. Although an extensive amount of literature exists that examines the outcomes that children in foster care experience, no study to date has examined the specific role of foster care placements in the moderation of psychopathology following child abuse. The current study fills in significant holes in the literature in this regard. As children (more specifically, children in foster care) are a marginalized and vulnerable population, it is important to identify and examine all aspects of this vulnerability. With a greater understanding of the role that a child's experiences in foster care can play in their subsequent psychosocial functioning, children and adolescents who experience trauma and are removed from their homes may experience greater outcomes and improved quality of life. Additionally, the study's large sample of participants and significant variability of participant demographics will likely add to the generalizability, and more specifically the statistical conclusion validity, of the results. Furthermore, the fact that the study design utilized

both self and parental report in the identification of child and adolescents symptoms will serve to minimize response bias, ultimately strengthening the validity of the results.

Study Limitations

However, there are limitations to the study design as well. First of all, the design was cross sectional, which does not allow for predictive inferences when examining and explicating study outcomes. Furthermore, several elements of the study design limited the validity of the results. The small sample size of the participants of interest (i.e., children with a history of foster care) calls into question the statistical conclusion validity of the results. More specifically, more significant moderating effects could have been observed with a larger target sample population. As the Bonferroni correction is also a stringent assessment of the type one error rate in post hoc analyses, a larger sample size (and thus, greater power) may yield more significant associative relationships even if the same moderation should be found. The construct validity of the current study is also called into question. Overall, due to the self-report nature of the current study's outcome variables, there may have been under or over reporting of incidence rates. However, this effect was likely minimized due to the use of valid and reliable measures. Finally, internal validity of the results is called into question due to the lack of random assignment into groups. However, as the results of several independent sample t-tests showed that groups did not significantly differ (e.g., foster care vs. control) with respect to outcome and demographic variables, this effect is likely minimal.

Future Directions

In order to further explicate these findings, future studies should examine several alternative factors which could moderate or mediate the role of foster care in the development of psychopathology in children and adolescents who have suffered maltreatment. For example,

examining the effect of gender on psychopathology in maltreated children and adolescents (both with and without a history of foster care) may serve to provide greater insight into which individuals may be at risk for the development of psychopathology. The magnitude of this relationship also may be examined in greater detail with a larger sample group size. Related to this, future research should examine the influence that various demographics (e.g., socio-economic status, race/ethnicity) may have on the levels of impairment in psychopathology. Like gender, increased insight into these issues may serve to greater inform the identification and treatment of those who are at a greater risk for the development of psychopathology.

Related to this, future research should examine the role that the training and specialization (e.g., therapeutic orientation) that mental health providers hold in the treatment outcomes of maltreated children. As research has indicated that this is a particularly vulnerable and underserved population (dosReis, et al., 2001; Newton, et al., 2000; Rubin, et al., 2007), the identification of optimal treatment procedures for maltreated children in foster care is of particular importance. Furthermore, while research has been able to hone on specific practices that are generally accepted as standard for various psychological diagnoses (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001), emerging research indicates that other non-specific factors (irrespective of the treatment used) are significantly related to treatment outcomes in children and adolescents (Aarons, 2005; Aarons, & Palinkas, 2007; Kazak, et al., 2010). These results should be extended to examine the role that non-specific factors play in the treatment outcomes of children and adolescents (especially maltreated children) who are currently residing in the foster care system.

Also of note, future research should explore in greater detail the role that foster care plays in the development of psychopathology in maltreated children. For example, examining various

types of foster care placements (e.g., kinship vs. non-kinship households) may serve to greater inform the mechanisms behind the moderated relationship that foster care holds in the development of psychopathology in children who have experienced abuse. Not only will this serve to inform the identification and treatment of those children who are most at risk, greater insight into which type of placement is likely to cause more significant harm may serve to inform policy practices in the future, specifically where children who can no longer stay in their biological parent(s)' care are placed immediately following removal (i.e., kinship care vs. non-biological foster care.) Related to this, the impact of length of time in foster care will also likely serve to explicate the mechanisms behind the moderating role of foster care in the development of psychopathology of maltreated children. This point of inquiry will also serve to further support the significant body of research which indicates that multiple placements for children in foster care over a longer period of time leads towards poorer outcomes in the long term (cf: Newton, et al., 2000; Rubin, et al., 2007).

Additionally, more research should specifically examine the family context (regardless of kinship or foster care) in which these children live and how various elements of the family (e.g., conflict, cohesion, independence, connectedness) may influence the psychosocial outcomes of maltreated children. For example, as many children who have witnessed domestic violence continue to live in the environment in which they experienced that trauma, their biological familial context may be much more tumultuous and/or conflictual than children and adolescents who are currently living in foster care and have witnessed domestic violence. Results from this research may serve to greater inform the identification and treatment of children and adolescents who are at-risk for the development or exacerbation of psychopathology.

References

- Aarons, G.A. (2005). Measuring provider attitudes toward evidence-based practice: Consideration of organizational context and individual differences. *Child and Adolescent Psychiatric Clinics of North America, 14*, 255-271.
- Aarons, G. A., & Palinkas, L. A. (2007). Implementation of evidence-based practice in child welfare: Service provider perspectives. *Administration and Policy in Mental Health and Mental Health Services Research, 34*(4), 411-419.
- Abidin, R. R. (1995). *Parenting Stress Index: Professional Manual* (3rd ed.). Odessa, FL: Psychological Assessment Resources, Inc.
- Academy of Child and Adolescent Psychiatry (2005). Foster Care “Facts for Families.” *64*(05/05)
- Achenbach, T.M., & Rescorla, L.A. (2001). *Manual for the ASEBA School-Age Forms and Profiles*. Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.
- Ahrens, K.R., DuBois, D.L., Richardson, L.P., Fan, M., & Lozano, P. (2008). Youth in foster care with adult mentors during adolescence have improved adult outcomes. *Pediatrics, 121*(2), 246-252.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.
- Barber, J.G., Delfabbro, P.H., & Cooper, L.L. (2001). The predictors of unsuccessful transition into foster care. *Journal of Child Psychology and Psychiatry, 42*(6). 785-790.
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social

- psychology research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Arch Gen Psychiatry* 4, 561-571.
- Beck, A.T., Steer, R.A., & Brown, G.K. (1996) "Manual for the Beck Depression Inventory-II". San Antonio, TX: Psychological Corporation
- Beck, A. T., Steer, R.A., & Garbin, M.G. (1988) Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8(1), 77-100.
- Berrick, J.D. (1997). Assessing quality of care in kinship and foster family care. *Family Relations*, 46(3), 273-280.
- Berry, J.O., & Jones, W.H. (1995). The parental stress scale: initial psychometric evidence. *Journal of Social and Personal Relationships*, 12(3), 463-472.
- Chamberlain, P., Price, J.M., Reid, J.B., Landsverk, J., Fisher, P.A., & Stoolmiller, M. (2006). Who disrupts from placements in foster and kinship care? *Child Abuse and Neglect*, 30, 409-424.
- Chen, L. P., Murad, M. H., Paras, M. L., Colbenson, K. M., Sattler, A. L., Goranson, E. N., ... & Zirakzadeh, A. (2010). Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis. *Mayo Clinic Proceedings*, 85(7), 618-629
- Child Welfare Information Gateway (2013). *Foster Care Statistics 2011*. Washington, D.C.: U.S. Department of Health and Human Services, Children's Bureau. Retrieved from <https://www.childwelfare.gov/pubs/factsheets/foster.cfm>
- Cohen, J. (1992). A Power Primer. *Psychological Bulletin*, 112(1), 155-159.

- dosReis, S., Zito, J.M., Safer, D.J., & Soeken, K.L. (2001). Mental health services for youths in foster care and disabled youths. *American Journal of Public Health, 91*(7), 1094-1099
- Dozier, M. (2005). Challenges of foster care. *Attachment and Human Development, 7*(1), 27-30.
- Dubner, A. E., & Motta, R. W. (1999). Sexually and physically abused foster care children and posttraumatic stress disorder. *Journal of Consulting and Clinical psychology, 67*(3), 367-373
- Fanshel, D., & Shinn, E.B. (1978). *Children in Foster Care: A longitudinal Investigation*. New York, NY: Columbia University Press.
- Faust, J., Nelson, S., & Campanile, N. (in press). Effects of abuse within violence exposed youth: Desensitization or masked effects? *Journal of Aggression, Maltreatment, and Trauma*
- Hoagwood, K., Burns, B.J., Kiser, L., Ringeisen, H., & Schoenwald, S.K. (2001). Evidence-based practice in child and adolescent mental health services. *Psychiatric Services, 52*(9), 1179-1189.
- Horwitz, S.M., Balestracci, K.M.B., & Simms, M.D. (2001). Foster care placement improves children's functioning. *Archives of Pediatrics and Adolescent Medicine, 155*(11), 1255-1260.
- Kazak, A. E., Hoagwood, K., Weisz, J. R., Hood, K., Kratochwill, T. R., Vargas, L. A., & Banez, G. A. (2010). A meta-systems approach to evidence-based practice for children and adolescents. *American Psychologist, 65*(2), 85-97.
- Kazdin, A. E. (2003). *Research design in clinical psychology*. (4th ed.) Boston: Allyn and Bacon.
- Kovacs, M. (1992). Children's depression inventory. North Tonawanda, N.Y: Multi-Health System.

- MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39*(1), 99-128.
- McMillen, J.C., Scott, L.D., Zima, B.T., Ollie, M.T., Munson, M.R., & Spitznagel, E. (2004). Use of mental health services among older youths in foster care. *Psychiatric Services, 55*(7), 811-817.
- McMillen, J. C., Zima, B. T., Scott Jr, L. D., Auslander, W. F., Munson, M. R., Ollie, M. T., & Spitznagel, E. L. (2005). Prevalence of psychiatric disorders among older youths in the foster care system. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(1), 88-95.
- Moos, R., & Moos, B. (1994). Family Environment Scale Manual: Development, Applications, Research – Third Edition. Palo Alto, CA: Consulting Psychologist Press.
- Nash, M. R., Hulseley, T. L., Sexton, M. C., Harralson, T. L., & Lambert, W. (1993). Long-term sequelae of childhood sexual abuse: Perceived family environment, psychopathology, and dissociation. *Journal of Consulting and Clinical psychology, 61*(2), 276.
- Newton, R.R., Litrownik, A.J., & Landsverk, J.A. (2000). Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse and Neglect, 24*(10), 1363-1374.
- Orme, J.G., & Buehler, C. (2001). Foster family characteristics and behavioral emotional problems in foster children: a narrative review. *Family Relations, 50*(1), 3-15.
- Oswald, S.H., Heil, K., & Goldbeck, L. (2010). History of maltreatment and mental health problems in foster children: A review of the literature. *Journal of Pediatric Psychology, 35*(5), 462-472.

- Preacher, K.J., & Hayes, A.F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717-731.
- Putnam, F. W. (2003). Ten-year research update review: Child sexual abuse. *Journal of the American Academy of Child & Adolescent Psychiatry*, 42(3), 269-278.
- Reilly, T. (2003). Transition from care: status and outcomes of youth who age out of foster care. *Child Welfare: Journal of Policy, Practice, and Program*, 86(6), 727-746.
- Reynolds, C. R., & Richmond, B. O. (1978). What I think and feel: A revised measure of children's manifest anxiety. *Journal of abnormal child psychology*, 6(2), 271-280.
- Rhodes, K.W., Orme, J.G., & Buehler, C. (2001). A comparison of family foster parents who quit, consider quitting, and plan to continue fostering. *Social Service Review*, 75(1), 84-114.
- Rubin, D.M., Alessandrini, E.A., Feudtner, C., Mandell, D.S., Localio, A.R., & Hadley, T. (2004). Placement stability and mental health costs for children in foster care. *Pediatrics*, 113(5), 1336-1341.
- Rubin, D.M., O'Reilly, A.L.R., Luan, X., & Localio, A.R. (2007). The impact of placement stability on well-being for children in foster care. *Pediatrics*, 119(2), 336-344.
- Shlonsky, A.R., & Berrick, J.D. (2001). Assessing and promoting quality in kin and nonkin foster care. *Social Service Review*, 75(1), 60-83.
- Simms, M.D., Dubowitz, H., & Szilagyi, M.A. (2000). Health care needs of children in the foster care system. *Pediatrics*, 106(4), 909-918

- Taussig, H.N., Clyman, R.B., & Landsverk, J. (2001). Children who return home from foster care: A 6-year prospective study of behavioral health outcomes in adolescence. *Pediatrics*, *108*(1), 1-7.
- Trickey, D., Siddaway, A. P., Meiser-Stedman, R., Serpell, L., & Field, A. P. (2012). A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents. *Clinical Psychology Review*, *32*(2), 122-138.
- U.S. Census Bureau. (2010). *Overview of Race and Hispanic Origin: 2010*. Retrieved February 3, 2014, from <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>
- Valle, L. A., & Silovsky, J. F. (2002). Attributions and adjustment following child sexual and physical abuse. *Child Maltreatment*, *7*(1), 9-24.
- Weaver, T. L., & Clum, G. A. (1993). Early family environments and traumatic experiences associated with borderline personality disorder. *Journal of Consulting and Clinical Psychology*, *61*(6), 1068-1075
- Zima, B.T., Bussing, R., Yang, Z., & Belin, T.R. (2000). Help-seeking steps and service use for children in foster care. *The Journal of Behavioral Health Services and Research*, *27*(3), 271-285.
- Zito, J.M., Safer, D.J., Sai, D., Gardner, J.F., Thomas, D., Coombes, P.,...Mendez-Lewin, M. (2008). Psychotropic medication patterns among youth in foster care. *Pediatrics*, *121*(1), 157-163

APPENDICES

Appendix I: Residual Scatterplots for Regression Models

Figure 1: Residual scatterplot for CDI

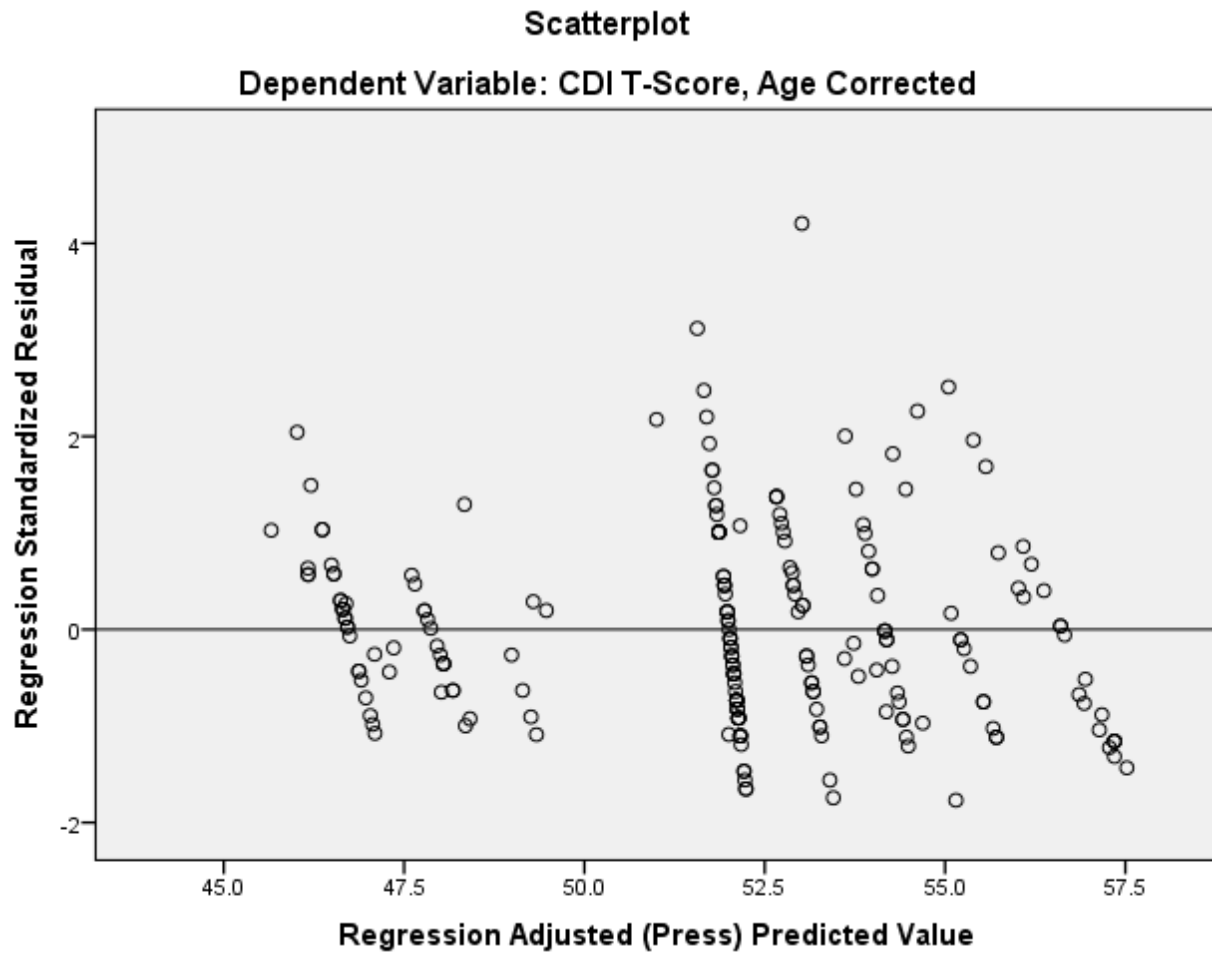


Figure 2: Residual scatterplot for RCMAS

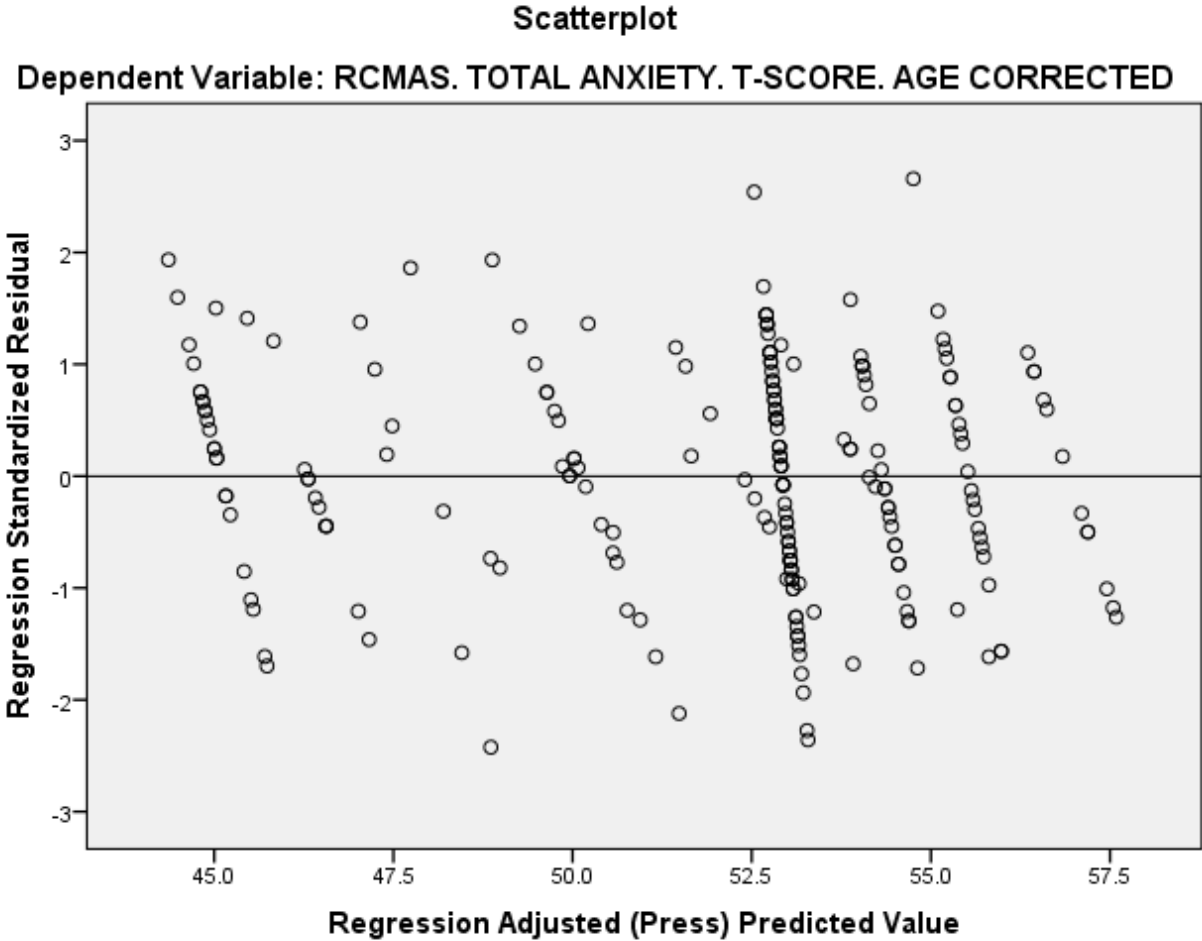


Figure 3: Residual scatterplot for internalizing symptoms

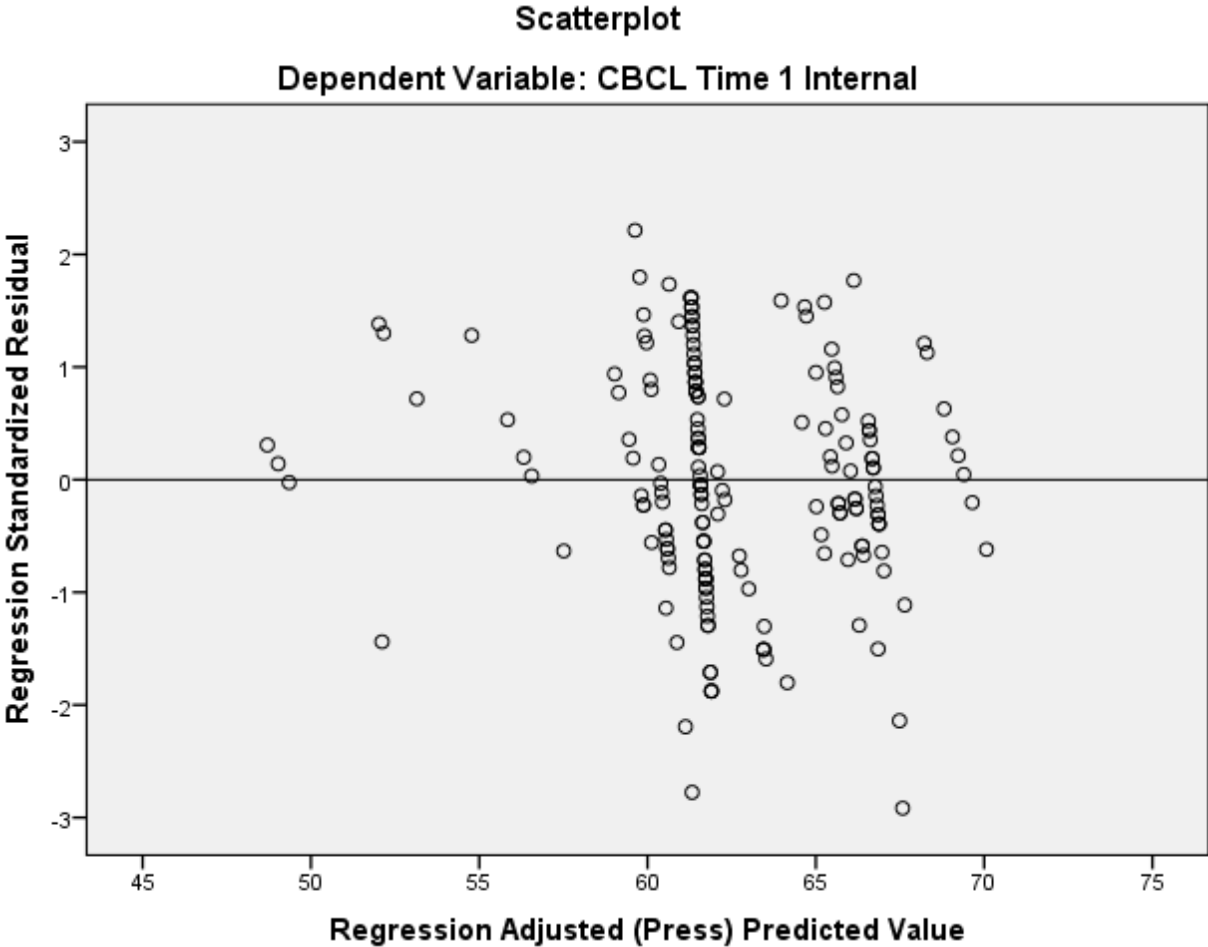


Figure 4: Residual scatterplot for externalizing symptoms

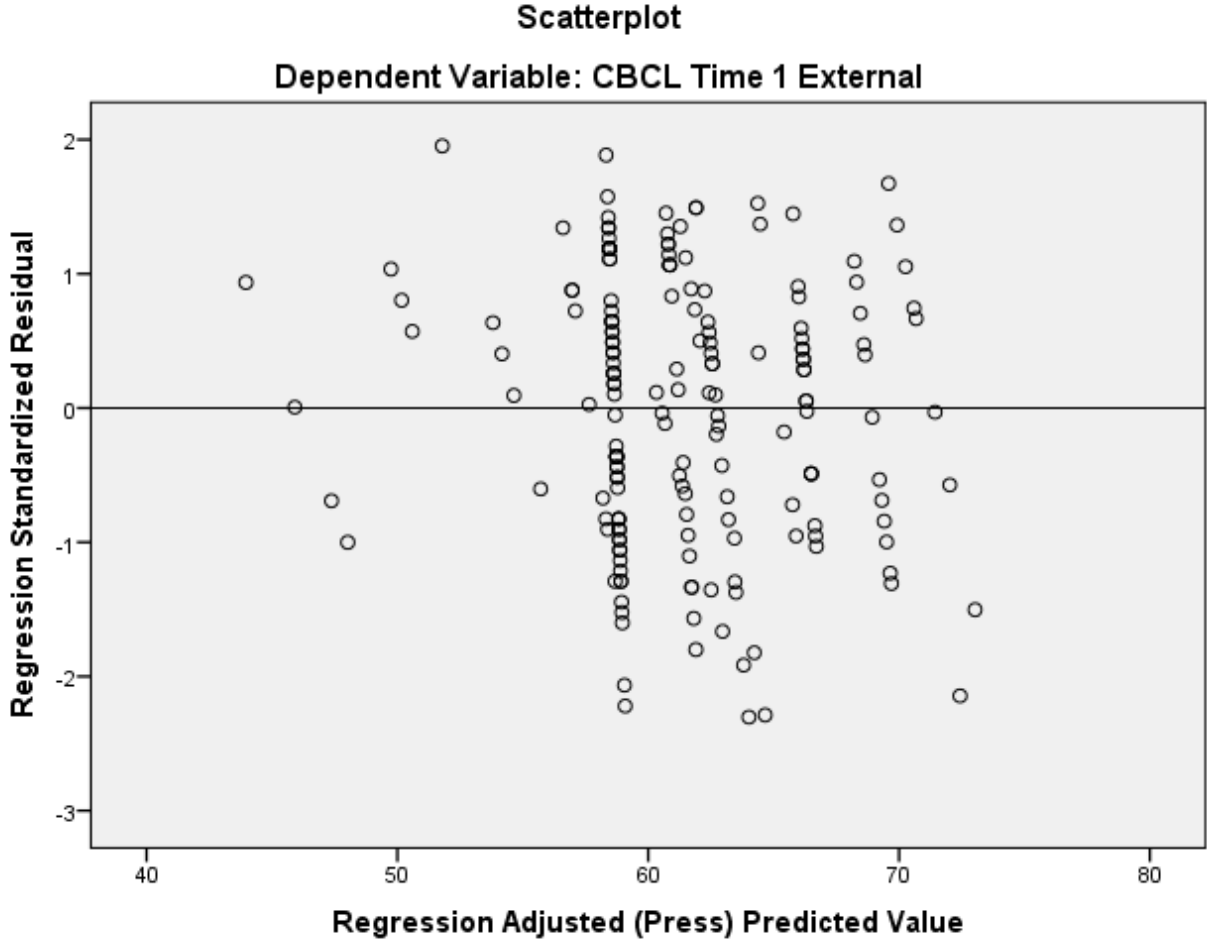


Figure 5: Residual scatterplot for family conflict

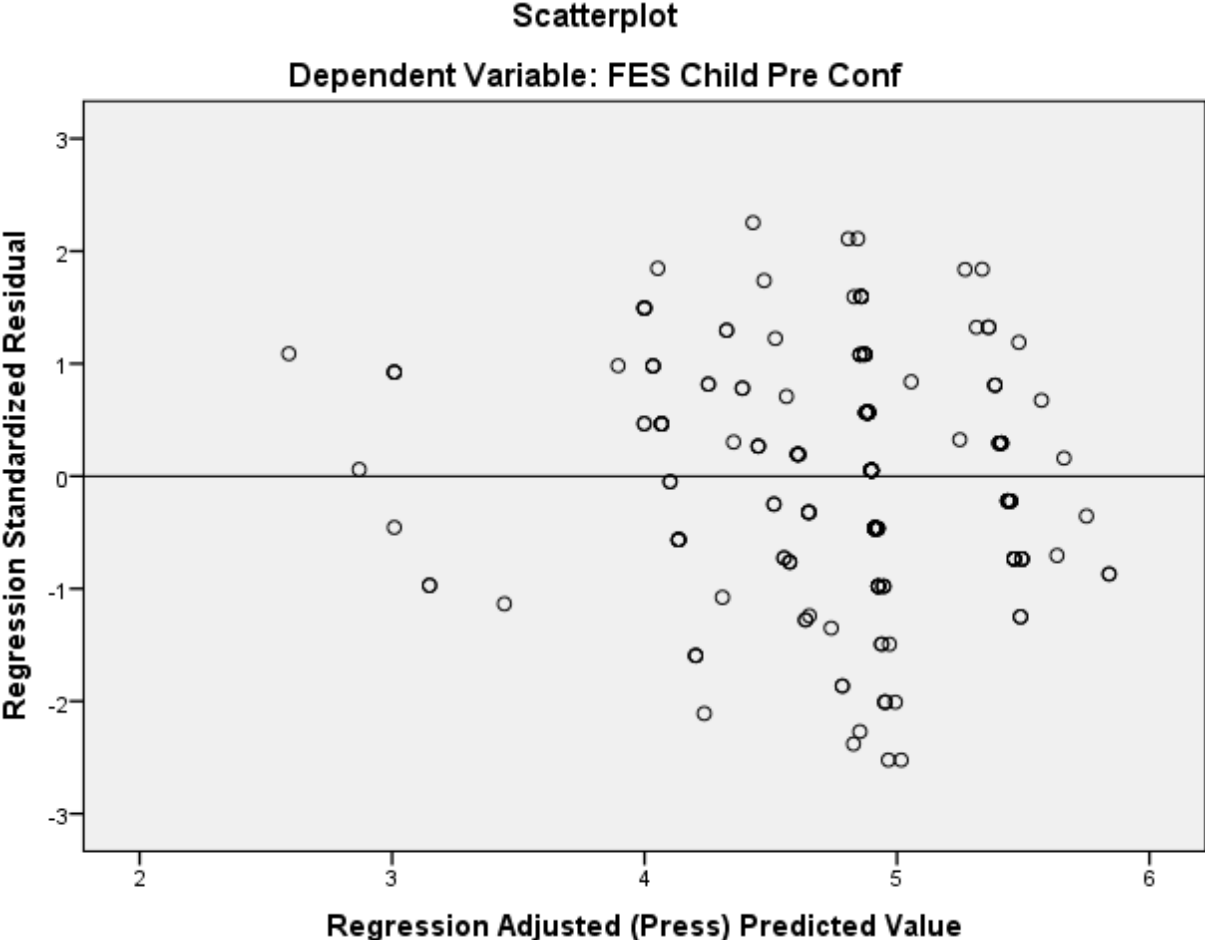


Figure 6: Residual scatterplot for parenting stress

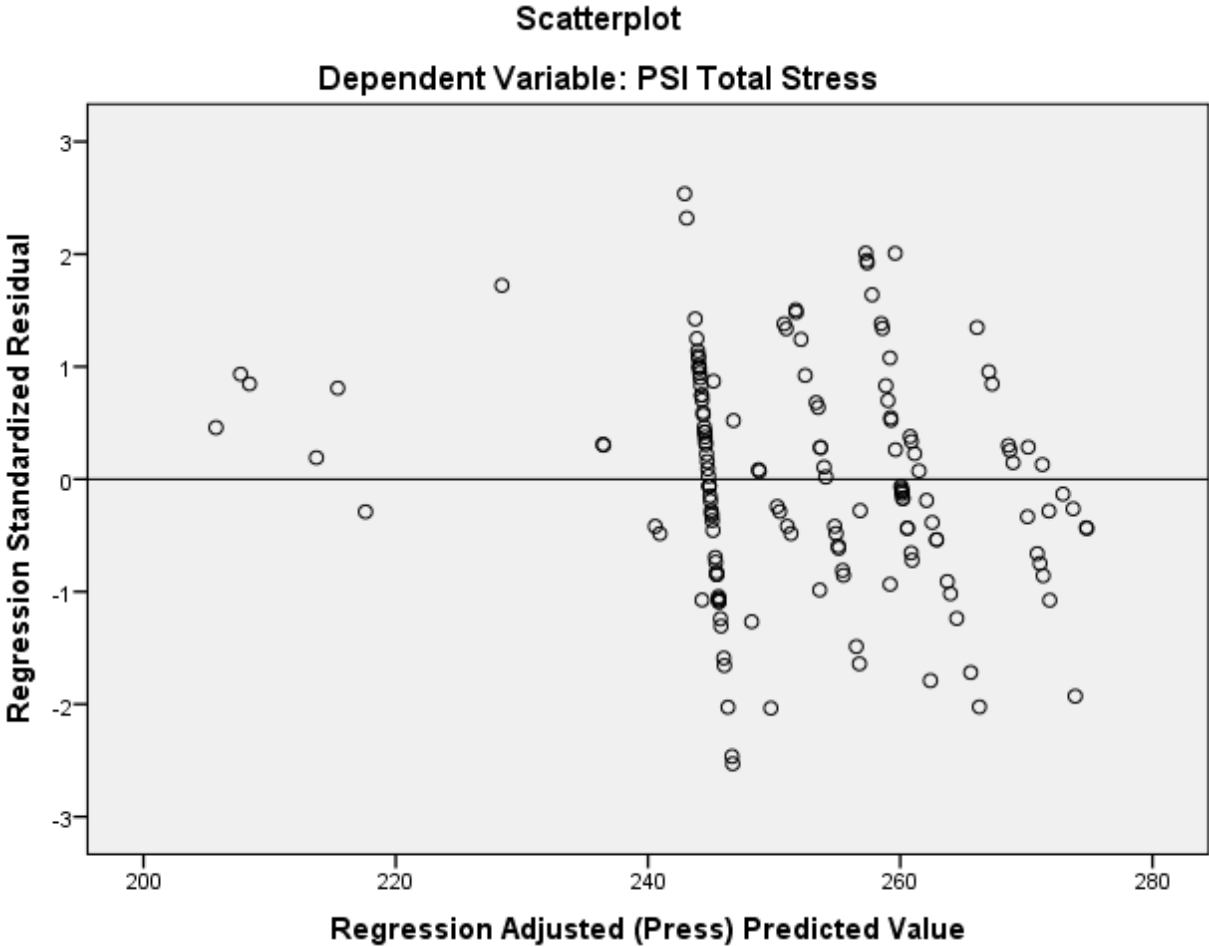


Figure 7: Residual scatterplot for parent depression

