1-1-2017

The Influence of Trauma, Locus of Control, And Health-Related Quality Of Life on a Child's Self-Worth

Anita Alexander

anita.alexander92@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: https://nsuworks.nova.edu/cps_stuetd

Part of the Psychology Commons

Share Feedback About This Item

THE INFLUENCE OF TRAUMA, LOCUS OF CONTROL, AND HEALTH-RELATED QUALITY OF LIFE ON A CHILD'S SELF-WORTH

by

Anita Alexander, M.S.

A Dissertation Presented to the College of Psychology
of Nova Southeastern University in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy
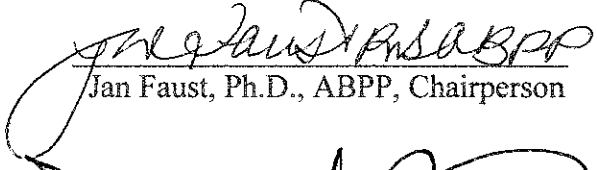
NOVA SOUTHEASTERN UNIVERSITY

2018

This dissertation was submitted by Anita Alexander under the direction of the Chairperson of the dissertation committed listed below. It was submitted to the College of Psychology and approved in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Clinical Psychology at Nova Southeastern University.
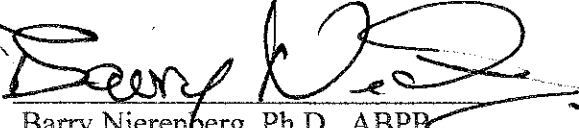
Approved:

_____
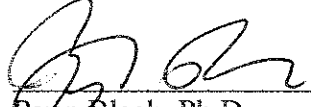Jan Faust, Ph.D., ABPP, Chairperson

04-23-2018
_____
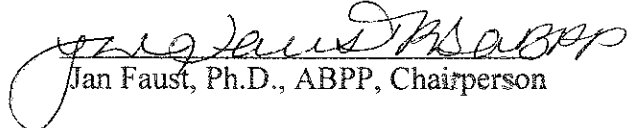Date of Defense

_____
Barry Nierenberg, Ph.D., ABPP

_____
Ryan Black, Ph.D.

5/1/18
_____
Date of Final Approval

_____
Jan Faust, Ph.D., ABPP, Chairperson

Statement of Original Work

I declare the following:

I have read the Code of Student Conduct and Academic Responsibility as described in the *Student Handbook* of Nova Southeastern University. This dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

Where another author's ideas have been presented in this dissertation, I have acknowledged the author's ideas by citing them in the required style.

Where another author's words have been presented in this dissertation, I have acknowledged the author's words by using appropriate quotation devices and citations in the required style.

I have obtained permission from the author or publisher—in accordance with the required guidelines—to include any copyrighted material (e.g., tables, figures, survey instruments, large portions of text) in this dissertation manuscript.

Anita Alexander

_____
Name

April 28, 2018

_____
Date

Acknowledgements

Dr. Faust, the last four years have flown by. I remember being in such awe of you when I first interviewed to be your mentee. I am still very much in awe of you, and it has been my absolute honor to work with you on this project and so many others. Your love for the field of clinical psychology, as well as your wisdom in clinical practice, research, and teaching, have been nothing short of inspirational. Thank you so much for everything, and I look forward to working with you in the future. You will always be the Dumbledore to my Harry, and the person I want to randomly text funny GIFs to while simultaneously working on research. You will also always be my hero. Go dream team!

Dr. Nierenberg, I truly appreciate all the guidance you have given me in my professional development, as well as the friendship that we have formed. It meant the world to me that your office door was always open, and that you were always ready to listen and teach (it also did not hurt that you always had jazz music playing in the background)! Thank you for believing in me… especially during the times that I did not believe in myself. Thank you for pushing me to be the best student and person that I could be. Thank you for being you!

Dr. Black, thank you for all the time and support that you gave to me during this process. I consider myself so very fortunate to have been taught statistics by you, and to have worked with such a kind and intelligent human being. Neither my dissertation, nor my graduate education, would have been the same without you!

In addition to my committee, I would like to thank my family and friends for their unwavering support, love, and encouragement. I would especially like to thank my mother for teaching me what it means to never give up, and for holding my hand through the hardest times. I also want to give a huge shout out to my other (and better) half, Gregory John Vitale. I know wholeheartedly that I could not have done this without you. Thank you for your kindness, patience, and proof-reading abilities. You are my greatest supporter and my greatest love.

TABLE OF CONTENTS

List of Tables

THE INFLUENCE OF TRAUMA, LOCUS OF CONTROL, AND HEALTH-RELATED QUALITY OF LIFE ON A CHILD'S SELF-WORTH

by

Anita Alexander, M.S.

Nova Southeastern University

ABSTRACT

Previous literature has shown that childhood trauma and adverse experiences are related to a wide range of negative outcomes that can span into adulthood (e.g., low self-worth, poor physical health, and increased likelihood of co-morbid psychological symptoms). However, a gap remains in the existing literature regarding early interventions that may target complicated outcomes (i.e., self-esteem and self-worth) while the survivor is still in childhood. This paper attempts to elucidate the impact that traumatic childhood experiences may have on self-worth, and the importance of implementing targeted intervention before the child reaches adulthood. Therefore, an extensive review was first conducted to gain further insight in regards to how specific variables, namely locus of control and health-related quality of life, may predict childhood development of self-worth. The present study then explored the influence of each factor on a child and adolescent community sample that experienced various types of trauma 61 children and adolescents who were survivors of varying types of trauma were recruited from a local mental health clinic (M=11.89; SD=2.49; 31 males, 30

females). Measures pertaining to locus of control, health-related quality of life, and self-worth were administered at their therapeutic baseline by a randomly assigned therapist. A measure of resiliency was also administered as a secondary exploratory analysis. Results highlighted pediatric quality of life and trauma type as meaningful predictors of self-worth outcomes. Additionally, resiliency as a construct with a significant correlational relationship with self-worth. All findings were interpreted for purposes of intervention, and treatment proposals were delineated.

Keywords: child trauma; self-worth; locus of control; health-related quality of life

Chapter I: Statement of the Problem

Previous research suggests that the variables of self-worth and adverse childhood experiences such that one may influence the other in different ways. Specifically, high levels of self-worth have been observed as protective factors against negative outcomes of childhood trauma and abuse (Werner, 2000), and childhood trauma has been identified as a risk factor by decreasing self-worth (Turner, Finkelhor, & Ormrod, 2010; Stein, Leslie, & Nyamathi, 2002). In addition to understanding the overall relationship between variables when tailoring treatment for children, it is important to consider the different ways a child may respond based on his/her current developmental stage (Harter, 1988). Currently, specific mechanisms contributing to the relationship between childhood trauma and self-worth still remains unclear, and there is a lack of research regarding variables that may predict the variance of global self-worth among children that have lived through adversity. Early intervention, especially those based upon research with children and adolescent participants specifically, may foster both short and long-term benefits regarding self-worth following traumatic events.

The current study revealed the present lack of treatment guidelines regarding effective mechanisms to increase self-worth while children are actively enrolled in treatment. This deficit was especially surprising given the breadth of literature which highlights long-term consequences of childhood trauma (Turner, Finkelhor, & Ormrod, 2010; Stein, Leslie, & Nyamathi, 2002). Although previous literature has depicted locus of control and health-related quality of life as general protective factors against negative consequences following adverse experiences, the literature evidences gaps in research regarding the the predictive nature of these variables on self-worth, and also for

interventions which have locus of control and quality of life as primary components. As

such, the present study was conducted in order to take a preliminary step in

understanding the potential influence that both locus of control and quality of life may

have on self-worth. Additionally, the variable of resiliency was added during the mid-

point of the study as a secondary/exploratory analysis it is often associated with self-

worth in literature regarding childhood trauma (Collin-Vézina, Coleman, Milne, Sell, &

Daigneault, 2014; Tanaka, Wekerle, Schmuck, Paglia-Boak, 2011).

 As mentioned, formulating interventions becomes increasingly complicated with

the target population due to added developmental complexities, as outlined in Piaget's

cognitive developmental theory (2000), which delineates how knowledge is acquired

during various stages of life. One important developmental step is the ability to attain

concrete concepts (the concrete operational stage) prior to abstract ones (the formal

operations stage). Self-worth is arguably quite abstract in nature, and therefore will likely

be challenging for children who have not reached the formal operations stage. Thus this

paper strived to address targetable constructs in order to proactively minimize negative

long-term consequences for as many individuals as possible.

Previous studies identified locus of control and health-related quality of life as

constructs independently important for one's overall positive development, and ones

which may be beneficial to incorporate in childhood treatment (Graff, et al., 2007; Rhem,

1998; Smith 1998; Frisch, 2005; Smith, 1970). They may be especially influential in the

development of abstract concepts such as self-worth given their more concrete nature.

Understanding and highlighting the relationships that exist among these variables will be

valuable for the scientific data base in order to decrease the prevalence of negative short-term and long-term effects following childhood trauma and adverse experiences. (Turner, Finkelhor, & Ormrod, 2010; Stein, Leslie, & Nyamathi, 2002). This study addresses the question of whether locus of control and health-related qualify of life significantly predicts self worth, and discusses associated implications.

Chapter II: Review of the Literature

Effects of Childhood Trauma and Adverse Experiences On Various Areas of

Functioning

Over time, childhood trauma has been connected to various psychological, neurobiological, and behavioral sequelae (Heim, Shugart, Craighead, & Nemeroff, 2010; Hillberg, Hamilton-Giachritsis, & Dixon, 2011; Norman, Byambaa, Butchart, Scott, & Vos, 2012). In the Adverse Childhood Experiences (ACE) study (Foege, 1998) researchers examined the long-term effects of adverse situations occurring during childhood, including experiences of direct trauma (psychological, physical, and/or sexual abuse), and experiences of indirect trauma (e.g., parental substance abuse, proximity to another's attempted suicide, family member with a history of imprisonment). Results of the ACE study indicated that the extent to which a person has long-term psychological and medical impacts lasting into adulthood following adverse childhood experiences was related to the intensity and duration of the trauma, as well as type and variation of traumatic events. While important in understanding effects of trauma and related observable characteristics, this study was conducted decades after the traumatic event had taken place, and the average participant was in his or her 50s; consequently, a gap remains in the literature that examines survivors of childhood trauma while they are still in their formative years. Therefore, the current research aimed to examine the influence of locus of control and health-related quality of life on self-worth within a population of children and adolescents who had previously experienced a range of traumatic

experiences, and who were in treatment. Findings of this study were intended to delineate a potential course of action for treatment.

Traditionally, the literature has placed a primary emphasis on the long-term effects of childhood trauma directly impacting the victim (e.g., childhood physical abuse, sexual abuse, and neglect). Consequences of such trauma include a range of mood disorders and anxiety disorders, as well as a risk for additional traumatic experiences and symptoms of posttraumatic stress disorder (Heim & Nemeroff, 2001; Hill, 2003, Kendler, Kuhn, & Prescott, 2004, Nemeroff & Vale, 2005). In a Centers for Disease Control study, Dube et al. (2001) reported that there is an increased risk of suicide attempts throughout the life span of patients with history of childhood physical and/or sexual abuse compared to those without a history of childhood physical and/or sexual abuse (Note: the study did not adequately specify the "without history of abuse" group's composition). Several meta-analyses have reiterated that direct experiences of child trauma may have small-to-moderate effects across various domains of adult mental health; these domains include psychological symptoms related to increased depressive symptomology and negative self-esteem, and eating disorders. Further, results suggested that previous experiences of abuse may result in a trend known as "the victim-perpetrator cycle," in which victims of child abuse are at an increased risk at becoming perpetrators of similar abuse (Hillberg et al., 2011).

As mentioned above, researchers have also studied the neurobiological and health consequences believed to be related to experiences of childhood trauma and abuse. Of note, researchers have highlighted differences in the hippocampus following adverse

experiences; magnetic resonance imaging (MRI) results have suggested that adults with abuse-related Posttraumatic Stress Disorder have seemingly reduced hippocampal volume (Bremner et al., 1997; Heim et al., 2010). A relationship between abuse history and quality of health has also been demonstrated in the literature. Specifically, it has been observed that individuals who had been previously abused are more frequent visitors to health-care establishments (e.g., hospitals and primary care physicians) (Jackson et al., 2015). Furthermore, specific traumatic experiences have been significantly correlated with the development of later health problems. For example, Widom, Czaja, Bentley, and Johnson (2012) observed that physical abuse history has a greater correlation with visual and oral issues in adulthood, whereas sexual abuse history is predominately correlated with hepatitis C (Widom et al., 2012). In regards to mental health the existing research has focused on highlighting on the connection between childhood abuse and resulting psychopathology in adulthood (e.g., depression, anxiety and PTSD).

Over time, the understanding of which experiences constitute as traumatic events has expanded beyond those directly performed against an individual him/herself to include indirect or vicarious experiences. In 2014 scientists attempted to observe behavioral and biological impacts of witnessing trauma first hand via mice research participants. Patki and colleagues (2014) saw that when one mouse witnessed physical aggression against another mouse, elevations of both anxious and depressed symptoms were evidenced. Additionally, both the socially defeated and the trauma witness mice demonstrated a decline in long term memory; previous findings suggested that emotion

displayed by a peer may impact learning and memory function (Patki, Solanki, & Salim, 2014).

Thus far, studies of indirect trauma predominately focus on vicarious trauma experienced by the health care professionals and first responders often exposed to the traumatic experiences of others. However, while few studies have taken steps to examine overall of effects of post-disaster on the mental health of a more general population, "disaster" is often described within a broad classification including human-made, technological, natural, or mixed-experience. Given the ambiguity of experiences that are able to fall under this umbrella, a single definition has been offered as one that describes disasters as "any incident or event that is extremely harmful and disruptive" (Tierny et al., 2001). This indicates that disasters may often involve populations which are both directly and indirectly exposed to the trauma (e.g., people who were forced to relocate, were exposed to the event through media) (Neria, Nandi, & Galea, 2008). However, unlike the research conducted with direct trauma, there is mixed understanding of the relationship between indirect exposure to trauma and maladaptive symptomology. For example, Neria and colleagues (2008) found that indirect exposure to attacks on the World Trade Center was not associated with risk of PTSD (Neria et al., 2006b), while other researchers found that such risk did exist following the Oklahoma City bombing (Pfefferbaum et al., 1999). This inconsistency suggests a complexity that goes beyond the event itself, correlating post-disaster PTSD with several factors (e.g., socio-demographic, event exposure, emotional states, social support, personality traits). There is a need for researchers to parse out the relationship of such factors as they relate to negative

outcomes (Nerla et al., 2008), and explore the specific consequences experienced by age-based populations (i.e., children and adolescents).

Increasingly, researchers are beginning to study how indirect trauma such as witnessing domestic violence effects children and adolescents. This can entail directly seeing or hearing the violence, being used as "pawns" between family members, or having to deal with the aftermath of an act of violence (e.g., an injured parent, inconsistent affection, police intervention, abrupt relocation). Although this is also a complex subject in need of further study a general list of problems associated with children witnessing violence includes: (1) increased externalizing symptomology (i.e., aggression, antisocial tendencies, temperament problems), and (2) increased internalizing symptomology (i.e., anxiety, depression, inhibition). These findings have been observed across samples of children witnessing violence (Edleson, 1999). Literature has also indicated that witnessing domestic violence may have negative consequences related to health and developmental well-being of children, however, clear correlates or predictors of particular negative outcome have been difficult to identify.

While it is both interesting and important to study the different outcomes related to specific types of trauma, recent studies have also implicated that the type of trauma may be less significant on overall outcomes in comparison to the impact of protective and/or risk factors (Faust, Alexander, & Ko, 2017). Given the active roles that children play in the construction of their social systems and cognitive schemas, it has been suggested that interventions and future studies should focus on individually tailored responses to trauma that build upon personal factors related to resiliency rather than the

specific etiology of the event (Holt, Buckley, & Whelan, 2008). For example, personal

and social difficulties have also been highlighted as negative consequences of adverse

experiences. Interpersonal relationships may suffer as a result of child trauma including

those between survivors and their future families (Stevenson, 1999). Furthermore,

literature has suggested that child sexual abuse is associated with future parenting

behaviors and maternal confidence (Roberts, O'Connor, Dunn, & Golding, 2004).

Women who have experienced prior child sexual abuse may be more likely to provide a

nontraditional home for their offspring in terms of parental dynamic (i.e., mother and

stepfather). However, these women are less likely to seek out marriages that would

include or encourage the relationship between step-siblings (Roberts et al., 2004). This

finding may be attributable to others which suggest that childhood sexual abuse is

associated with poor psychological well-being in mothers, as well as low maternal

enjoyment which may be exacerbated in complex families (Roberts et al., 2004).

Another area where previous literature has focused is family characteristics which

may predict the likelihood of a child experiencing trauma and/or abuse. An expansive

1998 meta-analysis encompassing 17 years of data delineated a wide range of associated

demographic, familial, parenting, and child-specific risk factors for physical abuse,

sexual abuse, and neglect (Brown, Cohen, Johnson, & Salzinger, 1998). Results depicted

only two factors as uniquely associated with the presence of physical abuse: low religious

attendance and substance use. Several factors were observed to be uniquely associated

with the presence of sexual abuse, including parental death, negative life events,

unwanted pregnancy, presence of a stepfather, and harsh punishment (Brown et al.,

1998). Furthermore, innate factors including female child gender and child disability

were also selectively associated with sexual abuse. Additionally, a total of 14 unique

factors were discovered to be uniquely associated with the presence of neglect. Neglect

was the only type of trauma associated with paternal factors, including paternal conflict,

paternal psychopathology, paternal sociopathy, low paternal involvement, and low

paternal warmth (Brown et al., 1998). Also, maternal factors were seen to be selectively

associated with the presence of neglect, including maternal alienation, maternal anger,

maternal hostility, and maternal low self-esteem (Brown et al, 1998). Additionally,

demographic factors that were depicted as uniquely associated with the neglect included

non-white ethnicity, large family size, and low income. Also, per the data, certain child

characteristics were uniquely associated with neglect, including anxious/withdrawn

behavior and a low verbal Intelligence Quotient (Brown et al., 1998). Finally, the authors

uncovered two factors significantly influenced the presence of each type of studied abuse

(physical, sexual, and neglect) which were maternal youth and maternal sociopathy

(Brown, Cohen, Johnson, & Salzinger, 1998). However, while it is important to identify

such risk factors, this study did not identify the manner by which these experiences

translate into long-term effects, nor did it consider ways to diminish them. While it would

be ideal to prevent adverse experiences from occurring, it is potentially more realistic for

professionals to first identify the effective ways to prevent long-lasting negative effects

that occur after traumatic experiences rather than the predictive factors that precede them.

It will behoove both researchers and clinicians to increase or maximize the effects of the

protective factors that may be seemingly absent in children following experiences of

trauma and abuse (e.g., internal locus of control, self-worth, adaptive coping skills).

Avenues that both researchers and clinicians may wish to explore for intervention

include ones that enhance posttraumatic growth (PTG) (Calhoun & Tedeschi, 2014). This

concept is based on the idea that positive change and benefits may result from

experiences with trauma. This relates to traditional writings across cultures and religions

including ancient Hebrew, Greek, and Christianity and to specific ideas within Hinduism,

Buddhism, and Islam, all of which address the possibility of positive transformation

following trauma (Tedeschi & Calhoun, 2004). In contrast to PTG, post traumatic stress

(PTS) often manifests as a negative physiological and/or psychological reaction

following trauma and the possibility of long-term negative consequences (Van der Kolk,

Greenberg, Boyd, & Krystal, 1985). Despite intuitive benefits and cross-cultural

applicability of PTG there is little-to-no research examining childhood trauma and

potential protective factors that may foster PTG versus PTS. However, as previously

mentioned, focus on individual characteristics may be a good start for mediating negative

outcomes and diminishing the likelihood of PTS. It has been suggested that self-

esteem/self-worth is an important element in developing adaptive coping mechanisms

and fostering PTG in the face of adverse experiences and trauma (Daniel & Wassell,

2002). Furthermore, Guille (2004) postulated that both self-esteem and locus of control

may contribute to one's ability to cope, and especially if the child in question is able to

build upon a specific self-concept domain (e.g., school, athletics), in which he or she is

most interested and confident in (McGee & Williams, 2000). Given the evidence for the

potential importance of global self-worth, locus of control, quality of life, and resiliency all were explored in the present study to delineate the importance of these variables in alleviating trauma response, and to facilitate tailored treatment resulting in various functional outcomes.

Global Self-Worth

It is important to note that synonyms of self-worth have been denoted as both self-concept and self-esteem, and some bodies of literature have not clearly differentiated amongst each term. This paper adopts the definition of global self-worth as the degree to which an individual: (1) likes him or herself as a person, (2) is happy with the way he or she is leading his or her life, and (3) is overall pleased with him or herself as a human being (Harter, 1988).

Contrary to the traditional view initially proposed by William James in the 1960s, Crocker and Knight (2005) argued that self-esteem and self-worth *are not* trait features of an individual. Instead, they are contingent upon the domains of life that an individual places emphasis on, as well as the level of focus dedicated to achieving maximum success in those domains (Crocker & Knight, 2005; James, 1968). In a study with college-aged individuals, the authors observed that individuals who primarily focused on internal factors (e.g., self-worth) reported more positive experiences in comparison to those who placed emphasis on external factors (e.g., appearance, academic achievement, others approval, etc.). Yet, the authors also pointed out that potential costs if focus becomes too dominant on any particular category of factors for an extended period of time. Examples of such costs include diminished quality in health, learning, and

relationships due to overwhelming focus on one area of life (Crocker & Knight, 2005).

Therefore, it was suggested that special emphasis should be placed on "learning goals",

or the idea that individuals are able to improve in several areas due to benefits associated

with exerting effort. The authors additionally indicated that placing self focus on domains

that go beyond the self and on to the community will create a longer lasting feeling of

satisfaction and worth for the individual (Croker & Knight, 2005).

In general, little research has been conducted regarding specific treatment

mechanisms that target self views in children. This may be in part due to the fact that

children have difficulty grasping the abstract concept of self-worth, which progresses and

changes throughout developmental stages (Harter, 1988; Piaget, 2000). Further research

should focus on how specific factors are valued and manifested across developmental

levels, as well as which ones may be emphasized in the face of childhood trauma.

Relationship between Adverse Childhood Experience and Self-Worth

Though sparse, previous literature began to explore the relationships between

child trauma and subsequent views of the self. Both teacher and student reports of self-

concept are consistently lower for children who have been maltreated versus those who

have not (Devi & An, 2013). Further, Devi and An (2013) found significant negative

correlations between physical abuse and self-concept, as well as between neglect and

self-concept. Additionally, the researchers found that external and community factors

significantly impact the level of variation among abuse in addition to one's view of

themselves following the trauma. For example, children below the poverty line appear to

be at a higher risk level to experience sexual, emotional, and physical abuse, as well as a

lower self-concept than children above the poverty line (Devi & An., 2013). Despite preliminary findings, there remains a lack of consistency in the literature regarding this issue. Devi and An (2013) reported that physical abuse is significantly correlated with negative self-concept more than other forms of maltreatment, while Turner, Finkelhor, and Ormrod (2010) suggested that only sexual victimization independently reduced one's self esteem. Therefore, while it is evident that one's idea of the self is related to their experience of abuse, further literature is needed in order to understand the extent of that relationship across various adverse experiences.

Self-worth has primarily been referenced within literature involving adult participants, and is generally depicted as a contributing factor to one's ability to adopt adaptive coping skills in the face of adversity. However, Harter (1988) stated that children do not start out interested in their self identity, Specifically, children are less concerned with concepts of the self overall, and tend to place greater importance on external factors (Harter, 1988). Such trends may be problematic in the long-term, as placing greater focus on external factors rather than internal factors, such as self-concept, after adversity may increase the likelihood of long-term negative consequences (Crocker & Knight, 2005). Additionally, researchers have observed that views of the self will fluctuate based upon a child's current developmental stage. Specifically, younger, pre-school level, children may report elevated perceptions of themselves in comparison to older counterparts (Black, Dubowitz, & Harrington, 1994). As previously mentioned, most children have not yet reached the formal operations stage of thinking, and therefore have a decreased number of domains used to define one's self in comparison to peers

with more abstract ideas of the self (Harter, 1988). Further, Erickson (1968) stated that as

children transition into adulthood, there is often a lack of conservation of the self.

Therefore, young individuals tend to develop different versions of themselves for each of

the different settings in which they regularly find themselves in, including home, school,

and specific social environments (Erikson, 1968).

It will benefit clinicians to identity and target determinants, moderators, and

predictors of self-worth when treating victimized children in order to avoid confusion and

maladaptive viewpoints of the overall self. Focus placed on specific and concrete internal

factors prior to focusing on abstract ones may promote immediate health behavior,

learning, and adaptive coping skills in children with a traumatic history. Thus, such

targeted variables may then act as stepping stones to increase self-worth into adulthood.

The current study examined both the impact of locus of control and health-related quality

of life as such internal factors in the reduction or tempering of traumatic effects. These

variables described below are believed to play an influential role within the relationship

between child trauma and self-worth.

Locus of Control

The term "Locus of Control" is categorized as either, "internal" or "external." The

former classification refers to one's tendency to believe that the way in which an event

unfolds is contingent upon his or her own behavior or permanent characteristics.

Alternatively, a person with greater levels of external locus of control may be more likely

to interpret events as a product of change, fate, and/or the unpredictable nature of the

forces surround oneself; such individuals may naturally believe that others have greater

control over outcomes than they do (Nowicki & Strickland, 1973; Nowicki & Duke, 2016). Historically, both clinicians and researchers have highlighted internal locus of control as the predominately valuable trait versus external locus of control (Harter, 1988; Callaghan & Papageorgiou, 2015). However, an adapted consideration postulates that a balance between internal locus of control with some level of external locus of control may lend itself to create healthier reactions in the face of negative events (Harter, 1988; Nowicki, 2018). Greenwald (1980) was one of the first to discuss such a balanced pattern of locus of control, which he called "beneffectance," or the tendency to accept internal responsibility for one's success and predominately view failures as the result of external factor contribution. Although some individuals could argue that such a balanced locus of control pattern may foster negative characteristics such as selfishness, narcissism, and defensiveness. The balance could also be argued as a means of self-preservation after failure in place of discouragement. In a modern consideration, flexible locus of control perspectives may be more applicable to clinical practice. For example, treatment providers often encounter a depressive individual who seemingly takes on greater responsibility for failures than what may be warranted (extreme internal locus of control), thereby stimulating a low sense of self-worth and hopelessness for change (Mirowsky & Ross, 1990; Mutlu, Balbag, & Cemrek, 2010). On the other hand, previous research has delineated that adult chronic pain patients who perceived outcomes to be predominately controlled by chance and external factors only (extreme external locus of control) were more likely to endorse greater feelings of burden related to medical morbidity, elevated scores on measures of helplessness, and increased levels of avoidance towards pain

management techniques (Crisson & Keefe, 1998; Henninger, Whitson, Cohen, & Ariely, 2012). The implications of both are able to foster long-lasting emotional and behavioral consequences that may impede overall functioning and self-worth. Notably, recent researchers have begun to consider that cultural characteristics may influence the development and interpretation of locus of control, and which variation is "favored" may fluctuate based on the personal traits valued in one's society (Adrianson, Ancock, Ramdhani, & Archer, 2013). Therefore, developing an adaptive balance between internal and external locus of control in children is a beneficial way of improving present and future functioning and self-worth instead of placing sole emphasis on internal locus of control alone.

Of specific interest for the purposes of this review, previous literature has noted the concrete ability to target locus of control in therapy exists. Again, the traditional view has focused on primarily fostering internal locus of control. Smith (1970) first indicated that individuals who endorsed greater internal locus of control following treatment for trauma had received personally tailored treatment emphasizing the development of new coping skills. A similar trend was seen later with clients who received biofeedback training and problem-solving interventions when coping with chronic illnesses (Duckworth, 1983), as well as with females who received art therapy and endorsed depression related to their diagnosis of HIV (Field & Kruger, 2008). All such studies highlight both the effectiveness of, and ability to target multiple treatments for, increased internal locus of control. Even still, Marks (1998) suggested that therapists and counselors should be wary of adopting blind acceptance that internal locus of control is

the most beneficial orientation. This view corresponds with ideas that demographic factors and combination of factors should be considered before reaching such a conclusion about goodness of fit between appraisal of control and effective coping for any given client (Marks, 1998). For certain cultures and belief systems, external locus of control is the norm and it would behoove practitioners to gain an understanding of their patients' personal views, values, and beliefs in order to best individualize treatment, facilitate change, and enhance functioning. Overall, diminishing unidirectional locus of control has been seen to translate into long-term beneficial outcomes lasting into adulthood and is targetable in treatment (Marks, 1998). While still limited, more recent literature has reiterated that there are times when the traditional preference of internal locus of control strategies can be counterproductive in treatment (e.g., when performing difficult sensorimotor tasks), and the ability to switch between external and internal strategies could contribute to a global physical and psychology benefits (Weiss, Reber, & Owen, 2008). It is up to to current researchers and clinicians to find the preferred ways to implement beneficial strategies and to accurately measure progress. Surprisingly, although it has been researched for years, there remains disagreement regarding the best way to measure locus of control. When Smith (1989) provided cognitive coping skills in therapy to college students struggling with test anxiety, post-treatment assessments did not show significant change in the students' overall locus of control on the "Internal-External" measure (Rotter, 1966; Rotter, 2011). Smith (1989) suggested that his results may have been attributable to the variety of factors measured on the scale including, "global social political beliefs" and "expectancies concerning one's behavioral

competencies." Smith believed that the latter was more readily influenced by the

acquisition of coping skills, while alternative external variables may be viewed as

measurement "noise." Since both scores contribute to the overall global score, the

researcher felt that the measure may not have been adequately defined or represented the

participants' true locus of control. Additionally, most locus of control research continues

to use measures which were constructed several years prior and have undergone minimal

revisions (Nowicki, Ellis, Iles-Caven, Gregory, & Golding, 2018). Despite the favorable

outcomes in validation studies (Nowicki & Duke, 2016), future research and updated

assessments may be helpful to better understand such relationships, and identify

appropriate measurements

Health-Related Quality of Life

In addition to locus of control, the current study examines the influence that

health-related quality of life may have in models of child trauma and self-worth.

Interestingly, previous research has depicted a positive relationship between locus of

control and health-related quality of life in stressful health settings (Courneya &

Friedenreich, 1999; Allen, Harifar, Cohen, & Henderson, 2000; Preau et al., 2005). As

the reactions to medical trauma can often mimic the reactions to other forms of trauma,

and quality of life has been assessed following such medical traumas and procedures. The

current study examined health-related quality of life as another factor that may predict

self-worth following other types of childhood trauma and self-worth.

Similar to the literature related to locus of control, studies have shown that health-

related quality of life is a construct that can be readily targeted in treatment (Graff et al.,

2007; Rhem, 1998; Frisch, 2005). For example, Graff et al. (2007) discovered that providing occupational therapy focused on skills to improve both health status and health quality for mild-to-moderate dementia patients increased caregiver reports of patients' overall well-being. Moreover, higher levels of baseline quality of life has been related to increasing positive attitudes within psychological treatment and overall life satisfaction (Rehm, 1988, Huebner, Suldo, Smith, & McKnight, 2004). The author postulated that cognitive theories of depression may be understood as "pervasive negativity about oneself" (Rehm, 1988), and relatedly, the Quality of Life Theory (Frisch, 2005) holds that negative self-evaluation and self-blame for one's own low life satisfaction (low quality of life) is a critical element in the development of depression. As such, Quality of Life Therapy (QOLT; Frisch, 2005) was given to clients with low levels of health-related quality of life and clinical depression. Taking into account the dropouts of the study (considered failures), 81% of participants adapted cognitions and behaviors, and results indicated significant decreases in depressive symptomology (Grant, 1995), highlighting the clinical relevance of emphasis on quality of life.

A closer look at Quality of Life Therapy has illuminated this model's focus on applying the "CASIO" model (Circumstances of an area, Attitude or perception/interpretation of an area, Standards of fulfillment for an area, the Importance for one's overall happiness, experiences in Other areas of immediate concern) to any area of life that may be causing dissatisfaction. The goal of this therapy is therefore to modulate the impact that any one area of life may have on overall quality of life, increase quality of life, and ultimately improve both individual and global satisfaction (Frisch,

2005). Self-esteem/self-worth happens to be one such area of life that has been related to overall quality of life (Frisch, 1992). Failures to meet self-assigned standards of success in a given domain (e.g., school, work, personal relationships) has the ability to cause individuals to disparage themselves (Frisch, 1992). Therefore, QOLT strategies that place focus on simultaneously increasing self-esteem and behavioral competencies in valued areas of life may improve overall life satisfaction (Frisch, 2005). Although QOLT has depicted promising results, the literature has primarily focused on its application with adults. It will benefit future research to examine if the improvement of health-related behaviors will influence self-worth with children and adolescents following traumatic experiences and not assume equal outcomes as with adults.

In a reverse manner to the design of the upcoming proposed study, the existing pediatric literature has examined the effect that pediatric trauma has on health quality after the fact (i.e., when survivors have reached adulthood). Researchers in this endeavor have demonstrated ongoing disability and decreased health-related quality of life following trauma (Aitken et al., 2002; McCarthy et al., 2006; Winthrop et al., 2005). Similarly, research has shown that both adults and youth with a history of childhood abuse and/or maltreatment are more frequent visitors to emergency rooms and physician offices than non-abused counterparts (Jackson et al., 2015). As such, it is clear that a relationship exists between quality of life and self-worth, although the extent of which remains to be explored. Regardless, results have successfully begun to highlight the potential benefits of targeting this construct in treatment as a protective factor against long-term consequences after childhood trauma.

Currently, measures of pediatric health-related quality of life are predominately used after an individual receives a diagnosis of a specific medical condition. As such, most of the existing qualitative literature focuses on such populations. A 2009 study found that both self-perception and reports of quality of life were significantly lower in pediatric participants classified with child obesity than those without (Griffith, Parsons, & Hill, 2010). However, another study found no significant relationship between health-related quality of life and self-perception in children engaging in hormone treatment for children with idiopathic short stature (Theunissen et al., 2002), indicating a complex and multilayered relationship. Interestingly, there remains a limited amount of research assessing perceived quality of life following adverse childhood experiences despite the negative outcomes that they can have on overall health. The current study therefore hoped to bridge this gap, especially given the impact that such experiences also have on self-worth, as well as the aforementioned relationship between quality of life and self-worth seen in adult-based studies. The study operationalized pediatric quality of life as an individual's perceived overall health across domains of physical and psychosocial functioning (i.e., emotional, social, and school functioning), and it is assessed as such via the Pediatric Quality of Life measure (Varni, Seid, & Kurtin, 2001).

Resiliency

Resilience has been formally defined in literature as the capacity of the individual to achieve positive and healthful outcomes despite the adversity (Cichetti & Curtis, 2006; Ungar 2008; Tanaka et al., 2011). Generally, there are limited sources within the existing scientific bank which focus on the development of resiliency following childhood trauma,

abuse, and/or maltreatment. However, preliminary efforts have suggested that children

who have experienced multiple events of abuse or neglect are more likely to have

negatively impacted resilience features in comparison to children who have experienced

single events of trauma (Collin-Vézina, Coleman, Milne, Sell, & Daigneault, 2011).

Interestingly, early efforts to understand resiliency following childhood trauma have

often grouped resiliency and self-esteem/self-perception as traits that are similarly

affected (Daigneault, Dion, Hebert, & Collin-Vézina, 2010). Further, Salami (2010)

found that both resilience and self-esteem moderated the relationship between exposure

to violence and PTSD symptoms. However, there is an element of difficulty when

generalizing these findings, as it was conducted with a fully Nigerian sample and traits

closely related to self-identity may differ across cultures.

Gaps remain in the literature regarding the mechanisms within the resiliency and

self-worth relationship, as well as the implications of this relationship for purposes of

treatment. Additionally, there is an added level of complexity regarding both resiliency

and self-worth research due to inconsistent language and newly developing constructs.

For example, in a 2011 study, Tanaka, Wekerle, Schmuck, Paglia-Boak, and the MAP

Research Team focused on "self-compassion" (an orientation towards seeing the world,

self, and others in a realistic and kind manner) as a candidate construct for increasing

resilience features. The study did not adequately differentiate this self-compassion trait

from that of self-worth or self-perception, and the authors were left to make inferences in

regards to their similarities. Findings indicated that self-compassion may be one avenue

by which empirically based treatments (e.g., trauma-focused cognitive behavioral

therapy, acceptance and commitment therapy) may enhance resiliency post childhood

maltreatment (Tanaka et al., 2011). Yet, there remains a lack of information regarding the

specific mechanisms and individualized application of such treatments.

Although not originally proposed within the study's structure, a measure of

resiliency was introduced to the design part-way through the process as a logical and

necessary, "next step." As such, a smaller sample size reflects the total number of

participants who received all four measures (N=20), and results should be interpreted as a

reflection of preliminary efforts to bridge that gap and explore the relationship between

resiliency and self-worth, and to also incorporate findings into the relationship among all

variables discussed in this paper (i.e., self-worth, resiliency, locus of control, health-

related quality of life).

Discussion of Literature Review

In summary, the findings of this review suggests that: (1) self worth may suffer

following childhood trauma but little knowledge exists in regards to specific mechanisms

to improve this during childhood treatment, (2) an adaptive balance between internal and

external locus of control relates to one's ability to appropriately adapt in the face of

adversity (Harter, 1988), and (3) a positive health-related quality of life view may create

a sense of medical self-efficacy, thereby contributing to overall positive self-worth.

Although previous studies have made findings suggestive of an existing relationship

among all variables of locus of control, health-related quality of life, and self-worth, there

is a lack of research exploring the depth of these relationships for understanding and

treatment application. Furthermore, existing literature tends to place emphasis on one

specific variable rather than several within a cohesive model. For example, Marche, Briere, and Baeyer (2016) sought to increase understanding of children's ability to forget pain-related memories. They found that health-related self-efficacy is a primary predictor of adolescent memory performance in regards to painful memories (Marche, Briere, & Baeyer, 2016). The study utilized a self-efficacy questionnaire containing items regarding a patient's ability to tolerate certain levels of pain despite high levels of discomfort. Although this finding is not an official construct of locus of control, the pattern may shed light on the importance of both locus of control and health-related quality when determining self-efficacy (Marche, Briere, & Baeyer, 2016). Of note, self-efficacy may be considered more specific and task-based than global self-worth, the two are often associated and grouped together within literature, and thus may be impacted in a similar way.

The goal of the present study was to examine the potential for locus of control and health-related quality of life to predict the relationship between childhood trauma and global self-worth. Due to the relationship among all variables, it was predicted that a balanced locus of control and high health-related quality of life scores would be related to a decreased number of negative effects on self-worth following childhood trauma. The present study hoped to elucidate the role that locus of control and quality of life may have on self worth, the interconnectivity of all variables, and the implications for both short and long term benefits. The ability to target either, or both, locus of control and health-related quality of life in treatment could promote the candidacy of these variables as targetable treatment factors that may impact the more abstract concept of self-worth.

Specifically, such results would advocate for emphasis to be placed on enhancing one or

both variables through behavioral and cognitive techniques that instill a sense of

increasing health quality and/or increasing sense of control over one's own life.

Chapter III: Research Study Design

Study Aims

The following study was designed to understand the potential influence locus of control, and health-related quality of life has on global self-worth following childhood trauma. Further, the study aimed to delineate any characteristic trends among these variables that should be accounted for when formulating treatment plans. The study was approved by the Nova Southeastern University Institutional Review Board in July of 2016. It received continued approval in June of 2017, lasting until the study's termination.

Method

Design and Procedures

Participants were recruited from a local university-based mental health clinic specializing in treatment of children with trauma histories. Eligible individuals were informed that participation was optional and that their decision would not impact therapy. If parental consent and participant assent were obtained, then the clinician administered the measures listed below.

Measures

(1) **"What Am I Like" Harter Scale of Self-Perception** (Harter, 2012). This instrument measures relevant domains related to self-concept and global self-worth. Items are tailored to specific age ranges (i.e. children' vs. 'teenagers). For children aged 8-13 years, the instrument examines five specific self-concept domains: scholastic competence, athletic competence, social competence,

physical appearance, and behavioral conduct. In addition, there is the separate

subscale for global self-worth. There are a total of 36 items, six for each subscale.

For individuals aged 14-19 years, the instrument utilizes the six domains already

described as well as three additional domains particularly relevant during

adolescence: close friendships, romantic appeal, and job competence. As a result,

this form has a total of 45 items. The validation study indicated that mean scores

range from 3 to 3.1 within all the subscales. According to Harter (2012), self-

worth scores of 3.5 and above are considered high, and self-worth scores of 2.3

and below are considered low. Results from the validation study revealed

acceptable internal consistency reliability (α = .71 to .91) and convergent validity.

(2) **Nowicki-Strickland Locus of Control Scale** (Nowicki & Strickland, 1973).

This is a 40-item test with a Yes/No response format that measures the locus of

control (LOC) of children aged 8-18 years. Higher scores ($\geq$12) reflect a more

external locus of control, while lower scores (<12) reflect an internal locus of

control (cut-off provided by Fisher, Beech, and Browne [1998]). The test

developer conducted a validation study that indicated acceptable internal

consistency reliability (α= .65 *to* .88) and convergent validity (Nowicki & Duke,

2016). The results of more recent research revealed that the average test-retest

reliability of this measure is r = .75 (Beretvas, Durham, & Yarnell, 2008).

(3) **Pediatric Quality of Life Inventory** (PedsQL; Varni et al., 1999). This is a 23-

item measure created to evaluate the health-related quality of life of children and

adolescents aged 8-18 years. This instrument measures specific domains of

physical functioning, emotional functioning, social functioning, and school functioning. The combination of these domains yields a total scale score representing overall health-related quality of life, a physical health summary score, and a psychosocial health summary score. The test developers established that a score greater than or equal to 83 indicated an individual who views their overall quality of life as "healthy." A score between 76-82 indicates individuals with *minor* health-care concerns, 71-75 indicates *moderate* health concerns, and less than or equal to 70 indicates *major* health concerns (Huang, et al., 2009). Psychometric analyses conducted by Huang et al. indicated acceptable internal consistency reliability (α=.88) and convergent validity.

(4) **The Child Youth Resilience Measure** (CYRM; Liebenberg, Ungar, & LeBlanc, 2013). This is a 26-item measure that evaluates the level of resiliency in youth across various cultural groups aged 5-23 years. Psychometric analyses conducted by Liebenberg, Ungar, & LeBlanc (2013) indicated acceptable internal consistency reliability (α=.84).and content validity, although convergent validity remains unknown. This instrument yields a total scale score to reflect overall resiliency, although a cut-off value for the total scale score has not yet been established. The test developers have conducted preliminary studies suggesting that individuals producing higher total scale scores tend to have a greater number of, and more salient, characteristics often associated with resiliency (e.g., family support, optimism). Additionally, there are three subscales that may be evaluated independently: individual, relationship with caregiver, and context.

Participants

The final sample (N=61) consisted of 31 males and 30 females between the ages of 8-16 years (*M*=11.89, *SD*=2.49), all of whom were survivors of varying types of trauma. Of the 61 participants, 13.1% experienced physical abuse, 13.1% experienced neglect/emotional abuse, 6.6% experienced sexual abuse, and 14.8% experienced a combination of direct trauma. Of the 61 participants 8.2% witnessed abuse against another individual and 44.3% experienced another form, or a combination of, indirect trauma. Furthermore, 43.4% of the participants identified as Caucasian, followed by 23.8% Hispanic/Latino, 13.2 % African American, 9.4% Multiracial/Other, and 3.8% Asian/Pacific Islander. All participants continued their planned therapeutic interventions with their clinician during and following data collection.

Hypotheses

It was hypothesized that (1) *self-worth would be negatively correlated with locus of control and positively correlated with health-related quality of life*. These proposed relationships stem from previous literature that suggests internal locus of control, health-related quality of life, and self-worth as probable protective factors against negative behaviors and outcomes.

It was also hypothesized that (2a) *both locus of control and health-related quality of life would significantly predict self-worth*. Additionally, (2b), it was hypothesized that the effects of locus of control and health related quality of life will depend on type of trauma; that is, *the addition of the trauma type and interaction effects (locus of control—X—trauma type and health-related quality of life—X—trauma type) into the regression*

model will increase the explainable variation in self-worth above that of the original

model. Specifically, the self-worth of children with experiences of direct trauma was

expected to be more influenced by locus of control and health-related quality of life than

children with experiences of indirect trauma. This was postulated because survivors of

direct trauma may be more likely to have consistently negative representations of all self-

related variables given the personal nature of the trauma. On the other hand, survivors of

indirect trauma may have fluctuating views of the self, altered by multiple factors, but

have overall more positive views. In addition, for supplementary analysis purposes,

outliers and their potential impact on the final regression model were examined.

Analysis Plans

The level of significance was set at $\alpha = .05$ for each statistical test. All statistical

tests were conducted using IBM-SPSS 24.0 (IBM Corp., 2016). The main data analyses

were carried out in the following steps.

Main Data Analyses

Hypothesis (1)

All Pearson correlations between locus of control (IV_1), health related quality of

life (IV_2) and self-worth were calculated (DV).

Hypotheses (2a + 2b)

A multiple linear regression was conducted to evaluate if locus of control (IV_1)

and/or health-related quality of life (IV_2) significantly predicted self-worth (DV). Then, a

hierarchical linear regression was used to examine whether the first regression equation

depended on trauma type and the ensuing interaction effects. The independent variables

within step two of the hierarchical regression analysis included: locus of control, health-related quality of life, trauma type, quality of life–X–trauma type, and locus of control–X–trauma type. The addition of these terms did not produce a better model, and thus, a new hierarchical regression was run to examine the impact of adding only the trauma type to the original model. The addition of trauma type to the model significantly increased the explained variance in self-worth. The assumptions underlying this final regression were evaluated by plotting the standardized residuals (Y-axis) against the predicted values (X-axis) (Stevens, 2015). Despite there being a non-significant interaction effect between trauma type and either independent variable, the specific impact of trauma was examined through split file analysis procedures for purposes of tailored treatment recommendations.

Exploratory Data Analyses

Self-Perception Subcategories

Exploratory analyses were conducted separately to evaluate which self-worth subdomains of (1) physical appearance, (2) athletic competence, (3) scholastic competence, (4) social competence, and (5) behavioral conduct were most significantly predicted by the independent variables.

Resiliency

Exploratory analyses were conducted to examine whether (1) the impact of health-related quality of life on resiliency is mediated by self-worth, (2) the impact of locus of control on resiliency is mediated by self-worth, (3) the impact of health-related quality of life on self-worth is mediated by resiliency, and (4) the impact of locus of

control on self-worth is mediated by resiliency. The mediation analyses were conducted

by testing the indirect effects in the models using the SPSS PROCESS macro developed

by Hayes (2013). Due to the small sample size of individuals who completed the

resiliency measure (n=20), no stratified/split file analysis was conducted in this portion of

the study (i.e., all individuals were examined together). A Pearson correlation was

calculated between self-worth and resiliency as an additional means to examine the

relationship between the two variables in comparison to each one's relationship with

locus of control and health-related quality of life.

<div align="center">**Results: Main Analyses**</div>

Hypothesis 1

No significant correlation existed between self-worth and locus of control (r=-

.060, p=.645); however, the predicted positive correlation between self-worth and health-

related quality of life was illuminated (r=.419, p=.001). The latter finding reflected that

higher ratings of self-worth were associated with higher ratings of health-related quality

of life. Although not proposed in the initial hypothesis, a significant negative correlation

existed between health-related quality of life and locus of control *(r=-.338, p=.008)*. This

finding suggested that a higher external locus of control was associated with a lower

health-related quality of life, and, conversely, that an internal locus of control was

associated with a higher health-related quality of life. Therefore, the hypothesis that self-

worth would be negatively correlated with locus of control was rejected, but the

hypothesis that self-worth would be positively correlated with health-related quality of

life failed to be rejected. An exploratory stratified analysis revealed that when the sample

was split by trauma type (direct trauma, n=29; indirect trauma, n=32), which was again

completed primarily for purposes of treatment recommendations, only the direct trauma

group maintained these significant correlations. The influence of trauma type was

analyzed later in the regression models exploring hypothesis 2b.

Hypotheses 2a + 2b

The multiple linear regression with locus of control and health-related quality of

life predicting self-worth was significant overall. Only health-related quality of life was

an individual predictor (t=3.57, p=.001), explaining 18% of the variance in self-worth.

Therefore, the hypothesis that a model containing locus of control and health-related

quality of life would significantly predict self-worth was retained; however, the

hypothesis that each of the proposed IVs would independently predict self-worth was not

retained.

Results revealed that adding the effects of trauma type and the ensuing interaction

terms (trauma type—X—locus of control and trauma type—X—health-related quality of

life) to the original model did not significantly improve the model fit (R^2_{change}=.096,

F_{change}[3,55]=2.43, p=.075). Given that this hierarchical regression did not increase the

variance explained in self-worth, the regression model was re-estimated without the

interaction terms. This new hierarchical regression design added only trauma type to step

2 of the analysis. The result of this new hierarchical regression showed that the addition

of the trauma type variable significantly improved the variance explained in self-worth

over-and-above that which was explained by the original model (R^2_{change}=.079,

F_{change}[1,57]=6.11, p=.016) (Table 1). Results from the model revealed that the effect of

Table 1

ANOVA Table for Each Model

	F	p	t	p	sr
Original Model					
Overall	6.52	.003	-	-	
Model Variables					
PedsQL	-	-	3.57	.001	.424
LOC	-	-	.730	.468	.087
Model w/ Trauma Type & Interactions Added					
Overall					
Model Variables	4.26	.002	-	-	-
PedsQL			1.37	.177	.156
LOC	-	-	-.611	.544	-.070
Trauma Type	-	-	.179	.859	.020
Trauma*PedsQL	-	-	-.443	.659	-.051
Trauma*LOC	-	-	.820	.416	.094
Model w/ Only Trauma Type Added					
Overall	6.77	.001	-	-	-
Model Variables					
PedsQL	-	-	3.23	.002	.367
LOC	-	-	.476	.636	.054
Trauma Type	-	-	2.47	.016	.281

health-related quality of life remained an individual significant predictor (t=3.22, p=.002), and explained 14% of the variance in self-worth. Locus of control remained a non-significant predictor. The trauma type variable was a significant individual predictor as well (t=2.47, p=.016) and explained 8% of the variance in self-worth.

Examination of the scatterplots depicting the data of this final model demonstrated random and approximately equal variance over and above zero (See Appendix). Therefore, the assumptions of regression analysis were not violated. One possible outlier was identified within the scatterplot, and was removed from the model in

order to delineate its overall individual impact. The removal of said data point did not significantly alter the model, suggesting that the identified participant did not have a significant influence on the dataset. Specifically, the model was still a significant with PedsQL and trauma type as the significant individual predictors after the removal of the identified participant (F=8.06, p<.001; PedsQL t=3.79, p<.001, sr^2=.18; trauma type t=2.20, p=.032, sr^2=.06). It is possible that the outlier reflected an atypical, yet valid, response pattern. Therefore, this participant was left in the final model to fully describe the population in question.

Overall, the final scatterplot affirmed that (1) the regression model with locus of control, health-related quality of life, and trauma type explained the most variance in self-worth, (2) all assumptions of regression were met, (3) the final model was significant (F=6.77, p=.001), and (4) health-related quality of life and trauma type independently predicted global self-worth over and above locus of control, accounting for approximately 13% of the variance in self-worth and 8%, respectively. As such, the hypothesis that the addition of the trauma type and the interaction effects (locus of control—X—trauma type and health-related quality of life—X—trauma type) into the regression model will increase the explainable variance in self-worth above that of the original model was rejected overall, as only trauma type produced significant change.

Stratified/split file analyses were run to examine each trauma type independently of the other in order to once again provide tailored treatment recommendations, despite non-significant interaction effects (Table 2). The sample of children who experienced direct trauma (n=29) mirrored the findings from the "Original Model" (i.e., a significant

Table 2

ANOVA Models Stratified by Trauma Type

	F	p	t	p	sr
Direct Trauma Model					
Overall	3.48	.046	-	-	-
Model Variables					
PedsQL	-	-	2.19	.038	.381
LOC	-	-	-.216	.830	-.038
Indirect Trauma Model					
Overall	2.12	.138	-	-	-
Model Variables					
PedsQL	-	-	1.92	.065	.332
LOC	-	-	1.10	.280	.191

overall model with health-related quality of life being the only significant individual

predictor). The sample of children who experienced indirect trauma (n=32) did not show

an overall significant model.

A final follow-up regression analysis was conducted in the primary analysis in

order to highlight which of the four PedsQL subscales (i.e., physical, emotional, social,

scholastic) had the greatest influence on self-worth. Given the previous finding, this

follow-up portion was initially examined only in the direct trauma group; however, no

individual subscales were significant. To further explore this question, the whole sample

was examined and the results indicated that the social domain of health-related quality of

life significantly predicted self-worth over-and-above the other domains ($t=2.67$,

$p=.010$), and explained 10% of the variance.

Results: Exploratory Analyses

Self-Perception Subcategories

In an identical manner to the main analysis, the first exploratory analysis involved multiple linear regressions which evaluated the association between locus of control (IV_1) and health-related quality of life (IV_2) with the specific subscales (scholastic competence, physical appearance, behavioral conduct, athletic competence, social competence) of the "What Am I Like" self-worth scale (DVs), and whether those associations depended on the trauma type. Each subscale analysis was examined individually.

Scholastic Competence

The prediction of scholastic competence was not significantly improved by the addition of trauma type to the IVs, nor were the interaction effects significant. Therefore, the model was estimated with locus of control and health-related quality of life as the only predictors and a direct trauma vs. indirect trauma comparison was not made. A significant regression model was observed ($R^2 = .112$, $F[2,58]=3.67$, $p=.032$) and health-related quality of life was an individual significant predictor of scholastic competence ($t=2.56$, $p=.013$), and accounted for 10% of the overall variance.

Physical Appearance

Physical appearance, too, was not significantly improved by the addition of trauma type or interaction effects to its regression model, so it was predicted with locus of control and health-related quality of life and a direct vs. indirect trauma comparison was not made. The regression model did not significantly predict physical appearance scores ($R^2 = .085$, $F[2,58]=2.71$, $p=.075$).

Behavioral Conduct

The prediction of behavioral conduct was also not significantly improved after adding the trauma type term or interaction effects to its regression model, so it was predicted with only locus of control and health-related quality of life and did not warrant a direct vs. indirect trauma comparison. The resulting regression model was not significant (R^2 =.078, F[2,58]=2.45, p=.095).

Athletic Competence

When adding the trauma type term to the prediction of athletic competence, the model improved significantly (R^2_{change}=.082, F_{change}[1,57]=5.55, p=.022). This finding led the researcher to explore the differential relationships between the variables in each of the trauma type groups for purposes of treatment recommendations. Within the direct trauma group, a significant model for locus of control and health-related quality of life predicting athletic competence was observed (F[2,26]=3.78, p=.036). Internal locus of control was observed as an individual predictor of more perceived athletic competence in this group (t=-2.74, p=.011) and explained 22% of its variance. Within the indirect trauma group, the model did not significantly predict athletic competence.

Social Competence

Lastly, the prediction of social competence was not significantly improved after adding the trauma type or interaction effects to its regression model, so it was predicted with only locus of control and health-related quality of life and did not warrant a direct vs. indirect trauma comparison. The resulting regression model was not significant (R^2=.010, F[2,58]=.305, p=.738).

Resiliency

Results indicated that (1) the indirect effect of health-related quality of life on resiliency through self-worth was significant (β = .104, Lower Limit Confidence Interval [LLCI]=.016, Upper Limit Confidence Interval [ULCI]=.309). This finding shows that if one child is one standard deviation higher in health-related quality of life than another, the child is estimated to be .104 standard deviations higher on resiliency as a result of the effect of health-related quality of life on self-worth, which in turn influences resiliency. However, health-related quality of life did not significantly predict resiliency (F=1.69, p=.210).

No other significant mediation results were observed. Specifically, (2) the indirect effect of locus of control and resiliency through self-worth was not significant. Then, it was observed that (3) the indirect effect of quality of life on self-worth through resiliency was not significant. Lastly, (4) the indirect effect of locus of control on self-worth through resiliency was not significant. Upon closer inspection of this latter analysis, the regression model in which locus of control and resiliency predict self-worth was significant (F=3.80, p=.043); however, neither resiliency nor locus of control independently predicted self-worth (t=2.02, p=.059; t=-1.13, p=.275, respectively).

Additional analysis with these variables indicated that self-worth and resiliency were significantly correlated (r=.507, p=.022). Resiliency was not significantly correlated with either health-related quality of life or locus of control.

Chapter IV: Discussion and Implications

Discussion: Main Analyses

The current study successfully highlights health-related quality of life and trauma type as significant predictors of global self-worth. Furthermore, the social domain of quality of life was depicted as a significant predictor of self-worth in the overall sample. Therefore, the emphasis on health-related quality of life, along with the development of social skills and social support structure, may all act as protective factors against long-term negative consequences following adverse experiences. The finding that the interaction terms were not significant predictors suggested that the relationships observed between the IVs and self-worth were not dependent on type of trauma; however, because the trauma type variable itself was a significant individual predictor, the conclusion was made that type of trauma can in-and-of-itself determine self-worth beliefs.

Limitations

This researcher considered that there may be potential limitations with generalizing the participant pool due to demographic factors and sample size. Additionally, possibly influential factors such as treatment availability and level of familial/caregiver support went unexplored in this study. Previous research has already depicted familial conflict as a significant mediator between childhood adversity and positive outcomes (Wright, Masten, & Narayan, 2013). It will be beneficial for future clinicians to study these additional individual factors and consider differential clinical presentations when formulating treatment. Additional limitations include difficulty in confidently making causal inferences, as the study was a cross-sectional design and the data were only collected at the onset of treatment. Finally, the need for multimodal methods

of data collection should be considered for future research, as the current study only used one

self-report measure for each proposed construct. Furthermore, future researchers should clearly

define each desired variable prior to selecting the measures. Lastly, further research is suggested

for verification of validity and reliability of results given the limited sample size, localized

participant tool, and preliminary nature of this as a study not yet verified by replication analyses.

Despite limitations the findings of this study contribute to to the science of implementing

personalized, effective, and efficient treatment following childhood adversity.

Overall, the main analysis builds on the foundations established by previous childhood

trauma researchers. Notably, this study suggests a two-fold predictive model that establishes both

the nature of the trauma and quality of life beliefs as highly impactful on a child's overall self-

worth. Previous studies have attempted to answer the question of whether the trauma or the

individual is more predictive of positive vs. negative outcomes (Faust, Alexander, & Ko, 2017),

but the data from this study support that both are imperative in understanding the complexities of

these variables. Given the juvenescence of this area of research, further exploration is

recommended.

Discussion: Exploratory Analyses

The associations between the independent variables (locus of control and health-related

quality of life) and the different self-worth subscales (scholastic, physical, athletic, behavioral,

and social) demonstrated considerable variability. Specifically, health-related quality of life only

significantly predicted the scholastic competence subscale, but not physical, athletic, behavioral,

or social. Previous research has implicated self-confidence in academic performance as an area

that tends to decrease within general populations as individuals transition from childhood to

adolescents, subsequently hindering overall reports of self-esteem (Wigfield, Eccles, Mac Iver, Rueman, & Midgley, 1992; Wigfield & Eccles, 1994; Wang & Holcombe, 2010). The results of the exploratory analysis suggest a means to target both the specific area of scholastic competence and the broad area of global self-worth via health-targeted treatment. Further, the results depicted the athletic competence subscale was the only one that depended on trauma type (i.e., internal locus of control significantly predicted athletic competence in the direct trauma type group only). Although literature is scant in regards to how athletic performance specifically relates to overall self-esteem and self-worth, previous researchers of self-worth have suggested that the factors which influence self-worth often relate to those that the individual emphasizes or focuses on (Harter 1985; Feltz, 1988). Notably, athletic performance involves body integrity, and as a result of being physically and/or sexually abused, one's body and physical ability is violated or called into question (Neziroglu, Khemlani-Patel, & Yaryura-Tobias, 2006; Margolin & Vickerman, 2007). Therefore, it may be may be those who can overcome this, or who had better physical integrity to begin with prior to abuse function better when athletic strengths are incorporated within treatment. Overall, the results of this analysis further illuminated the complexity involved when attempting to break down and understand the various components of self-worth, thereby reiterating the potential benefits of individualized treatment, as well as additional future research.

        The second exploratory analysis revealed that self-worth significantly mediated the prediction of resiliency by health-related quality of life. This was the only mediating effect depicted among the four variables examined. However, it was observed that the combined model with locus of control and resiliency was a significant predictor of self-worth, despite the fact that locus of control was not significantly depicted as a significant

predictor of self-worth in the main analyses. Neither locus of control nor resiliency individually predicted self-worth. Previous literature has depicted resiliency as a protective factor against short and long-term adjustment following negative experiences, and the correlational results of the present study affirmed its importance as one of equal caliber with self-worth.

Overall, this study does not directly confirm or reject previously conducted literature regarding resiliency. However, this was not necessarily the intent as past researchers sought to examine if resiliency moderated the relationship between trauma, and if survivors developed negative consequences following the adversity. The present study instead acknowledged that negative consequences are all but inevitable, and then sought to understand how the selected variables (locus of control, health related quality of life, self-worth, and resiliency) may interact and possibly combat the intensity of such consequences.

Resiliency, like self-worth, is an abstract concept which is difficult to target in treatment. As such, the ability to improve an individual's locus of control, understanding of themselves (related to self-worth) and quality of life beliefs may in turn contribute to the development of resilient traits if the strong relationship between the variables hold true across studies. It should be noted that this analysis was conducted with a much smaller population size, consisting of 20 individuals, in comparison to the rest of the study and may therefore may not have been an adequate representation of a more generalized population. Future research should explore the development of resiliency, both independently and with self-worth, following adverse experiences.

Clinical Applications: Moving Forward

      The implications of this study, arguably above all other findings, is that there are intricate and complex relationships among personal factors following traumatic experience and it is imperative to continue research in this area. As such, it is critical that each individual receives a thorough clinical intake prior to initiating treatment, with emphasis on variables depicted as influential on self-worth in the current study (i.e., health-related quality of life, trauma type). Results of the study additionally shed light on a need for programs facilitating positive growth (e.g., self-worth and resiliency) following trauma. The tenets incorporating positive growth relate to the theoretical bases of positive psychology and other third waves of therapy. One such wave may expand on Ruini and Fava's (2004) developed approach of Well-Being Therapy (WBT) which places therapeutic focus on positive aspects of the self, rather than the negativity of previous experiences. WBT is based in the ideas of Ryff's (1989) model of psychological well-being, with an underlying goal to develop self-related dimensions from impaired to optimal levels via cognitive restructuring. An individual's locus of control, quality of life, global self-worth, and resiliency cohesively integrate with such dimensions. Therefore, while WBT has traditionally focused on adults, the present study takes a preliminary step to apply it for younger individuals. It would be a beneficial and intuitive next step for future studies to examine the potential efficacy of adding this tailored approach, while placing emphasis on the observed variable relationships discussed in this paper. It is imperative to also find additional relationships across biopsychosocial variables that may

predict self-worth. Bringing growth and personal strength to the forefront of therapy may

help to alleviate negative consequences as well as instill a survivor mindset.

References

Adrianson, L., Ancok, D., Ramdhani, N., & Archer, T. (2013). Cultural influences upon

    health, affect, self-esteem and impulsiveness: An Indonesian-Swedish

    comparison. *International Journal of Research Studies in Psychology, 2*(3), 25-

    44.

Aitken, M. E., Tilford, J. M., Barrett, K. W., Parker, J. G., Simpson, P., Landgraf, J., &

    Robbins, J. M. (2002). Health status of children after admission for injury.

    Pediatrics, 110(2), 337-342.

Allen, L. L., Haririfar, M., Cohen, J., & Henderson, M. J. (2000). Quality of life and

    locus of control of migraineurs. *Clinical Excellence for Nurse Practitioners: The

    International Journal of NPACE*, *4*(1), 41-49.

Bediako, S. M., Lavender, A. R., & Yasin, Z. (2007). Racial centrality and health care

    use among African American adults with sickle cell disease. *Journal of Black

    Psychology*, *33*(4), 422-438.

Beretvas, S. N., Suizzo, M. A., Durham, J. A., & Yarnell, L. M. (2008). A reliability

    generalization study of scores on Rotter's and Nowicki-Strickland's locus of

    control scales. *Educational and Psychological Measurement*, *68*(1), 97-119.

Black, M., Dubowitz, H., & Harrington, D. (1994). Sexual abuse: Developmental

    differences in children's behavior and self-perception. *Child Abuse &

    Neglect*, *18*(1), 85-95.

Bremner, J. D., Randall, P., Vermetten, E., Staib, L., Bronen, R. A., Mazure, C., ... &

    Charney, D. S. (1997). Magnetic resonance imaging-based measurement of

hippocampal volume in posttraumatic stress disorder related to childhood

physical and sexual abuse—a preliminary report. *Biological psychiatry*, *41*(1), 23-

32.

Brown, J., Cohen, P., Johnson, J. G., & Salzinger, S. (1998). A longitudinal analysis of

risk factors for child maltreatment: Findings of a 17-year prospective study of

officially recorded and self-reported child abuse and neglect. *Child Abuse &*

Neglect, *22*(11), 1065-1078.

Calhoun, L. G., & Tedeschi, R. G. (Eds.). (2014). *Handbook of posttraumatic growth:*

Research and practice. New York: Routledge.

Callaghan, C., & Papageorgiou, E. (2015). Gender differences in locus of control and

student performance in the South African context of accounting studies. *Meditari*

Accountancy Research, *23*(3), 348-368.

Cicchetti, D. & Curtis, W. J. (2006). The developing brain and neural plasticity:

Implications for normality, psychopathology, and resilience. In D. Cicchetti, & D.

J. Cohen (Eds.), *Developmental psychopathology: Vol. 2. Developmental*

neuroscience (2nd ed., pp. 1-64). Hoboken, NJ: Wiley.

Courneya, K. S., & Friedenreich, C. M. (1999). Physical exercise and quality of life

following cancer diagnosis: A literature review. *Annals of Behavioral*

Medicine, *21*(2), 171-179.

Collin-Vézina, D., Coleman, K., Milne, L., Sell, J., & Daigneault, I. (2011). Trauma

experiences, maltreatment-related impairments, and resilience among child

welfare youth in residential care. *International Journal of Mental Health and*

Addiction, *9*(5), 577-589.

Crocker, J., & Knight, K. M. (2005). Contingencies of self-worth. *Current Directions in Psychological Science*, *14*(4), 200-203.

Daigneault, I., Dion, J., Hébert, M., & Collin-Vézina, D. (2010). *Adolescent resilience, mindfulness and self esteem following sexual abuse trauma.* Paper presented at the International Society for Traumatic Stress Study 26th annual meeting: Translation, Collaboration and Mutual Learning.

Daniel, B., & Wassell, S. (2002). *Adolescence: Assessing and promoting resilience in vulnerable children 3*. London: Jessica Kingsley Publishers.

Devi, R., & An, S. (2013). Abuse and neglect as predictors of self concept among below poverty line adolescents from India. *International Journal of Psychology and Counselling*, *5*(6), 122-128.

Dube, S. R., Anda, R. F., Felitti, V. J., Chapman, D. P., Williamson, D. F., & Giles, W. H. (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: Findings from the Adverse Childhood Experiences Study. *JAMA*, *286*(24), 3089-3096.

Duckworth, D. H. (1983). Evaluation of a programme for increasing the effectiveness of personal problem-solving. *British Journal of Psychology*, *74*, 119-127

Durlak, J. A., Weissberg, R. P., & Pachan, M. (2010). A meta-analysis of after-school programs that seek to promote personal and social skills in children and adolescents. *American journal of community psychology*, *45*(3-4), 294-309.

Edleson, J. L. (1999). Children's witnessing of adult domestic violence. *Journal of*

Interpersonal Violence, *14*(8), 839-870.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible

statistical power analysis program for the social, behavioral, and biomedical

sciences. *Behavior Research Methods*, *39*, 175-191.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power

analyses using G*Power 3.1: Tests for correlation and regression analyses.

Behavior Research Methods, *41*, 1149-1160.

Faust, J., Alexander, A., & Ko, C (2017). *Children Experiencing Maltreatment Versus

Divorce Litigation: More Similar than Divergent?* Paper submitted to the 52nd

Annual Association for Behavioral and Cognitive Therapies Conference,

Washington, D.C.

Feltz, D. L. (1988). Self-confidence and sports performance. *Exercise and Sport Science

Reviews*, *16*, 423-458.

Field, W., & Kruger, C. (2008). The effect of an art psychotherapy intervention on levels

of depression and health locus of control orientations experienced by black

women living with HIV. *South African Journal of Psychology*, *38*(3), 467-478.

Fisher, D., Beech, A., & Browne, K. (1998). Locus of control and its relationship to

treatment change and abuse history in child sexual abusers. *Legal and

Criminological Psychology*, *3*(1), 1-12.

Foege, W. H. (1998). Adverse childhood experiences. A public health perspective.

American Journal of Preventive Medicine, *14*(4), 354-55.

Frisch, M. B. (1992). Use of the Quality of Life Inventory in problem assessment and

treatment planning for cognitive therapy of depression. In A. Freeman & F. M.

Dattilo (Eds.), *Comprehensive casebook of cognitive therapy* (pp. 27-52). Boston:

Springer.

Frisch, M. B. (2005). *Quality of life therapy: Applying a life satisfaction approach to

positive psychology and cognitive therapy*. New York: Wiley.

Graff, M. J. L., Vernooij-Dassen, M. J. F. J., Thijssen, M., Dekker, J., Hoefnagels, W. H.

L., & Olde Rikkert, M. G. M. (2007). Effects of community occupational therapy

on quality of life, mood, and health status in dementia patients and their

caregivers: A randomized controlled trial. *Journals of Gerontology: Series A,

62*(9), 1002-1009.

Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal

history. *American Psychologist*, *35*(7), 603.

Griffiths, L. J., Parsons, T. J., & Hill, A. J. (2010). Self-esteem and quality of life in

obese children and adolescents: A systematic review. *International Journal of

Pediatric Obesity*, *5*(4), 282-304.

Guille, L. (2004). Men who batter and their children: An integrated review. *Aggression

and Violent Behavior*, *9*(2), 129-163.

Harter, S. (1988). Developmental processes in the construction of the self. In T. D.

Yawkey & J. E. Johnson (Eds.), *Integrative processes and socialization: Early to

middle childhood* (pp. 45-78). Hillsdale, NJ: Lawrence Erlbaum Associates.

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process*

analysis: A regression-based approach. New York: Guilford Press.

Heim, C., & Nemeroff, C. B. (2001). The role of childhood trauma in the neurobiology of

mood and anxiety disorders: Preclinical and clinical studies. *Biological*

Psychiatry, *49*(12), 1023-1039.

Heim, C., Shugart, M., Craighead, W. E., & Nemeroff, C. B. (2010). Neurobiological and

psychiatric consequences of child abuse and neglect. *Developmental*

Psychobiology, *52*(7), 671-690.

Henninger, D. E., Whitson, H. E., Cohen, H. J., & Ariely, D. (2012). Higher medical

morbidity burden is associated with external locus of control. *Journal of the*

American Geriatrics Society, *60*(4), 751-755.

Hill, J. (2003). Childhood trauma and depression. *Current Opinion in Psychiatry*, *16*(1),

3-6.

Hillberg, T., Hamilton-Giachritsis, C., & Dixon, L. (2011). Review of meta-analyses on

the association between child sexual abuse and adult mental health difficulties: A

systematic approach. *Trauma, Violence, & Abuse*, *12*(1), 38-49.

Holt, S., Buckley, H., & Whelan, S. (2008). The impact of exposure to domestic violence

on children and young people: A review of the literature. *Child Abuse & Neglect*,

32(8), 797-810.

Huang, I. C., Thompson, L. A., Chi, Y. Y., Knapp, C. A., Revicki, D. A., Seid, M., &

Shenkman, E. A. (2009). The linkage between pediatric quality of life and health

conditions: Establishing clinically meaningful cutoff scores for the PedsQL. *Value*

in Health, *12*(5), 773-781.

Huebner, E. S., Suldo, S. M., Smith, L. C., & McKnight, C. G. (2004). Life satisfaction in

children and youth: Empirical foundations and implications for school

psychologists. *Psychology in the Schools*, *41*(1), 81-93.

IBM Corp. Released 2016. IBM SPSS Statistics for Macintosh, Version 24.0. Armonk,

NY: IBM Corp.

Ikiz, F. E., & Cakar, F. S. (2010). Perceived social support and self-esteem in

Adolescen(ce. *Procedia-Social and Behavioral Sciences*, *5*, 2338-2342.

Jackson, Y., Cushing, C. C., Gabrielli, J., Fleming, K., O'Connor, B. M., & Huffhines, L.

(2015). Child maltreatment, trauma, and physical health outcomes: The role of

abuse type and placement moves on health conditions and service use for youth in

foster care. *Journal of Pediatric Psychology, 41*(1), 28-36.

James, W. (1968). The self. In C. Gordon & K. J. Gergen (Eds.), *The self in social

interaction* (Vol. 1, pp. 41-49). New York: Wiley. (Original work published in

1910)

Kendler, K. S., Kuhn, J. W., & Prescott, C. A. (2004). Childhood sexual abuse, stressful

life events and risk for major depression in women. *Psychological

Medicine*, *34*(8), 1475-1482.

Liebenberg, L., Ungar, M., & LeBlanc, J. C. (2013). The CYRM-12: A brief measure of

resilience. *Canadian Journal of Public Health*, *104*(2), 131-135.

Marche, T. A., Briere, J. L., & von Baeyer, C. L. (2016). Children's forgetting of pain-

related memories. *Journal of Pediatric Psychology, 41*(2), 220-231.

Margolin, G., & Vickerman, K. A. (2007). Posttraumatic stress in children and

adolescents exposed to family violence: I. Overview and issues. *Professional*

Psychology: Research and Practice, *38*(6), 613.

Marks, L. I. (1998). Deconstructing locus of control: Implications for

practitioners. *Journal of Counseling and Development*, *76*(3), 251-260.

McCarthy, M. L., MacKenzie, E. J., Durbin, D. R., Aitken, M. E., Jaffe, K. M., Paidas, C.

N., & Ding, R. (2006). Health-related quality of life during the first year after

traumatic brain injury. *Archives of Pediatrics & Adolescent Medicine*, *160*(3),

252-260.

McGee, R. O. B., & Williams, S. (2000). Does low self-esteem predict health

compromising behaviours among adolescents? *Journal of adolescence*, *23*(5),

569-582.

Mirowsky, J., & Ross, C. E. (1990). Control or defense? Depression and the sense of

control over good and bad outcomes. *Journal of Health and Social Behavior*,

31(1), 71-86.

Mutlu, T., Balbag, Z., & Cemrek, F. (2010). The role of self-esteem, locus of control and

big five personality traits in predicting hopelessness. *Procedia-Social and*

Behavioral Sciences, *9*, 1788-1792.

Nemeroff, C. B., & Vale, W. W. (2005). The neurobiology of depression: inroads to

treatment and new drug discovery. *Journal of Clinical Psychiatry*, *66*, 5-10.

Neria, Y., Gross, R., & Marshall, R. (2006). Mental health in the wake of terrorism:

Making sense of mass casualty trauma. In Y. Neria, R. Gross, & R. Marshall

(Eds.), *9/11: Mental Health in the Wake of Terrorist Attacks*. Cambridge, UK:

Cambridge University Press.

Neria, Y., Nandi, A., & Galea, S. (2008). Post-traumatic stress disorder following

disasters: A systematic review. *Psychological Medicine*, *38*(4), 467-480.

Neziroglu, F., Khemlani-Patel, S., & Yaryura-Tobias, J. A. (2006). Rates of abuse in

body dysmorphic disorder and obsessive-compulsive disorder. *Body Image*, *3*(2),

189-193.

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-

term health consequences of child physical abuse, emotional abuse, and neglect:

A systematic review and meta-analysis. *PLoS Med*, *9*(11), e1001349.

Nowicki, S., & Duke, M. P. (2016). Foundations of locus of control research. In F.

Infurna & J. W. Reich (Eds.), *Perceived control: Theory, research and practice in

the first 50 years*. New York: Oxford University Press.

Nowicki, S., Ellis, G., Iles-Caven, Y., Gregory, S., & Golding, J. (2018). Events

associated with stability and change in adult locus of control orientation over a

six-year period. *Personality and Individual Differences*, *126*, 85-92.

Nowicki, S., & Strickland, B. R. (1973). A locus of control scale for children. *Journal of

Consulting and Clinical Psychology*, *40*(1), 148.

Stevenson, J. (1999). The treatment of the long-term sequelae of child abuse. *Journal of

Child Psychology and Psychiatry, 40*, 89–111.

Patki, G., Solanki, N., & Salim, S. (2014). Witnessing traumatic events causes severe

behavioral impairments in rats. *International Journal of Neuropsychopharmacology*, *17*(12), 2017-2029.

Pfefferbaum, B., Nixon, S. J., Krug, R. S., Tivis, R. D., Moore, V. L., Brown, J. M., ... & Gurwitch, R. H. (1999). Clinical needs assessment of middle and high school students following the 1995 Oklahoma City bombing. *American Journal of Psychiatry*, *156*(7), 1069-1074.

Phinney, J. S., & Chavira, V. (1992). Ethnic identity and self-esteem: An exploratory longitudinal study. *Journal of Adolescence*, *15*(3), 271-281

Piaget, J. (2000). Piaget's theory of cognitive development. In K. Lee (Ed.), *Childhood Cognitive Development: The Essential Readings* (pp. 33-47). Malden, MA: Blackwell Publishing.

Préau, M., Vincent, E., Spire, B., Reliquet, V., Fournier, I., Michelet, C., & APROCO Study Group. (2005). Health-related quality of life and health locus of control beliefs among HIV-infected treated patients. *Journal of Psychosomatic Research*, *59*(6), 407-413.

Rehm, L. P. (1988). Self-management and cognitive processes in depression. In L. B. Alloy (Ed.), *Cognitive processes in depression* (pp. 143-176). New York: Guilford Press.

Roberts, R., O'Connor, T., Dunn, J., Golding, J., & ALSPAC Study Team. (2004). The effects of child sexual abuse in later family life; mental health, parenting and adjustment of offspring. *Child Abuse & Neglect*, *28*(5), 525-545.

Roberts, R. E., Phinney, J. S., Masse, L. C., Chen, Y. R., Roberts, C. R., & Romero, A.

(1999). The structure of ethnic identity of young adolescents from diverse

ethnocultural groups. *The Journal of Early Adolescence*, *19*(3), 301-322.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of

reinforcement. *Psychological Monographs: General and Applied*, *80*(1), 1-28.

Rotter, J. (2011). Rotter Internal-External Locus of Control Scale. In R Halpert & R. Hill

(Eds.), *The locus of control construct's various means of measurement: A

researcher's guide to some of the more commonly used locus of control scales*

(pp. 10-12). Beach Haven, NJ: Will to Power Press.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of

psychological well-being. *Journal of Personality and Social Psychology*, *57*(6),

1069.

Ruini, C., & Fava, G. A. (2004). Clinical applications of well-being therapy. In P. A.

Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 371-387).

Hoboken, NJ: Wiley.

Salami, S. O. (2010). Moderating effects of resilience, self-esteem, and social support on

adolescents' reactions to violence. *Asian Social Science, 6*(12)*,* 101-110.

Smith, R. E. (1970). Changes in locus of control as a function of life crisis

resolution. *Journal of Abnormal Psychology*, *75*(3), 329.

Smith, R. E. (1989). Effects of coping skills training on generalized self-efficacy and

locus of control. *Journal of Personality and Social Psychology*, *56*(2), 228-233.

Stein, J. A., Leslie, M. B., & Nyamathi, A. (2002). Relative contributions of parent

substance use and childhood maltreatment to chronic homelessness, depression,

and substance abuse problems among homeless women: Mediating roles of self-esteem and abuse in adulthood. *Child Abuse & Neglect*, *26*(10), 1011-1027.

Stevens, J., Bies, R. R., Shekhar, A., & Anand, A. (2013). Bayesian model of Hamilton depression rating score (HDRS) with meantime augmentation in bipolar depression. *British Journal of Clinical Pharmacology*, *75*(3), 791-798.

Tanaka, M., Wekerle, C., Schmuck, M. L., Paglia-Boak, A., & MAP Research Team. (2011). The linkages among childhood maltreatment, adolescent mental health, and self-compassion in child welfare adolescents. *Child Abuse & Neglect*, *35*(10), 887-898.

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, *15*(1), 1-18.

Tierny, K., Lindell, M., & Perry, R. (2001). *Facing the unexpected: Disaster preparedness and response in the United States.* Washington, DC: Joseph Henry Press..

Theunissen, N. C., Kamp, G. A., Koopman, H. M., Zwinderman, K. A., Vogels, T., & Wit, J. M. (2002). Quality of life and self-esteem in children treated for idiopathic short stature. *The Journal of Pediatrics*, *140*(5), 507-515.

Ungar, M. (2008). Resilience across cultures. *British Journal of Social Work, 38*(2), 218-235.

Van der Kolk, B., Greenberg, M., Boyd, H., & Krystal, J. (1985). Inescapable shock, neurotransmitters, and addiction to trauma: Toward a psychobiology of post traumatic stress. *Biological Psychiatry*, *20*(3), 314-325.

Varni, J. W., Seid, M., & Kurtin, P. S. (2001). PedsQL™ 4.0: Reliability and validity of

    the Pediatric Quality of Life Inventory™ Version 4.0 Generic Core Scales in

    healthy and patient populations. *Medical Care*, *39*(8), 800-812.

Wang, M. T., & Holcombe, R. (2010). Adolescents' perceptions of school environment,

    engagement, and academic achievement in middle school. *American Educational*

    Research Journal, *47*(3), 633-662

Weiss, S. M., Reber, A. S., & Owen, D. R. (2008). The locus of focus: The effect of

    switching from a preferred to a non-preferred focus of attention. *Journal of Sports*

    Sciences, *26*(10), 1049-1057.

Werner, E. E. (2000). Protective factors and individual resilience. In J. P. Shonkoff & S.

    J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed.) (pp. 115-

    132). Cambridge, UK: Cambridge University Press.

Widom, C. S., Czaja, S. J., Bentley, T., & Johnson, M. S. (2012). A prospective

    investigation of physical health outcomes in abused and neglected children: New

    findings from a 30-year follow-up. *American Journal of Public Health*, *102*(6),

    1135-1144.

Wigfield, A., Eccles, J. S., Mac Iver, D., Reuman, D. A., & Midgley, C. (1991).

    Transitions during early adolescence: Changes in children's domain-specific self-

    perceptions and general self-esteem across the transition to junior high

    school. *Developmental Psychology*, *27*(4), 552.

Wigfield, A., & Eccles, J. S. (1994). Children's competence beliefs, achievement values,

    and general self-esteem: Change across elementary and middle school. *The*

Journal of Early Adolescence, *14*(2), 107-138.

Winthrop, A. L., Brasel, K. J., Stahovic, L., Paulson, J., Schneeberger, B., & Kuhn, E. M. (2005). Quality of life and functional outcome after pediatric trauma. *Journal of Trauma and Acute Care Surgery*, *58*(3), 468-474.

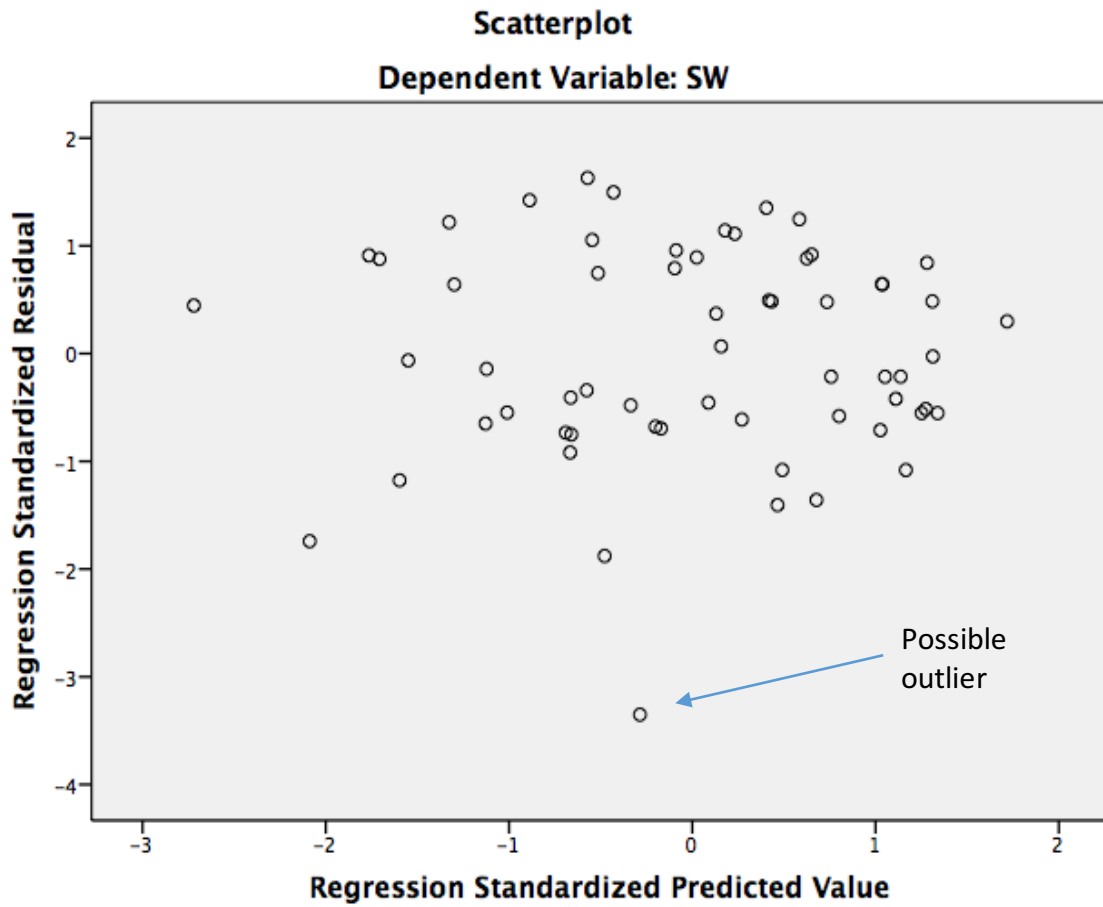Wright, M. O. D., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 15-37). Boston, MA: Springer.

Appendix

Scatterplot Representations of Final Regression Analysis

Part I. Whole Sample Regression

Part II. Regression Following Removal of One Outlier

Scatterplot
Dependent Variable: SW