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The Relationship Between Resilience and Academic Success Among Bermuda Foster Care Adolescents

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Walden University

College of Social and Behavioral Sciences

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Zina Zuill

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Walden University
2016

Abstract

The Relationship Between Resilience and Academic Success

Among Bermuda Foster Care Adolescents

by

Zina D. Zuill

MA, American International College, 1993

BA, Franklin Pierce College, 1988

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Counseling Psychology

Walden University

May 2016

Abstract

The primary goal of this study was to explore whether individual resiliency factors measured by the Resilience Scale (RS) influence academic success for Bermudian foster care adolescents, a population previously unstudied in the literature. Academic vulnerability is a concern for foster care adolescents, and more empirical studies need to be conducted to increase understanding of the variables that affect academic success for this population. Resiliency is a conceptual framework based on a positive developmental focus. The purpose of this study was to gain insight into the relationship between resilience and academic success among 51 Bermudian foster care adolescents who attended Bermuda public schools. Achievement scores and grade point average (GPA) were used to ascertain participants' levels of academic success. This study employed a nonexperimental correlational design using a multiple regression to analyze the relationships. Results revealed a statistically significant positive relationship between resiliency and reading achievement but no relationship between resiliency and GPA and resiliency and math achievement. The finding of the positive relationship between resiliency and reading could influence policymakers to reexamine current education policies to stress the importance of ensuring that all at-risk adolescents identified in Bermuda Public Schools acquire adequate reading skills.

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Dedication

I dedicate this dissertation to my husband, Anthony and son, Solomon Zuill who have been so patient throughout this journey and the numerous foster care children who have touched my life over the years.

I am so grateful to the Department of Child and Family Services, especially Mr. Alfred Maybury, Glenda Edwards, and numerous colleagues for believing that I could aspire to this level in my career.

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Chapter 1: Introduction to the Study

In the past 15 years, interest has grown concerning the plight of adolescents growing up in foster care and factors required for success when leaving foster care. Research studies regarding adolescents leaving foster care has suggested that these adolescents have low levels of educational attainment and frequently receive no education beyond the minimum required. Stein (2008) believed that factors such as placement stability, gender, commitment of caregiver, and a supportive environment for studying can foster building effective resiliency for academic success. The foster families' biological children may or may not be a role model to foster children in the home. However, the literature lacks studies that focus on foster care adolescents' academic functioning based on specific academic deficits.

Academic vulnerability is a concern for foster care adolescents. Research indicates that more empirical studies need to be conducted to gain a better understanding of the variables that affect academic success among adolescents living in foster care (Stone, 2005; Trout, Hagaman, Casey, Reid, & Epstein, 2007). To date, most literature concerning adolescents living in foster care has focused on their behavior, mental health, or family functioning rather than their academic vulnerability. Little is known about academic functioning and the deficits that influence the lack of school success for this population.

In 2006, Casey Families Programs, an organization that develops tools, practices, and policies to nurture all youth in foster care, reported that school success is a precursor for long-term positive outcomes for foster care adolescents. In turn, this success can lead

to enhanced well-being, success when transitioning into adulthood, personal fulfillment, economic self-sufficiency, and the ability to function as a productive citizen in society (Casey, 2006; Farruggia, Greenberger, Chen, & Heckhausen, 2006; Osterling & Hines, 2006). However, many adolescents in foster care do not have access to educational continuity and school stability (Casey, 2006). Casey suggested that this lack of access is a common phenomenon for these adolescents because the change of a home placement can often mean a change of schools.

Background of the Study

According to the Adoption and Foster Care Analysis and Reporting Report (AFCARS), released in September 2010, the U.S. foster care system included approximately 423,733 children. An estimated 11% of children in the U.S. foster care system will remain in care at least for 5 years. These at-risk children become wards of the court because their parents either are unable to care for them, or they are victims of neglect, physical, sexual, and emotional abuse. Their parents may also be overwhelmed by financial and emotional problems as well as feeling unable to cope with parenting (Stein, 2008).

Osgood, Foster, and Courtney (2010) suggested that closer attention is needed on this vulnerable population because the transition to adulthood poses a greater challenge for them compared with other youth. Some of their challenges are finding their own housing, dealing with juvenile systems, and having to arrange their own medical services. These extra burdens affect this population's opportunity to further their education. In addition, these young people aging out of the foster care system must navigate their

transition to independence without the emotional, social, and financial support from a family.

Problem Statement

Numerous studies on resiliency have focused on the interaction between protective and risk factors in high-risk populations (Cicchetti & Rogosch, 2009; Hjemdal, Aune, Reinfjell, Stiles, & Friborg, 2007; Olatunji, Shure, Garrett, Conwill, & Rivera, 2008; Prince-Embury, 2008). Findings have shown that poverty (Buckner, Mezzacappa & Beardslee, 2003; Seccombe, 2000) and its associated problems, such as crime (Palermo, 2009), violence (Christiansen & Evans, 2005; Madsen & Abell, 2010), and lack of opportunities, significantly affect a child's ability to perform academically in school (Landau, 2007) and can lead to delinquency in later years (Condly, 2006). Although research has focused on protective and risk factors for adolescents growing up in the U.S. and U.K. foster care systems, a lack of literature exists based on foster children growing up in Bermuda and the factors associated with their resiliency and academic performance.

Purpose of the Study

The purpose of this nonexperimental, correlational design was to assess whether individual resiliency factors measured by the Resilience Scale (RS) were related to academic success for Bermudian foster care male and female adolescents, ages 12 to 17 years, who were scheduled to emancipate out of the foster care system and who were currently enrolled in the Bermudian public school system. The participants' academic achievement scores were measured by the Wechsler Individual Achievement Test-Third

Edition (WIAT-III) and their grade point averages (GPAs) were used to ascertain the participants' level of academic success.

Nature of Study

This study employed a quantitative, correlational design. The criterion variables for this correlational study were GPA and achievement score defined by the WIAT-III, which were used to test hypotheses posed within the study. The main predictor variable was the RS. The RS is a self-report scale that can be administered to individuals aged 12 to 100 years. This tool consists of 25 items and administration takes approximately 10 to 15 minutes. The resiliency areas explored in this study included meaningfulness, perseverance, self-reliance, equanimity, and existential aloneness. Each participant completed all items on the RS. I compared the calculated scores in each area to determine whether a correlation existed among resilience, achievement scores, and GPA.

Another predictor variable was the participant's gender. Past research (e.g., McFarland, Benson, & McFarland, 2011; Wei, Lui, & Barnard-Brak, 2015) has supported the notion that gender may affect achievement scores. In addition, age is a moderator variable that was included because developmental milestones, such as acquiring language and problem-solving skills, must develop before academic success can take place (Borensztajn, Zuidema, & Bod, 2009; Junge & Cutler, 2014; Mayo, Chlebowski, Fein, & Eigsti, 2013). Moderator variables, such as age, can be used if it affects direction or strength between a predictor and criterion variable (Zhao, Lynch, & Chen, 2010).

The goal of this study was to better understand how resilience affects adolescents growing up in care and to extend knowledge about foster care children from Bermuda. The results had the potential to describe what factors might predict academic success for foster care adolescence attending Bermuda public schools. On a larger scale, the results of the study had the potential to influence policymakers to reexamine current education policies for adolescents who are deemed at-risk for academic success.

Research Questions and Hypotheses

In education, educators are constantly examining what determines student success. The determination of this success leads to the question of what makes an exceptional student. In this study, I examined whether resilience is related to academic performance for students in Bermuda who have grown up in the foster care system. *Resilience* was defined by assessing resiliency factors as measured by the RS and determining whether these factors affect achievement, as measured by the WIAT-III (academic skills) and GPA (academic performance) among foster care children in Bermuda.

The following research questions and hypotheses guided this investigation:

Research Question 1: Is resiliency related to academic performance?

H_{01} : Resiliency as measured on the RS is not related to academic performance as measured by GPA.

H_{a1} : Resiliency as measured by scores on the RS is positively related to academic performance as measured by GPA.

Research Question 2: Do age and gender moderate the relationship between resiliency and academic performance?

H2_{o2}: Age and gender do not moderate the relationship between resiliency, as measured by scores on the RS, and academic performance, as measured by GPA.

H2_{a2}: Age and gender moderate the relationship between resiliency, as measured by scores on the RS, and academic performance, as measured by GPA.

Research Question 3: Is resiliency related to academic achievement?

H3_{o3}: Resiliency, as measured by scores on the RS, is not positively related to academic achievement, as measured by scores on the WIAT-III.

H3_{a3}: Resiliency, as measured by scores on the RS, is positively related to academic achievement, as measured by scores on the WIAT-III.

Research Question 4: Do age and gender moderate the relationship between resiliency and academic achievement?

H4_{o4}: Age and gender do not moderate the relationship between resiliency, as measured by scores on the RS, and academic achievement, as measured by scores on the WIAT-III.

H4_{a4}: Age and gender moderate the relationship between resiliency, as measured by scores on the RS, and academic achievement, as measured by scores on the WIAT-III.

Theoretical Base

The concept of resilience theory emerged in the early 1980s from studies that focused on children and their mothers with schizophrenia who were their caregivers.

Masten and O'Connor (1989) found that children who were raised by parents with schizophrenia received less caregiving when compared with children with healthy parents. The type of care had an influence on the child's development. These researchers also suggested that some children demonstrated normal development despite the adversity experienced by their parents with schizophrenia.

According to Masten (2006), the premise of resilience theory is based on the observations that some youth flourish and achieve positive outcomes despite the adversities they face. Masten indicated that the resiliency aspect of the study was based on internal assets of strengths, temperament, and social skills. Internal assets emphasize the building of physical, intellectual, emotional, and psychological resources that help adolescents cope with and conquer adversity. This view of resilience is rooted in earlier research in psychopathology (Cicchetti & Garmezy, 1993). The focus of resilience has transitioned from not only examining the psychopathology but putting emphasis on how adversity supports resistance and growth (Garmezy, 1971, 1991).

Garmezy (1991) described a framework of resilience that is universal throughout the past and current research. This pioneer posited that three factors are common among the various definitions of *resilience*. The first factor concentrates on the individual and includes areas such as intelligence and temperament. The second focuses on the family and the amount of support it gives to the child. The third examines external supports that can help the child and family. Werner (1989) identified similar factors and described the factors as (a) personality characteristics of the child, (b) emotional integration within the family, and (c) degree of support that the family and child can obtain.

Further, the concept of resilience must not be misunderstood as a single dichotomous variable, which states that one is either or not resilient in any and all situations. Rather, resiliency is a label that describes the interaction a child may have with a trauma or toxic environment in which success is attained by abilities, motivations, and support systems in the child's life (Condly, 2006).

The study of resilience has been rooted in earlier research in psychopathology, but educators are interested in understanding the factors of resilience that explain academic as opposed to social resilience. Morales (2008) described academic resilience as a process where an individual has succeeded academically despite the obstacles and adversities that may prevent others in similar backgrounds from succeeding. Academic resilience is a phenomenon that is complex, multidimensional, and understudied. Conchas (2006) identified that academic resilience requires further and deeper exploration.

Based on the theoretical construct of resilience, and how its focus has evolved for decades around individual protective and risk factors for adolescents experiencing adverse circumstances, interest has increased in other areas where resilience may influence outcomes for adolescents. Researchers (Borman & Rachuba, 2001; Martin & Marsh, 2006; Martin & Marsh, 2008; Morales, 2008) have been exploring factors, such as academics, and the effect that resilience has on academic success. For the purposes of this study, focus was on resiliency and the effect it has on the academics of Bermudian adolescents growing up in foster care who are in the public school system.

Definition of Terms

Academic resilience: In this study, *academic resilience* was defined as a process where an individual has succeeded academically despite the obstacles and adversities that may prevent others in similar backgrounds from succeeding academically (Morales, 2008).

Academic success: In this study, *academic success* was measured by the GPA of each adolescent participate who were in foster care and attended a Bermuda public school.

Academic vulnerability: In this study, *academic vulnerability* was defined as the risk of not succeeding academically based on conditions such as maltreatment, poverty, socioeconomic status, and race that can impend on an adolescent's academic performance.

Achievement: This represented the grade/age level of participant skill in subjects, such as reading and math, based on the Wechsler Individual Achievement Test-Third Edition (WIAT-III).

Adolescents: In this study, *adolescents* referred to any child between the ages of 12 and 17 years.

Foster care: This refers to adolescents placed in temporary care of a family other than its own as the result of problems or challenges that are taking place within the birth family. Adolescents in this study were selected from the following types of foster care placements: foster family, group home, kinship arrangement.

Resilience: In this study, *resilience* was defined as the ability to thrive, mature and increase competence in the face of adverse circumstances (Gordon, 1995). Resiliency was determined by having each adolescent complete an RS to determine their level of resilience.

Socioeconomic status: In this study, *socioeconomic status* referred to the adolescent's parental income and educational level defined by the Bermuda Government.

Assumptions

It is assumed that the psychometric properties of the RS that were established in previous studies with adolescents would apply to the adolescents in Bermuda who participated in this study. The validity and reliability of this tool and its use with adolescents were documented within the literature (see Instrumentation section in Chapter 3). In addition, I assumed that the adolescents in this study would understand the items on the RS and would provide honest responses to these questions.

An additional assumption involved the appropriateness of multiple regression to analyze the data, which permitted a better understanding of the relationship between resilience and academic success among foster care adolescents growing up in the foster care system in Bermuda.

By using a multiple regression, it was assumed that the residuals in the study would be distributed normally. The relationship between the variables would be linear, and the sample size large enough so that the results would produce significance between the variables. In addition, I assumed that the variables chosen to analyze resilience and academic success would emerge as strong predictors.

Limitations

1. Given the target sample of adolescents in public education in Bermuda, the results of this study cannot be generalized to younger at-risk children in Bermuda's foster care system. The findings may also not generalize to Bermudian adolescents receiving private education or home schooling.
2. A small sample size can reduce the statistical power, increasing the chance of a Type 2 error. The required sample size for this study was based on a projected statistical power level of .80. This level of power meant that there was still a .20 probability of making a Type 2 error (not having sufficient statistical power to find relationships that do indeed exist).
3. Multiple regressions can only ascertain relationships and not underlying causal mechanisms.
4. Based on the number of variables in this study, there was the risk of some variables being significant due to the principal of chance (a Type 1 error).
5. A common limitation with using a multiple regression to analyze data was multicollinearity. This happens when variables are redundant with each other, and the best variables need to be chosen so that predictability of the data will produce concrete results.

Delimitations

Ethnicity in this study represented a delimitation because the main focus was on Black Bermudian adolescent male and female in foster care. This study did not include

any other adolescent ethnic groups, so the findings from the study cannot be generalized to other adolescent ethnic groups that may be emancipating out of foster care.

Significance of the Study

This study will contribute to a better understanding of the relationship between resilience and academic success for children in the Bermuda foster care system. By examining the relationship between resilience and academic success, the study could lead to future research on the resilience of adolescents facing different adversity such as divorce, death of a parent, and trauma. If additional studies support the relationship, this may warrant implementing resilience-enhancing programs in schools.

The information gathered from this study could help improve services provided by social workers, educators, and psychologists who work with at-risk adolescents in the foster care system by providing insight into how resiliency may affect treatment and interventions for adolescent success. On a larger scale, a positive social change could be the improvement of the Bermuda Children Act of 1998 that addresses protection and rights of children between 0 and 18 years old by creating social and education policies that could enhance academic success for adolescents in foster care. In addition, the study added to the existing literature on at-risk youth in foster care by focusing on a cultural group that had not been studied.

Summary and Transition

Resilience theory has been studied for the past 40 years. Resilience represents a multifaceted and dynamic construct that is unfolding with the continuation of research examining its impact in different areas. This study focused on resilience and at risk

adolescents in the Bermuda foster care system and the role of resilience to academic success. Research has shown that adolescents growing up in the foster care system run the risk of having academic challenges.

Chapter 2 focuses on the literature used to support the proposed study. The chapter covers literature on resilience, academic performance, and adolescents growing up in foster care. It also includes relevant theories and outcomes regarding these issues.

Chapter 3 details the research design and approach used to analyze the data and the justification for the design compared to other designs. Topics covered include setting and sample criteria regarding the chosen population and the reasoning behind the chosen sample size. In addition, the chapter covers the reliability and validity of instruments used within the study and the protection of the participants during their involvement in the study.

Chapter 4 presents the results and any discrepancies in the data in relation to the research questions being explored in the study. Chapter 5 provides a discussion of the interpretation of the findings and the implications for future research based on the outcome of the study.

Chapter 2: Literature Review

This chapter focuses on the scholarly literature used to compile the theoretical construct behind resiliency theory described in this study. The chapter begins with a description of the broad understanding of resilience, then covers a concept in resiliency known as academic resilience. The next section of the chapter focuses on the concept of *academic success*. The chapter concludes with a discussion about resiliency, academic success, and the effect that these models have on Bermudian adolescents in foster care.

I primarily used EBSCOhost databases to retrieve scholarly peer-reviewed articles. Key databases included (a) PsycARTICLES, (b) Academic Search Complete, (c) SocIndex, (d) ERIC, (e) PsycINFO, and (f) Education. I used the following search terms: *emancipation, aging out, foster care, out of home placement, group home, residential, foster child, foster parent, at risk youth, adolescents, teenager, look-after children, academic success, academic achievement, academic performance, resiliency, resilience, and academic resilience*. These search terms yielded 90 results. I focused on articles that specifically addressed the foster care adolescent population and included resiliency theoretical concepts. This was supported by including articles that examined academic performance.

In addition to using academic databases to search for relevant literature, I consulted with the Department of Child and Family Services and foster care supervisor in the Bermuda foster care system. In addition, I retrieved information from Casey Families. This is an organization that mainly focuses researching children and adolescent who are

raised in the foster care system. Their intent is to raise awareness of challenges that are experienced by foster care children.

The articles relevant for this study focused on adolescents who were part of the foster care system or out-of-home placements. In these articles, the focus was on academic success for adolescents in an educational setting. Other articles covered theoretical perspectives about resilience and its relationship to academic success for adolescents. Finally, the literature base for this study included other studies employing a similar methodology.

The nature of studying resilience in a child can lead to examining this concept from the standpoint of resiliency being an innate quality that results in a child surviving many adverse conditions. However, if the concept is examined from the perspective of the child's family and social environment, then resilience may not only be an innate quality within the child but an interactional process between the child and the environment (Condly, 2006). The social environment includes family, home, and school.

Resiliency Theory

Resiliency theory emerged 30 years ago when a group of pioneer researchers studied the phenomena of children who were considered at risk and had a possibility of developing psychopathology, but instead these children experienced positive adaptation (Masten, 2001). According to Masten, there are two approaches for studying resilience. The first is the variable-focused approach, which measures the degree of risk/adversity that may protect the individual from negative consequences. The second approach is a person-focused approach, which examines different profiles to ascertain the differences

between resilient and nonresilient individual. Coleman and Hagell (2007) conceptualized the variable-focused approach as encompassing risk factors and the person-focused approach encompassing at risk individuals.

Different resiliency instruments have been developed, and there are new instruments that continue to be created to measure the factors that may contribute to resilience within different populations. The Connor-Davidson Resilience (CD-RISC) was developed in 2003 by Kathryn M. Connor and Jonathan R.T Davidson. The purpose for the tools development stemmed from the authors' interest in PTSD within adults and the impact that resilience may have on this diagnosis. The tool consists of 25 items scored 1 to 4, where 4 is high. Another resilience tool that has been developed is the Resiliency Scales for Children & Adolescent- Profile of Personal Strengths (RSCA). The RSCA was developed in 2006 by Sandra Prince-Embury. The tool consists of three scales of 20 to 24 items each and ten subscales. The purpose of the RSCA is to measure three areas of perceived strength and/or vulnerability related to psychological resilience. It can be used in settings such as clinical, school or with therapeutic groups. The current study will be using the Resilience Scale to determine a resilience score for the foster adolescent within the study. The reliability and validity are discussed within Chapter 3.

Risk Factors

Werner (1993) argued that children who experience adversity can have positive outcomes despite the impact of the adversity on the child. This was demonstrated in the Kauai Longitudinal Study. This study examined all children born in Hawaii in 1955.

Findings showed that out of 698 children born, one third was found to be high risk, with one third of the high risk children deemed resilient.

Garmezy (1991) proposed that the best beginning point to examine modern resilience is to change the focus from pathology under adverse circumstances and begin from the premise of a resistance and growth perspective. This pioneer posited that three factors are found universally in all definitions of resilience and research conducted on children as well as adults. The first factor revolves around the individual and includes intelligence and temperament. The second focuses on family and the degree of support that is provided to the child. The third examines external support that the individual receives from persons and institutions outside of themselves and the family.

Like Garmezy, Werner (1989) found similar factors to contribute to resilience. She identified personality characteristic of the child, emotional integration within the family, and the degree of outside support received within the family. Each of these factors has identifiable characteristics, making it important to realize that both genetic inheritance and social environment interact to create observed behavior (Rutter, 1989). Disagreements continue about which factor takes precedence in particular situations, but the literature suggests few disagreements around the notion that children's resilience involves the interaction between genetic makeup and the kind of support received.

Hines, Merdinger, and Wyatt (2005) supported this notion by suggesting that studying resilient individuals helps to inform whether resources are required to achieve success in spite of adversity and whether adaptive functioning is achieved at a

psychological cost as some have suggested (Luthar, 1993; Luthar & Zigler, 1991; Work, Cowen, Parker, & Wyman, 1990).

Protective Factors

While early research has focused on finding principles that explain the pathology associated with conditions of poverty, environmental stressors, and socioeconomic status, clearly not all persons who are exposed to adversity result in developing overt ill effects from their experiences. Studies conducted in the medical field showed persons exposed to stressors of disease that continue to have productive lives (Hoekelman, 1991; Patterson, 1991). The notion of adversity is supported also by research that has studied individual and family characteristic and found positive outcomes despite the adversity (Radke-Yarrow & Brown, 1993; Smith & Prior, 1995; Wyman, Cowen, Work, & Parker, 1991). Educators have refined resilience by trying to understand factors that explain academic resilience as opposed to social resilience (Finn & Rock, 1997; Masten et al., 1988; Waxman, Huang, & Padron, 1997).

Richardson (2002) concluded that Resilience theory has evolved over the years from (a) a phenomenological identification of developmental assets and protective factors, (b) a disruptive and re-integration process for assessing resilient qualities, and (c) an educational and practical framework to provide a means of connecting and nurturing a client's resilience. The last framework supports the notion of how resiliency can be an intricate part in helping a client connect with being resourceful in accomplishing psychological well-being and success. This psychological well-being and success may result from the presence of a variety of protective factors, including a sense of

competence, goals for the future, social support, and involvement in community services activities (Hass & Graydon, 2009). These resiliency implications will be explored with children in foster care and the impact it has on their academic success.

Foster Care and Resiliency

The foster care system is designed to give children an alternative home while professionals, courts, and families try to resolve abuse issues that have resulted in a child being removed from their family. Casey Families is an organization that has focused entirely on how policies and procedures in foster care impact children in the child welfare system. This organization strives to improve foster care with the intent of ultimately preventing the need of foster care within the United States. Casey Families goal is to safely reduce the number of children in foster care and improve the lives of those who remain in care. The focus of this section was a review of the implications of resiliency and its effect on foster care, as well as how it could benefit in improving children's lives that are currently in foster care.

Implications for Youth in Care

Resilience research over the years has grown because of the expansion around different populations that have experienced some type of adversity that may have impacted on their psychological well-being. For instance, resilience of foster children receiving out of home care and its impact on this population are being studied. Stein (2008) explored how we promote resilience of young people leaving care by examining research completed during the past 25 years on young people from disadvantaged families and compared them to young people leaving care. Three groups were identified

from the leaving care research. These groups were classified as “moving on,” “survivors,” and “victims.” It was concluded that promoting resilience in young people would require comprehensive services across their life journey. The author argued that foster care youth tend to be the most excluded young people in the U.S. society.

Driscoll (2011) reported on a pilot study for a qualitative longitudinal research project that focused on factors impacting care leavers’ decision in getting a future education and their views around the support that were beneficial in making the decision. Participants were comprised of four young men and three young women between the ages of 16 to 20 years. The results showed that all participants believed that they had not reached the educational qualifications that they thought they would have achieved. Three of the seven attributed their disappointing academic results to their relationship with their careers. There was a participant who revealed that past criminal activity impacted on attaining an education. Foster care children continue to perform poorly at school compared to their peers, leaving them to be at risk for unemployment and poverty. This poor performance at school appears to affect foster care children whether they are in traditional foster care, kinship care, or residential care (Rosenfeld & Richman, 2003).

Educational Outcomes

These basic educational challenges for foster children may be attributed to the many change placements frequently experienced, causing foster children to experience more school disruptions (Tennyson, 1998; Thorpe & Swart, 1992). Findings from Blome’s (1997) survey that tracked the progress of 167 foster youth and compared to non-foster youth of the same size found that foster youth were doing worse on different

indicators such as early dropout from high school (37% foster youth versus 16% comparison group), not receiving a high school diploma or Graduate Equivalency Diploma (23% versus 7%), and spending less than 3 hours per week on homework (63% versus 48%). These same foster children change schools by the fifth grade compared to non-foster children. Thorpe and Swart (1992) found that 44% of foster children change schools yearly and 25% experience disruptions at least once during a school year.

These studies strongly suggest that children in foster care and out of home placements are at heightened risk of school failure. Because of this risk, Rosenfeld and Richman (2003) have argued that it is paramount that practitioners in the out of home placement system and in the educational system cooperate and attend to the educational success for foster children. By studying the effects of 209 middle school students' academic risk and out of home placement, Rosenfeld and Richman found that academically at risk youth in home placements report that they receive more support from neighbors than from teachers, peers, and adult caretakers. In addition, attending to this issue of school failure for foster children supports the notion of there being less waste of human capital, less involvement in sexual intercourse, less risk of sexually transmitted disease, decreased use and demand for social services, less crime, and lower health care costs (Carnahan, 1994).

Effect of Resilience on Foster Youth

Leve, Fisher, and Chamberlain (2009) stated that little is known why some children develop resilience in the face of such adversity, particularly when it is severe enough for child welfare involvement. However, a resiliency framework can help in

explaining and providing insight into the process of youth who are exhibiting positive outcomes despite the challenges that had to be endured. This notion is supported by Luthar and Brown's (2007) definition that resiliency research is a process that illuminates the ill effects of life conditions and shows the effects that can exacerbate one's condition. Therefore, the process assists in deriving specific directions for intervention and social policies.

Johnson-Garner and Meyers's (2003) research supports the importance of understanding resiliency and its impact on foster care. They examined African American children living in kinship foster care arrangements. The findings showed that caregivers of resilient children (CRC) reported having more control over their children compared to caregivers of non-resilient children (CNRC). These same caregivers made better adjustments in their new role when they were aware of family readjustments and secure communication between biological parents. The adjustments also were supported when boundaries were easily set for the child and caregivers received support from extended family.

The CNRC reported feeling they had no choice and were expected to care for their relative, their lives were disruptive creating feelings of ambivalence, and their relationship with biological parents had conflict which made boundary setting difficult. These same caregivers reported a lack of support from extended family. However, both CRC and CNRC reported that they had open communication with family members and their belief in God and prayer contributed to helping them deal with their foster child.

The understanding of resilience is important, but the way that resilience has been studied within this population needs to be expanded. This topic has mainly been explored from a quantitative perspective. Wells and Freer (1994) argued that quantitative approaches do not capture the full essence of children's experiences growing up in foster care. They suggested the need for more qualitative research when studying children growing up in foster care. Whiting and Lee (2003) supported this approach by stating that hearing the stories on 23 children using an ethnographic approach allowed for a better understanding of surrogate family care for foster children, the stories add insight that could enhance societal awareness and promote better foster care policies, and it can be therapeutic for the children.

Factors Effecting Resiliency

Research on resiliency suggests that several factors may influence how children respond to challenging circumstances. These factors include (a) consistency of care the child receives, (b) the continuity in the child's educational experiences, (c) social support within the home and community, (d) socioeconomic status (SES) and (e) mentoring (Jones & Morris, 2012; Leve, Harold, Chamberlain, Landsverk, Fisher, & Vostanis, 2012; Williams, 2011). For instance, a Canadian study regarding resilient infants reported that these types of infants do better when they are raised in a two-parent middle SES family, attend good schools where they receive special services and universal health care (Fonagy, Steele, Steele, Higgitt, & Target, 1994).

Other studies (e.g., Werner's seminal 1955 Kauai study) also point to the importance of a supportive home. However, the most intriguing cases in this study were

the handful of exceptions. A few children with serious birth complications and troubled family environments grew into competent adults who fared as well as controls in career attainment and psychological adjustment. Werner found that these children relied on factors outside the family and within themselves to overcome stress. Some had attractive personalities that drew positive responses from relatives, neighbors, and peers. In other instances, a grandparent, aunt, uncle, or babysitter provided the needed emotional support (Werner, 1989; Werner & Smith, 1992, 2001).

Consistency of Care

The United Kingdom's Social Services system and law structure (Children Act 1989) is similar to the law structure and social services system in Bermuda. Driscoll (2011) suggests the reason behind poor educational attainment for foster children in the UK is the result of teachers' low expectations for foster children as well as education not always being seen as a priority by social workers or care givers (Berridge, 2007). A large proportion of foster care children who enter care in England present with significant educational deficits, leaving little room for improvement prior to 16 plus qualifications. Furthermore, many of these children are usually identified as having a mental health disorder compared to children residing in private households. Many also suffer from learning disabilities and emotional behavioral difficulties. In this study the researcher proposes to examine whether there are similar educational outcomes for foster care children in Bermuda, since no published studies have been found regarding the Bermudian foster care system.

Jackson and Martin (1998) found several contributing and significant variables regarding educational success and psychological well-being of adults raised as children in public care. These variables included (a) stability and continuity in care, (b) learning to read early and fluently, (c) encouragement from parent/foster caregiver, (d) friends outside of care, (e) high internal locus of control and intrinsic motivation, (f) regular school attendance, and (g) an adult mentor. Jackson and Martin concluded that educational success is a crucial factor in determining adult life styles and social inclusion for this group of disadvantaged children.

The trend towards academic performance in looked after children has tended to focus on their consistent and significant underachievement relative to the general population of school children within a given school year. Mallon (2007) reported that there are protective factors which contribute to developing resilience and achieving academic success in look after children, despite the risk factors experienced pre-care and while in the care. Therefore, Mallon concluded that resilience can be possible at a later stage of educational attainment, although some individuals might not have achieved academic success earlier in their school career.

In the past, there has been a reluctance to grasp well-established evidence concerning the notion that school plays an integral part in a pupil's attainment, behavior, and self-worth (Dent & Cameron, 2003). Gilligan (1998) supported the value of this when he argued that school life offers vulnerable pupils a range of opportunities to boost resilience, act as a secure base, and provide opportunities to develop self-esteem and self-

efficacy, as well as provide opportunities for constructive contact with peers and supportive parents or mentors.

A secure base for adolescents growing up in long-term foster care is necessary for foster care adolescence to transition successfully into their adult life. Secure base practices in foster homes allow for identification and strengthens to be highlighted within the placement, and this gives the opportunity for these issues to be tackled or strengthened (Schofield & Beek, 2009). It also allows for the opportunity for foster care adolescents to develop resilience instead of adolescents who are not secured ending up being disconnected from others and having lower resilience (Hunter & Chandler, 1999). This lack of resilience was found to be significantly related to hopelessness, loneliness, life-threatening behaviors, and connectedness.

Continuity in Educational Experiences

The life of young people in foster care is not an easy road. In the past 20 years, research on academic achievement has shown that children in public foster care fall behind at school, seldom receive good qualifications, and are more likely not to continue on with higher education (Martin & Jackson, 2002). School failure tends to be one of the more serious negative outcomes experienced by young people in the care of social services. It is important that education be explored in this population as school failure is associated with unemployment and involvement with social services as well as the justice system. Education serves as an important stabilizer and guidance for children who have been removed from their families (Ferguson & Wolkow, 2012). Thus, without stable educational experiences children in care tend to have academic difficulties. Eckenrode,

Laird, and Doris (1993) and Sawyer and Dubowitz (1994) found that twice as many foster children and youth repeat grades in comparison to children not in care. More recent studies, Jackson & Cameron, (2012); Berridge, (2012); Dill, Flynn, Hollingshead, & Fernandes, (2012) acknowledge the poor outcomes such as repeating grades, lack of support from caregivers, and conflicts between child welfare and the educational system as common issues experienced in foster care. These researchers support the continuation of studying the issue of foster care children and their education because this is a group that has been underserved when it comes to their educational needs.

In addition, Scherr (2007) reported that children in care were referred for special education five times higher than their peers. However, they are frequently inappropriately served in this regard because many do not have disabilities but have issues stemming from being overlooked due to repeated school transfers and the disruption that are associated with these moves. Others are impacted by their behavioral challenges. This was demonstrated in a study that found 27% of 6-12 year-old children scored in the clinical range for behavior problems, and 34% had a behavioral incident in the classroom (Zima, Bussing, Freeman, Yang, Belin & Forness, 2000).

According to Pecora (2012), foster care children's educational experiences are also impacted by enrollment problems, educational instability, and lower test scores. The foster care child's educational experience can also be impacted by changes in foster care placements affecting a child's educational performance. A foster child's low performance can result in the child being retained a grade. This also is influenced by genetic factors including psychiatric diagnoses, such as conduct disorder (CD), oppositional defiant

disorder (ODD), major depression disorder (MDD) and attention deficit hyperactivity disorder (ADHD) that may contribute to higher rates of certain emotional and behavioral disorders in children (McMillen et al., 2005).

Environmental factors such as poverty, SES, and lack of health care may also influence higher rates of disorders in children in foster care. DosReis, Zito, Safer, and Soeken (2001) found in a group of 15,507 children who were receiving medical assistance that the rate of emotional and behavioral disorders among children in foster care was twice that of youth receiving supplemental security income and close to 15 times that of children receiving other forms of medical aid. In addition, parent and child interactions that include abuse and neglect may have some effect on a foster child likely developing an emotional or behavioral disorder that can impact the foster child's learning within a school setting.

Socioeconomic Status

The precise definition of what comprises socioeconomic status (SES) is an ongoing debate in research (Bradley & Corwyn, 2002; Liberatos, Link & Kelsey, 1988). There is a general consensus that income, education, and occupation together represent SES better than any of the components alone (Mcleod & Kessler, 1990). However, there are still debates in the literature around composite and proxy measures and their value in determining SES in research (Krieger, Williams, & Moss, 1997; Oakes & Rossi, 2003). Research has documented that poverty and low parental education are also associated with lower levels of school achievement (Bradlyn & Corwyn, 2002).

SES can be a factor that impacts resiliency. SES can be described as a certain class of economic power an individual is assigned to base on their income or lack of income. A group becoming increasingly common in society is single parents (Greeff & Fillis, 2009). They may be single parents for a variety of reasons, including divorce, death, estrangement, or out of wedlock births. However, when parents cannot maintain children's basic needs such as food, clothing, and shelter other entities or organizations have to step in to assist these families. Resiliency within this type of family system can be explored either from divergent models: deficits based or strengths based. There is a strong movement away from the deficit based model (Barnard, 1994; Hawley & DeHaan, 1996). Since this time, resilience researchers continue to explore the importance of moving to a strength based model and its impact among children exposed to high levels of risk or adversity (Masten, 2011; Masten, 2009; Yu & Patterson, 2010). The strength-based model is supported by the salutogenic approach that proposes that individuals should focus on coping rather than risk, survivors rather than defeated, and invulnerable versus damaged (Antonovsky, 1979).

Early studies about SES and vulnerability proposed there were two explanations for SES differences in vulnerability to stressful life events. The financial resources explanation addresses SES from the standpoint that distress results from financial vulnerability of individuals at the lowest status level (Liem & Liem, 1978). This claims that people from low SES backgrounds have arrived there as a result of numerous undesirable financial events and a lack of sufficient financial resources to cope with the events.

The second explanation focused on coping resources. In this explanation, SES influences vulnerability through its indirect relationship with coping resources, such as social support and resilient personality characteristics. Thus, the specific nature of the coping resource is that lower status groups integrate poorly into society and this poor integration accentuates life events on psychological stress (Myers, Jacob, & Peppers, 1975). There is also the premise that pervasive educational differences in coping strategies impact on life events. For instance, people with low levels of education were more likely to use ineffective strategies than their educated counterparts (Pearlin & Schooler, 1978).

As related to psychiatric epidemiology and the impact of SES, this is also well documented (Gore, Aseltine, & Colton, 1992; McLeod & Owens, 2004). There are groups of students with disadvantages, such as children taken into public care and placed in foster homes, children with parents who have a substance abuse issues, and refugees who belong to an ethnic minority group, who's emotional, social, and educational outcomes are being affected by lower SES (Veland, Midthassel, & Idsoe, 2009). These disadvantaged groups have a higher incidence of internalizing symptoms, like depression and anxiety that may impact their ability to obtain an adequate education because of the lack of financial resources and availability to receive appropriate health care (Mendelson, Kubzansky, Datta, & Buka, 2008).

SES and educational attainment have also been studied. Research has indicated that SES is the best predictor of academic attainment, and low SES is associated with predicting low attainment (Caldwell & Ginther, 1996). Even among high-achieving

students, attaining a college degree is impacted by SES (Lee, Daniels, Puig, Newgent, & Nam, 2008). Overall, SES is an important factor to consider when examining academic success within at-risk groups such as foster care adolescents.

Mentoring

Another factor that can effect resiliency is mentoring. Mentoring is an activity that has become popular over the last decade. Organizations such as Big Brothers/Big Sisters are well known nationally and internationally. Studies have looked at the impact that mentoring plays on the life of the foster care youth because of the protective influence attached to mentoring relationship. Rhodes (1994) stated that this influence may provide greater benefits to youth who are classified as “at-risk” by virtue of the individual and/or environmental circumstances. The benefits of having mentoring programs is that it can be used with other subgroups such as the single parent home and racial or ethnic minority groups. These types of programs also have targeted youth of varying ages and developmental levels.

Mentoring programs have had some potential effect on youth with emotional and behavioral functioning, academic achievement, and employment or career development (Dubios, Holloway, Valentine, & Cooper, 2002). The introduction of mentoring young people to enhance their interests and talents while in foster care can strengthen the social progress and resilience of this group of young people. Gilligan (1999) described the caregiver, social worker, advocate, counselor, and mentor as key adults in relation to the child in care. The results showed that caregivers, social workers, and mentors were

relevant to the support of encouraging leisure time interests within children in the public care system.

The implementation of mentoring programs that target foster care youth would seem to be an answer to matching at-risk youth with a committed adult (Clayden & Stein, 2005). Youth in care tend to have poor psychosocial and vocational outcomes on a whole (Courtney & Dworsky, 2006; Courtney, Piliavin, Grogan-Kaylor, & Nesmith, 2001; Reilly, 2003). The matching of a youth with a mentor could possibly support building of skills around creating strong, healthy, and stable relationships, which are key ingredients for any adolescent's successful transition to adulthood (Spencer, Collins, Ward, & Smashnaya, 2010). In addition, mentoring has been identified as a potential way to meet the youth's need for supportive connections (Daining & DePanfilis, 2007; Massinga & Pecora, 2004).

However, these supportive connections, even under optimal conditions, can be hard to establish because mentoring only has modest benefits for youth (Dubois, Holloway, Valentine & Cooper, 2002). In some cases, the small effects only last for a short period of time (Aseltine, Dupre, & Lamlein, 2000). Research is beginning to point to a key set of factors that distinguish effective mentoring program (Rhodes & Dubois, 2006). These key factors are duration, consistency, and emotional connection.

Although, mentoring has some effects that could have a positive impact on the at-risk foster care adolescent's life, there are pitfalls that must be taken into consideration when implementing this type of program for this population. The first pitfall deals with development of interpersonal relationships. Consideration must be made when

connecting mentors to foster care adolescents who may have some attachment-related difficulties (Mennen & O'Keefe, 2005). Along with attachment related difficulties, the issue of devalued sense of self, mistrust of others, and wariness in relationships must also be considered when building meaningful connections between foster care adolescents and mentors (Price & Glad, 2003).

Another pitfall is ineffective program administration. Program administration is effective when there are clear goals for the program and a concise definition of mentoring (DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011). There needs to be careful screening of mentors, along with honest discussions around the challenges posed by forging relationships with foster care adolescents (Spencer et al., 2010; Marcellus, 2010). It is important that program administrators consider the dynamics of foster care adolescents and their families when pairing with a mentor. The introduction can possibly lead to a parent feeling threatened, a youth feeling conflicted or a sibling being jealous. This experience could also lead to the foster adolescent experiencing more emotional harm.

The final pitfall is efficiency, which is tied into the policies and procedures that are used within child welfare systems. It should be assumed that if a child welfare system is going to consider investing in a good mentoring program, then it will be expensive. This raises the question: Should this be an avenue considered when there are limited funds allocated for child welfare? Limited funds may be considered spent better by increasing the number of foster care adolescents served compared to ensuring that they are being served well (Hayward & Cameron, 2002). Overall, mentoring can be an avenue

that provides some support, but without first taking care of basic needs such as housing, employment, education, and health care for foster care adolescents who will eventually transition to adulthood, this will only be a quick fix to a systemic issue (Spencer et al., 2010).

Academic Resilience

Academic resilience research is defined as the study of high educational achievement despite risk factors that normally produce low academic performance (Morales & Trotman, 2004). Martin and Marsh (2009) described academic resilience as a student's ability to deal with chronic adversity that threatens the student's educational processes. The purpose of resilience research is to increase the understanding of the resilience process so that it can be transposed to other potentially resilient individuals. Morales (2008) supported this notion by suggesting that resiliency research is a mode of exploring the effectiveness of academic resilience on the academic stability of low SES students, such as those from African American and Hispanic backgrounds.

There are factors that appear to contribute to academic resilience. Martin and Marsh (2006) examined the psychological and educational correlates of academic resilience. They found that five factors predict academic resilience: self-efficacy, control, planning, low anxiety, and persistence. Based on these findings, Martin and Marsh proposed the 5 C model of academic resilience. The C's are confidence (self-efficacy), coordination (planning), control, composure (low anxiety), and commitment (persistence). Additionally, the study showed that academic resilience predicted three

educational and psychological outcomes. The outcomes were enjoyment of school, class participation, and general self-esteem.

The educational and psychological outcomes mentioned can be difficult for foster children to attain within a school setting. Academic difficulties within the foster care population have been attributed to placement instability and length of involvement with the child welfare system. Schelble, Franks, and Miller (2010) concluded that maltreated children with academic difficulties run the risk of dysregulated emotion patterns because of trauma and exposure to unhealthy interactions between adults. Jaffe and Gallop (2007) conducted a longitudinal study of maltreated children followed over a period of three years. They found that the majority of the children were resilient in at least one domain. Two percent of the children were consistently resilient across domains and time periods, and 11 to 14% was resilient across all three domains at a given time. The children who demonstrated resiliency across all three domains demonstrated (a) no mental health problems, (b) average or above levels in school, and (c) appeared socially competent.

Some maltreated children show consistency within the three domains and demonstrate academic resilience. However, other maltreated children do not demonstrate the academic resiliency that leads to academic success. According to Morales and Trott (2004), convincing evidence suggests the study of academic resiliency of low SES minority students is lacking because there is a preoccupation with academic failure; consequently, research focusing on positive academic outcomes is sparse. There is also a continuing focus on identifying protective factors instead of examining specific processes by which the factors result in outstanding academic achievement.

Methodology

Resilience is an area that has gained a considerable amount of attention in the past decades because of the impact it has had on children and youth and their ability to cope and adapt in spite of adversity. It can be studied across the developmental lifespan. However for the purpose of this study, descriptions of approaches will focus on studies that have used different methods to study adolescence and resilience. Adolescence is a developmental stage where risk taking and vulnerability can be common (Newman & Newman, 1995). The area of resilience and adolescence has mainly been explored from a quantitative perspective. Waaktaar and Torgersen (2012) reviewed the genetic and environmental factors that affect trait resilience in 2,938 adolescent twins in 1,394 families from seven national cohorts in Norway. Using a linear regression, they found that additive genetic sources accounted for 50% of the informant specific variation in mothers and fathers scores. In twins, the variation was 40% because of additive and non-additive genetic factors and the remaining 60% because of non-shared environmental factors. In mothers' scores, the additive genetic factor effect was larger for boys than girls.

Similarly, Salazar-Pousada, Arroyo, Hidalgo, Perez-Lopez, and Chedraui (2010) studied pregnant adolescents and the impact of resilience and depressive symptoms. The study involved 302 pregnant adolescents who were assessed using two validated inventories, the Center for Epidemiologic Studies Short Depression Scale (CESD-10) and the short version of the Resilience Scale (RS). A case-control approach was used to compare differences between adolescents and adults. Salazar-Pousada et al. found that

56.6% pregnant adolescents had a high score of 10 or more on the CESD-10. Despite these high scores, there was no difference between adolescents and adults in depressed mood rate. Adolescents displayed lower resilience based on the lower total on the RS. Using logistic regression, Salazar-Pousada et al. did not find risk factors for depressed mood; however, having an adolescent partner and preterm delivery related to a higher risk for lower resilience.

Adolescents and motherhood have also been studied using a quantitative method. In Black and Ford-Gilboe's study (2004), 41 adolescent mothers provided verbal responses to items on the Resilience Scale, Health Options Scale, Health Promoting Lifestyle Profile, and a demographic questionnaire. The results showed moderate positive relationship between mothers' resilience and family health promotion. There was also a moderate correlation observed between family health promotion and mother's health promoting lifestyle practices.

Quantitative methods have also been used with adolescents in foster care. Taussig, Culhane, Garrido, and Knudtson (2012) explored the impact of mentoring and skill group intervention for preadolescent children in foster care on placement stability and permanence at one year post intervention. A randomized, controlled trial was conducted on 9- to 11-year-old children who were maltreated and placed in foster care ($n = 54$ control; $n = 56$ intervention). The findings showed that 71% intervention youth were less likely to be placed in residential treatment. A subsample of intervention foster care children who lived in nonrelative foster care had fewer placement changes (44%), were

less likely to be placed in a residential treatment center (82%), and were five times more likely to have attained permanency at one year post intervention.

Longitudinal studies have also been used to follow-up adolescents' experience over time within foster care. Park and Ryan (2009) conducted a longitudinal study that followed 5,978 children in out-of-home care to determine if placement and permanency outcomes differed between children with and without a history of inpatient mental health treatment. Data was obtained from child welfare and Medicaid records from the state of Illinois. The data was analyzed with a logistic regression and survival analysis. Findings showed that a history of inpatient mental health treatment preceding out-of-home placement was associated with an increased risk of placement instability for White children and a decreased likelihood of permanency for African American children.

Critical Analysis of the Literature

This section will discuss some of the limitations inherent in the current resiliency and foster care adolescent literature. The limitations include sample, unrepresentative sample sizes and an emphasis on correlational research, with low statistical power and reliance on single measures and methods.

Much of the literature on adolescent resiliency and foster care comes from studies using small, convenience samples. These small samples likely reflect difficulties in obtaining participants, who are minors whose legal guardians are not readily accessible due to moving placements in foster care. Thus, obtaining informed consent can be difficult. In addition, sample sizes can be impacted by the age that participants were recruited to participate in a study. The researcher runs the risk of losing participants when

they become emancipated. The challenge in obtaining participants has also precluded the use of probability samples, which has further restricted the generalizability of the results. Jones (2012), for example, explained that generalization can be limited because samples may only be studied from a single site where foster children may have resided. Dunn, Culhane, and Taussig (2010) supported the difficulty of generalization by stating that participants tend to be of a limited age range that are living in out-of-home care as a result of court orders, so the comparability of these children to those living in care with others may be limited or even inappropriate.

Compounding these generalizability issues, many resiliency studies (e.g., Hass & Graydon, 2009; Jones, 2012; Samuel & Pryce, 2008) have involved quantitative measures of resiliency using participants' self-reports. The self-report format provides a convenient way to obtain quantitative data from participants, but self-reports are subject to response patterns, including, most commonly, a social desirability bias. Social desirability bias occurs when a respondent does not answer questions truthfully, so the respondent appears in a favorable light (Miller, 2011). Nederhof (1985) suggested two modes of coping with social desirability. The first entails the use of social desirability scales and the rating of item desirability. The second mode consists of seven methods to prevent or reduce social desirability bias which include the use of forced choice items, the randomized response technique, and the bogus pipeline, self-administration of the questionnaire, the selection of interviewers, and the use of proxy subjects.

Compounding these validity issues, many studies that have examined resiliency have operationally defined the concept using just one instrument. Because resiliency

represents a broad construct that may change upon contextual factors, the use of a single instrument to measure the concept may result in mono-operational bias. Thus, potentially salient aspects of the concept of resiliency for a given population may not be tapped by the single instrument used in a given study. For example, in their study on adolescent mothers' resiliency and health promoting practices, Black and Ford-Gilboe (2004) only used the Resilience Scale to measure resilience. Similarly, in a study conducted by Schelble, Frank, and Miller (2010), the Child and Adolescent Functional Assessment Scale (CAFAS) was the only instrument used to determine academic resilience and emotional dysregulation.

In addition to mono-operational bias regarding the concept of resiliency, much of the current literature on adolescent resiliency and foster care also comes from studies using a single method to collect data. A common method of data collection in foster care and resiliency research is in-depth interviews (Hines, Merdinger, & Wyatt, 2005; Morales, 2010). Possible pitfalls that occur when participants are interviewed include courtesy bias (participant answering what they believe interviewer wants to hear), exaggeration/dishonesty, misunderstanding of the purpose of the interview, and faulty memory. In addition, bias, such as the desire to help the participant, failure to follow instructions in administering the questions, and reactions to response can be induced by the interviewer. The setting in which participants complete the interview may further affect the validity of the participants' responses. Osterling and Hines (2006) found that the interview location may impact the forthrightness of the interviewee. Similarly, the

structure of the interview may adversely impact the length and breadth of participant's responses to the questions (Dunn, Culhane, & Taussig, 2010).

Many studies that have examined resilience and foster care have been correlational studies (Jones, 2013; Salazar, Keller, & Courtney, 2011; Williams & Nelson-Gardell, 2012). Some of the variables found that were associated with resiliency in Jones study were family contact and family support. Similarly, Williams and Nelson-Gardell reported in their study that school engagement, caregiver social support, hope and expectancy, caregiver education and SES were predictors of resiliency. Social support was also found as having a direct effect on depressive symptoms for young adults in care (Salazar et al, 2010). These correlational studies have revealed a relationship between variables, but they cannot establish a cause and effect relationship between variables. Schelble, et al. (2010) discussed the significance of variables such as race and age with academic resilience. They argued that this type of finding supports the need for further analysis of these relationships in maltreated children because the correlational design could not establish causal links.

Low statistical power, a final limitation of the existing resiliency research on adolescents, relates to both the small sizes and the use of correlational research. Cohen (1992) explained that the power of statistical tests depends on the significance criterion, the sample size, and the population effect size. He stated that researchers need to be aware of committing a Type II error, or mistakenly retaining the null hypothesis as tenable when it is in fact false. The probability of making a Type II error (a false negative) is inversely related to statistical power. Small sample sizes are associated with

low statistical power. Correlational studies tend to have a small effect size, and thus, often require large samples to have sufficient statistical power. For example, Sharpley, Palanisamy, and McFarlane (2013) studied the association between childhood events, recent life stressors, psychological resilience and depression and reported that a limitation in the study was the sample size and suggested that a larger sample would have assisted in the ability to detect small effects. These errors can sometimes not be detected because some researchers avoid reporting effect size, and one plausible explanation may be that they do not have a clear idea when or how to calculate and interpret them (Rosnow, Rosenthal, & Rubin, 2000).

Summary

Resilience research has evolved over the years. The concept of resilience has moved from being viewed from a pathological perspective to a growth perspective. There are common factors among all definitions of resilience. These factors are intelligence, temperament, and support from family and organizations. There is disagreement concerning which factors play the most significant role in individuals' lives. The definition of resilience has been broadened to include academic resilience as well as social resilience. Academic resilience in the past decade has become important because of its impact on foster care children's academic success.

Foster care children represent a group of children who are unable to remain in their homes and have to be placed in an alternative placement. The interruptions in placements can have an impact on the foster care child receiving adequate education, which can lead to school failure. A resiliency framework can give insight into the

understanding of foster children and their academic success in a child welfare system. In addition, consistency of care, continuity of education, social support, SES, and mentoring are factors that may influence a child's response to adverse circumstances.

Based on the literature reviewed in this chapter, the intention with this proposed study was to add to the current body of literature by conducting a study to examine resilience and the effect on academic success with Bermudian foster care adolescents. The next chapter will describe the method for obtaining the data to be analyzed for resilience and its impact on foster care adolescents in the Bermuda child welfare system.

Chapter 3: Research Method

As discussed in Chapter 2, researchers have examined resilience, academic success, and foster care within the United States and United Kingdom, but there has been no research on such children in Bermuda. This study explored the relationship among resilience, age, gender, and academic performance for adolescents in the foster care system in Bermuda. This chapter focuses on describing the research design, population, instruments, and data analysis that I used to conduct the study. The study used a nonexperimental, correlational design. I also present the rationale of using this particular research design.

Research Design and Approach

Numerous resiliency researchers have focused on the interaction between protective and risk factors in high-risk populations (Cicchetti & Rogosch, 2009; Hjemdal et al., 2007; Olatunji et al., 2008; Prince-Embury, 2008). Findings have shown that poverty (Buckner et al., 2003; Seccombe, 2000) and related problems, such as crime (Palermo, 2009), violence (Christiansen & Evans, 2005; Madsen & Abell, 2010) and lack of opportunities significantly affect the ability for a child to succeed in school (Landau, 2007). This can lead to delinquency in later years (Condly, 2006). Despite literature discussions regarding protective and risks factors for adolescent growing up in the U.S. foster care system, limited literature can be found on foster children growing up in the Bermuda foster care system and the factors associated with their resiliency and academic performance.

This study employed a correlational design. The design entailed testing the hypothesis of a relationship between resiliency and academic performance for Bermuda teenagers living in foster care. The results from the quantitative data provided a generalized understanding of resilience and its effect on academic success. The correlational design was used to answer the following research questions and their associated hypotheses.

Research Question 1: Is resiliency related to academic performance?

H1₀₁: Resiliency as measured on the RS is not related to academic performance as measured by GPA.

H1_{a1}: Resiliency as measured by scores on the RS is positively related to academic performance as measured by GPA.

Research Question 2: Do age and gender moderate the relationship between resiliency and academic performance?

H2₀₂: Age and gender do not moderate the relationship between resiliency, as measured by scores on the RS, and academic performance, as measured by GPA.

H2_{a2}: Age and gender moderate the relationship between resiliency, as measured by scores on the RS, and academic performance, as measured by GPA

Research Question 3: Is resiliency related to academic achievement?

H3₀₃: Resiliency, as measured by scores on the RS, is not positively related to academic achievement, as measured by scores on the reading and math subscales of the WIAT-III.

H3_{a3}: Resiliency, as measured by scores on the RS, is positively related to academic achievement, as measured by scores on the reading subscale of the WIAT-III.

H3_{a3}: Resiliency, as measured by scores on the RS, is positively related to academic achievement, as measured by scores on the math subscale of the WIAT-III.

Research Question 4: Do age and gender moderate the relationship between resiliency and academic performance?

H4_{o4}: Age and gender do not moderate the relationship between resiliency, as measured by scores on the RS, and academic achievement, as measured by scores on the WIAT-III.

H4_{a4}: Age and gender moderate the relationship between resiliency, as measured by scores on the RS, and academic achievement, as measured by scores on the WIAT-III.

Setting and Sample

The participants were chosen from the Department of Child and Family Division of Family Services in Bermuda. This agency is responsible for children in Bermuda who are placed in foster care by the Family Court of Bermuda under the Children Act 1998. The eligibility of participants was based on specific criteria. The participants were 51 adolescents between the ages of 12 to 17 years. The following criteria were used to determine participants' eligibility for this study:

1. The participant had resided in foster care longer than 3 months.

2. The participant either lived in a foster home, kinship placement, or a group home setting.
3. Children with severe behavioral diagnoses were excluded from the sample.
4. The participant was enrolled in a public school within the Bermuda education system for at least 3 months.
5. Participants who attended alternative educational settings such as private or homeschools were excluded for this study.
6. Participants who were 18 years old and currently in foster care because of special circumstances and attended public schools were not be eligible to participate.

A preanalysis statistical power estimate using the G*Power program was conducted to determine an appropriate sample size. G*Power is a stand-alone power analysis used to analyze many common statistical test and is commonly used in the social, behavioral, and biomedical sciences (Faul, Erdfelder, Lang, & Buchner, 2007). Results from similar empirical studies served as a basis for determining an appropriate anticipated effect size for the hypotheses of this study. In a study of 107 foster care youth where resiliency among children living in foster and kinship care was studied, Metzger (2008) reported an effect size of $R^2 = .31$ for self-concept, resiliency, and social support. Evans (2004) research involving academic achievement in children living in foster care revealed an $R^2 = .22$ for age, race, reason for care, and length of time between placements.

In their study of 158 children who had experienced trauma, Schelble, Franks, and Miller (2010) reported emotional dysregulation and placement stability having accounted

for 43% of the variance in academic achievement. These studies suggested that a R^2 ranging from .22 to .43, considered a medium effect, could be justified for the current study. Accordingly, an anticipated effect size was selected on the lower end of this range, using an $R^2 = .24$ for the current investigation. Using an alpha of .05, a power level of .80, and medium effect size ($f^2 = .24$), a g* Power program (Faul et al, 2007) was used to determine an appropriate minimum sample size. The first and third hypotheses required 35 participants and the second and fourth hypotheses required 50 participants. Accordingly, to ensure an adequate sample size to test all hypotheses, 50 participants were sought for this study.

Procedures

A flyer was designed with information about the study and given to social workers to share with potential foster care adolescents who were currently in the Bermuda foster care system. The procedure for data collection is described below:-

1. Full written consent was obtained from the school and the parent/guardian as well as an assent form from the child.
2. Before the children participated in the study, they were informed about their participation in the study, the confidentiality of the data to be collected, and their right to withdraw out of study at any point.
3. Each participant was administered the RS a self-report questionnaire that measures an individual's ability to bounce back from adversity. Scores on this instrument range from 25 to 175. Resilience Scores greater than 145 indicate high

resilience, scores from 65 to 81 indicate moderately low to moderate resilience, and scores of 64 and below indicate low resilience.

4. The participants' scores were calculated based on the 25 items that each participant responded to during administration of the questionnaire.
5. Participants were instructed that there was no right or wrong answers, and it would take approximately 10 to 15 minutes to complete the items.
6. The participants' age and gender was obtained from their case files at the Department of Child and Family Services. Their GPAs were collected from school records. The researcher administered the math and reading subtests of the WIAT-III to determine an achievement score.
7. Hypotheses were tested using Pearson product moment correlations and multiple regression.

Research Questions and Hypotheses

In education, the issue of what determines success for an at risk student such as self-monitoring (Bercher, 2012), mentoring (Brown, 2011), and student resilience (Shepard, Salina, Girtz, Cox, Davenport, & Hilliard, 2012) are well examined by educators, due to the question good educators ask: What makes a good student? This study examined whether resilience was related to academic performance for students in Bermuda that have grown up in the foster care system. Resilience was defined by assessing resiliency factors as measured by the RS and determining how these factors impact achievement as measured by the WIAT-III and academic performance as measured by GPA for foster care children in Bermuda.

Research Question 1: Is resiliency related to academic performance?

H1_{o1}: Resiliency as measured on the RS is not related to academic performance as measured by GPA.

H1_{a1}: Resiliency as measured by scores on the RS is positively related to academic performance as measured by GPA.

Research Question 2: Do age and gender moderate the relationship between resiliency and academic performance?

H2_{o2}: Age and gender do not moderate the relationship between resiliency, as measured by scores on the RS, and academic performance, as measured by GPA.

H2_{a2}: Age and gender moderate the relationship between resiliency, as measured by scores on the RS, and academic performance, as measured by GPA

Research Question 3: Is resiliency related to academic achievement?

H3_{o3}: Resiliency, as measured by scores on the RS, is not positively related to academic achievement, as measured by scores on the reading and math subscales of the WIAT-III.

H3_{a3}: Resiliency, as measured by scores on the RS, is positively related to academic achievement, as measured by scores on the reading subscale of the WIAT-III.

H3_{a3}: Resiliency, as measured by scores on the RS, is positively related to academic achievement, as measured by scores on the math subscale of the WIAT-III.

Research Question 4: Do age and gender moderate the relationship between resiliency and academic performance?

H4_{o4}: Age and gender do not moderate the relationship between resiliency, as measured by scores on the RS, and academic achievement, as measured by scores on the WIAT-III.

H4_{a4}: Age and gender moderate the relationship between resiliency, as measured by scores on the RS, and academic achievement, as measured by scores on the WIAT-III.

Data Analysis

In this study, the researcher examined the degree to which resilience relates to academic success in Bermudian foster care adolescents. Participants were told the details about their involvement in and requirements for participation in the study and provided with a consent and assent form. The foster care adolescents' GPAs were obtained from the public school that each participant attended at the time of this study. Each participant was administered the RS by the researcher in a designated office at the Department of Child and Family Services. The participants' scores on the RS, their GPAs, and demographic information were recorded on an Excel sheet and imputed into SPSS 21.0 a statistical program for analyses. Resiliency as measured by the RS served as the predictor variable in Hypothesis 1 and Hypothesis 3; age and gender were added as predictor variables in Hypotheses 2 and 4. GPA served as the criterion for hypotheses 1 and 2; scores on the math and reading subscales of the WIAT-III served as the criterion variables for Hypotheses 3 and 4. Hypotheses 1 and 3 were analyzed using Pearson

product moment correlations; Hypotheses 2 and 4 were tested using a linear multiple regressions.

Instrumentation and Materials

Two instruments were used in this study: The RS and the WIAT-III. Details regarding these instruments and their psychometric properties follow.

The Resilience Scale

The Resilience Scale (RS) is an instrument used to determine an individual's level of competence and acceptance when dealing with adversities in life (Wagnild & Young, 1993). It measures the construct of resilience. The inception of this tool came about because of work done in the nursing field with the elderly and how they coped with pain from health problems. Wagnild (2011) described resilience as a response to adversity where an individual's original state is disturbed by the adversity experienced but the individual is able to re-establish equilibrium at a different level than the original state. Wagnild and Young (1990, 1993) state there are five underlying characteristics that make up the RS and are referred to as the Resilience Core.

The five essential characteristics of resilience measured by the RS are purposeful life, perseverance, self-reliance, equanimity, and existential aloneness. Purposeful life refers to having a sense of an individual's own meaning or purpose in life. According to Wagnild (2011), this particular aspect of the resilience core is the driving force in life. Perseverance deals with an individual's determination to continue to deal with life despite difficulties, discouragement, and disappointment. Equanimity examines the balance and harmony required to balance an individual when adversity is experienced. Self-reliance

explores individuals' belief about themselves and assists with giving them a clear understanding of their capabilities and limitations. Finally, existential aloneness determines the extent that an individual accepts whom they are despite their adversity.

The RS is a self-report instrument that consists of 25 items. The items are presented in a 7-point Likert scale ranging from 1 - disagree to 7 - agree. Wagnild (2011) reported figures for internal consistent reliability with the alpha coefficients ranging from 0.84 to 0.94. For the present study, this tool was selected because it is readable at the 6th grade level, easy to administer and score, applicable to the population in the study and its focus is on positive psychological qualities rather than deficits. Studies have supported the validity of the RS as a tool that can be used to measure resiliency in adolescents. These articles mainly focused on adolescents who were homeless, single parents, or examined gender role in resiliency.

Wechsler Individual Achievement Test – Third Edition (WIAT-III)

The Wechsler Individual Achievement Test – Third Edition (WIAT-III) is a test that is administered to assess achievement of children, adolescents, and young adults aged 4 years to 19 years. The main purposes of the WIAT-III are to (a) determine eligibility for services, (b) identify academic strength and weaknesses, and (c) provide intervention at varying levels of intensity and for different purposes (WIAT, 2009, Breaux). The administration times vary based on the age of the examinee and the amount of subtest administered. In this study the reading and math subtest scores of each participant were used.

The WIAT-III was nationally standardized on 2,775 individuals and has comprehensive normative information such as age; grade based standard scores, percentiles, and age/grade equivalents for each of the subtests. Burns (2010) indicated that reliability on the WIAT-III was done using a split-half reliability method and corrected by using the Spearman Brown formula. The reliability for the subtests ranged from .84 to .97. The validity was average and ranged from .60 to .82. Validity was also determined by comparing the WIAT-III with other measures that assess ability. The comparisons are .78 with the Wechsler Preschool and Primary Scales of Intelligence – Third Edition (WPPSI-III), .82 with the Wechsler Intelligence Scale for Children- Fourth Edition (WISC-IV) and .67 with the Differential Ability Scales-Second Edition (DAS-II) (Elliott, 2007). The internal consistency reliability of the WIAT-III was assessed for the participants involved in this study.

Protection of Human Participants

I protected the participants' confidentiality and identity by assigning a number to each participant. Participants were allowed to review their transcripts and the formulated analysis and make changes, if needed. All participants were informed that their participation in the study was voluntary and information gathered would not affect their relationship with the agency. They were advised that information will be shared with the Department of Child and Family Services for the purpose of showing how the results may be affecting the population studied. Participants were required to sign an assent form since they are considered a vulnerable population because they are wards of the state and cannot consent to participate in the study. This was to ensure that each participant

understood his or her rights concerning consent for taking part in the study. Participants were given the opportunity to review the study's results if desired.

Dissemination of Findings

The raw data was entered into a statistical program (SPSS 21.0) for analysis and stored. A copy was kept in the office on a memory stick as well as in an office locked file cabinet. Another copy will be stored on my home computer and in a locked drawer. All data will be stored for at least 7 years. The hard copies of the RS questionnaire were shredded at the completion of the study. The findings were shared with the stakeholders at the Department of Child and Family Services for the purposes of educating professionals such as social workers, educators, and psychologists around variables that may assist with building resiliency within this population and to gain insight into this population's educational success. The researcher plans to submit the results of this study for publication in a peer-reviewed journal.

Threats to Validity

The quantitative data in the study has threats to construct validity because only one instrument was administered to measure the concept of resilience. This is known as mono-operational bias. There are newer constructs being developed regarding the measurement of resilience, but the RS (Wagnild & Young, 1991) was chosen for this study because of its history of use and validity and reliability with adolescents in a variety of settings (See Instrument section). Although using more than one instrument would reduce mono-operational bias, the researcher had to consider the design and the timeframe to complete the study. This researcher was the only examiner that

administered the instruments to ensure that the validity was consistent across participants and that scoring was completed.

Golafshani (2003) described quantitative research as the researcher's ability to employ experimental methods and quantitative measures to test hypothetical generalizations with the intent of showing a causal relationship between variables. This study used a correlational design, so cause and effect relationships between the analyzed variables will not be able to be inferred. However, the study may provide new information around resiliency and academic success in Bermudian foster care adolescents, which could be used in future studies.

Low statistical power represents another threat to validity; low statistical power can arise with small sizes and the use of correlational research. The researcher conducted a pre-analysis statistical power estimate to predict appropriate sample size and population effect size. This analysis was important because low statistical power can be related to the researcher committing a Type II error (Cohen, 1992).

Summary

The current chapter elaborated on the research design and approach for the study. The goal was to use a nonexperimental, correlational design to gather data from participants. The researcher collected the data through the use of instruments such as the RS and the WIAT. These instruments were chosen because the validity and reliability support that the tools measure resilience and academic achievement in adolescents. Once the data was collected, a multiple regression was used to test the hypotheses proposed in

the study. These results will be documented in Chapter 4 in detail. The next chapter describes in depth the statistical outcomes for the data.

Chapter 4: Results

The purpose of this study was to examine the relationship between resiliency and academic achievement among Bermuda foster care children who attend public schools. The four research questions posed within the study were analyzed using a multiple regression statistical procedure, which looked at correlations between variables. This chapter explores the results by providing a detail description of the participants and an overview of the data analyses that were conducted.

Data Collection

The data for this study were collected from February 9 to June 3, 2015. The participants in the sample ranged in age from 12 to 17 years old. The sample included 25 males and 26 females. Each participant was in the care of the Department of Child and Family Services in Bermuda for a minimum of 3 months either in a foster care, a kinship placement, or a group home.

Initially, the target age for the sample ranged from 13 to 17 years old. However, recent strategic planning within the Department of Child and Family resulted in fewer children remaining in foster care. Thus, in order to obtain the minimum sample size necessary to conduct the statistical analyses, I petitioned the IRB to lower the age range to 12 years old, and the IRB granted permission based on the additional explanation provided.

A flyer was produced with the description of the study and disseminated to social workers within the Department to share with potential adolescents. Social workers also identified adolescents on their caseloads that this researcher could contact to find out

their interest and willingness to complete the study. Once participants confirmed their interest in being a part of the study, this researcher scheduled an appointment within 24 to 48 hours to conduct the study, discuss confidentiality, and have consent and demographic information completed.

For most participants, the process took approximately 90 minutes to complete. Participants verbalized that they felt safe knowing that their identities would not be divulged and liked the idea of having assigned identification numbers. This understanding of confidentiality was important to stress to this already vulnerable population. Each participant was given the opportunity to review transcripts and analyses but no one requested to see documentation.

Description of Sample

The participants in the sample ranged in age from 12 to 17 years old, with a mean age of 14. Females represented 51% of the sample and males were 49%. In terms of type of placement, 45.1% of the participants identified living in a foster placement whereas 37.3% lived in a kinship arrangement, and 17.6% stated they resided in a group home. In terms of race, 80.4% classified themselves as “Black,” and 19.6% selected “Other.” These race classifications reflected the participants’ perception of their race. The 19.6% who selected “Other” did not ostensibly appear to have a different racial background than the 80.4% who selected “Black,” but I wanted to be sensitive to the participants’ views. All participants came from the only child welfare department in Bermuda. Table 1 provides a more detailed summary of the demographic characteristics of the sample.

Table 1

Demographic Information for the Sample (N = 51)

Variable	Frequency	Percentage
Gender		
Male	25	49.0
Female	26	51.0
Age		
12	14	27.5
13	11	21.6
14	5	9.8
15	6	11.8
16	9	17.6
17	6	11.8
Race		
Black	41	80.4
Other	10	19.6
Placement		
Foster	23	45.1
Kinship	19	37.3
Group	9	17.6

Preliminary Analyses

Before proceeding with the planned multiple regressions, I assessed the suitability of the data in relation to the assumptions underlying multiple regression. The tests addressed normality, linearity, homoscedasticity, collinearity, and variance. An analysis of standard residuals was carried out, which showed that the data contained no outliers. Tests to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern. Table 2 provides a detailed summary on collinearity.

Table 2

Collinearity Results

Variable	Tolerance	VIF
Age	.99	1.01
Gender	.98	1.01
RS	.98	1.01

The data met the assumption of the independence of errors (Durbin-Watson value = 1.83 reading; 1.67 math; and 2.31 GPA). The histogram of standardized residuals indicated that data contained approximately normally distributed errors (Figure 1), as did the normal P-P plot of standardized residuals which showed points that were not completely on the line, but close (Figure 2). The scatterplot of standardized predicted values showed that the data met the assumption of homogeneity of variance and linearity. (Figure 3). The data also met the assumption of non-zero variances (Age, Variance = 3.25, RS score, Variance = 464.81, GPA, Variance = .893, Math, Variance = 82.50 and Reading Variance = 173.28).

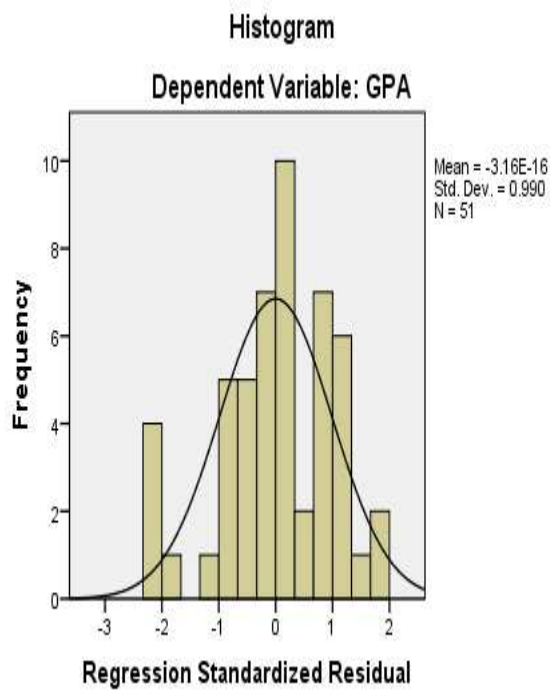


Figure 1. Histogram of standardized residual.

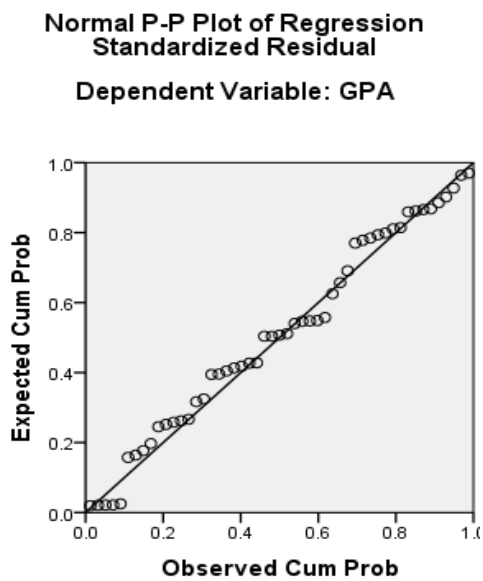


Figure 2. Normal P-P plot of standardized residual

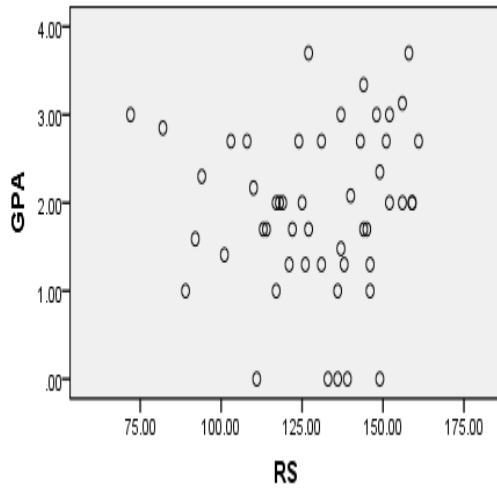
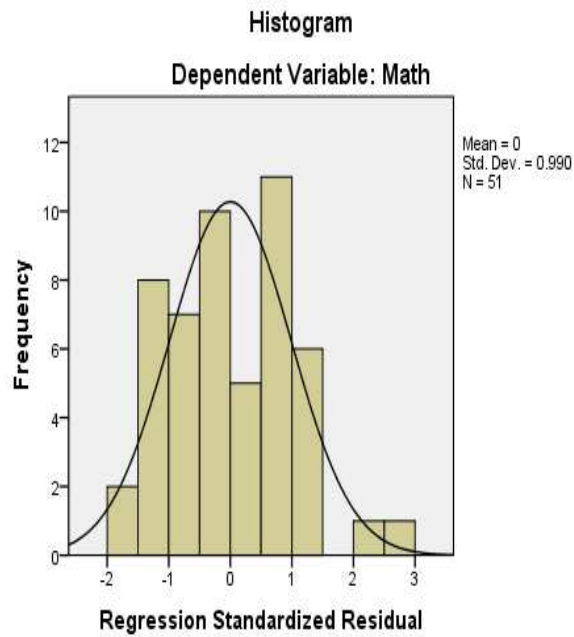


Figure 3. Scatterplot of GPA scores and RS scores

Figure 4. Histogram of standardized residual



Normal P-P Plot of Regression Standardized Residual

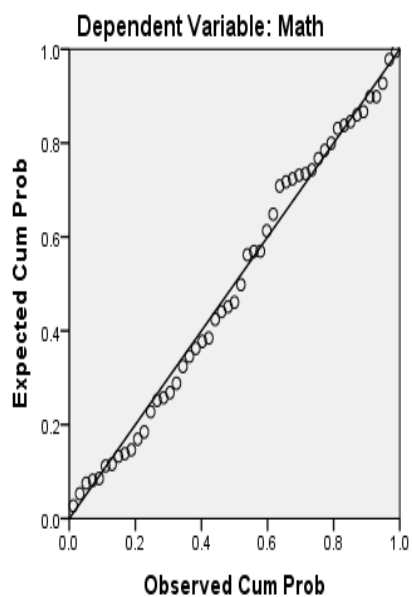


Figure 5. Normal P-P plot of standardized residual

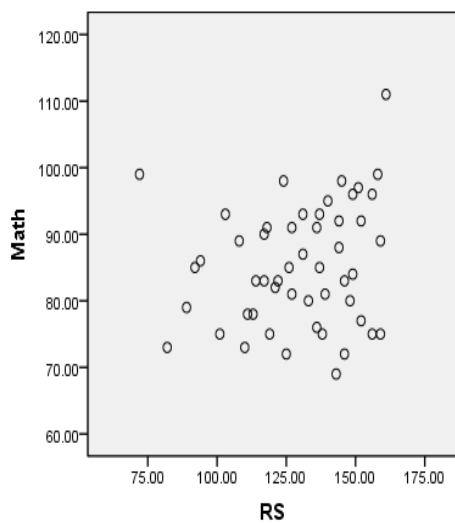


Figure 6. Scatterplot of math scores and RS scores

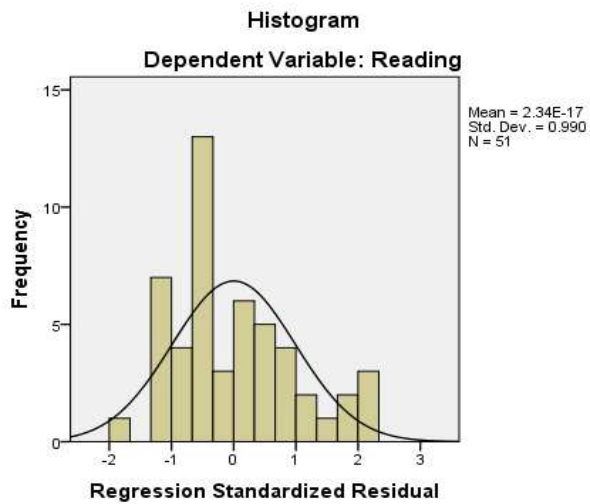


Figure 7. Histogram of standardized residual

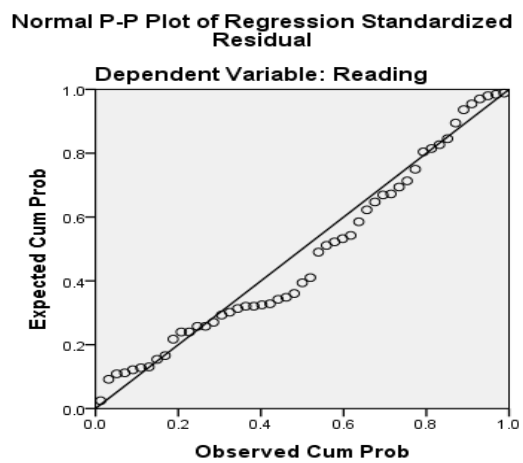


Figure 8. Normal P-P plot of standardized residual

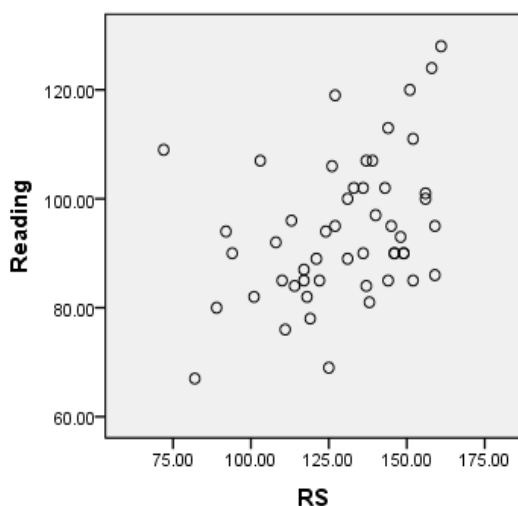


Figure 9. Scatterplot of reading scores and RS scores

Results of the Data Analyses

The study was based on four research questions and associated hypotheses. This section explains the results of the data analyses in relation to these research questions and the hypotheses. Correlation and multiple regression analyses were conducted to examine the relationship between GPA, achievement, and various potential predictors.

Research Question 1 and Hypothesis 1

The first research question explored whether resilience is related to academic performance (as measured by GPA). The hypothesis predicted that resiliency would be positively related to GPA, with the null hypothesis predicting no relationship. The null hypothesis was tested using a Pearson's product moment correlation. The results showed no statistically significant relationship ($r = 0.058$, $p = .68$) between resiliency and GPA. Thus, the null hypothesis was retained.

Research Question 2 and Hypothesis 2

The second research question examined whether age and gender moderate the relationship between resiliency and academic performance. The alternative hypothesis predicted that age and gender moderate the relationship whereas the null hypothesis predicted no relationship. As described above in relation to hypothesis 1, there was no statistically significant relationship between resiliency and GPA, but it was possible that a relationship might have existed for subgroups. Based on past research (e.g. McFarland et al., 2011; Stein, 2008; Wei et al., 2015) academic performance can vary between boys and girls. Stein (2008) reported that good educational outcomes for children in care are associated with gender differences, mainly girls doing better than boys. Wei et al. (2015) found boys outperform girls in mathematics trajectories whereas girls outperform boys for reading trajectories. Similarly, McFarland et al. (2011) indicated differences with males and females within gender specific classes compared to traditional class. For instance, math scores were higher for females in gender specific classes compared to traditional classes. There was also more suitability between males and females to increase reading scores through a traditional classroom versus a gender specific classroom.

Therefore, to test Hypothesis 2, I examined whether there might be an interaction between age and resiliency or gender and resiliency and GPA. The interactions were computed by taking each moderator and multiplying by resiliency. For instance, age scores were multiplied by resiliency scores to create a new interaction that was labelled RSAge. Gender was transformed into dummy codes with male being coded as 1 and females as -1. The new values were multiplied by resiliency to create a label called

GenRS. The final interaction was created by taken age scores multiplied by gender values times resiliency. The interactions were created by multiplying each moderator variable by resiliency. A multiple regression analysis was used to test if age and gender had an interaction between resiliency and academic performance. The results of the regression indicated the six predictors explained 27% of the variance ($R^2 = .270$, $F(6, 44) = 2.71$, $p < .025$). The results revealed no significant interactions between gender and resiliency ($\beta = .010$, $p = .995$) and age and resiliency ($\beta = 2.33$, $p = .115$). Thus, the null hypothesis was retained.

Research Question 3 and Hypothesis 3

In the third research question, I examined the relationship between resiliency and academic achievement as measured by scores on the math and reading subtests of the WIAT-III. Originally, there was a planned to use total scores on the WIAT-III to measure academic achievement. However, the time commitment involved in administering the full WIAT-III was too lengthy for participants, so I administered the math and reading scores. This was done to support the foster adolescents' possible reluctance to engage since many of them have been through some type of formal or informal testing while in care. Thus, in order to assess the third hypothesis, two separate correlational analyses were conducted, one using math scores as the criterion (dependent) variable and one using reading test scores as the criterion (dependent) variable.

Subhypotheses math scores. The alternative hypothesis predicted that resiliency would be positively related to academic achievement based on math scores, with the null hypothesis predicting there is no relationship. The null hypothesis was tested using a

Pearson product moment correlation. The results showed no statistically significant relationship ($r = .184, p = .19$) between resiliency and math scores. Thus, the null hypothesis was retained.

Subhypotheses reading scores. The alternative hypothesis predicted that resiliency would be positively related to academic achievement based on reading scores, with the null hypothesis predicting no relationship. The null hypothesis was tested using Pearson product moment correlation. The results showed a statistically significant relationship ($r = .374, p = .007$) between resiliency and reading scores. Thus, the null hypothesis was rejected.

Research Question 4 and Hypothesis 4

The fourth question examined if age and gender moderate the relationship between resiliency and academic achievement based on math and reading scores. I conducted two separate multiple regressions, one using math scores as the criterion and one using reading scores as the criterion variable.

Subhypotheses math scores. The hypothesis predicted that age and gender moderate the relationship between academic achievement based on math scores, whereas the null hypothesis predicted no relationship. However, as revealed in the results from Sub-hypothesis 3a, no statistically significant relationship emerged between resiliency and math. Based on past research (e.g. McFarland et al., 2011; Stein, 2008; Wei et al., 2015) that supported gender and its impact on achievement, I assessed whether there might be an interaction between age and resiliency or gender and resiliency and math. As previously described in Hypothesis 2, age scores were multiplied by resiliency and the

interaction labelled RSAge. Dummy codes were created for gender than these new values were multiplied by resiliency and labelled GenRS. A multiple regression was used to test if age and gender had an interaction between resiliency and math. The results of the regression for math indicated the six predictors explained 21% of the variance ($R^2 = .211$, $F(6, 44) = 1.96$, $p < .092$). It was found that gender and resiliency did not significantly have an interaction on academic achievement based on math scores ($\beta = .520$, $p = .732$). However, age and resiliency did have a significant interaction on academic achievement and math scores ($\beta = 3.10$, $p = .046$).

Subhypotheses reading scores. The hypothesis predicted that age and gender moderate the relationship between resiliency and academic achievement based on reading scores, whereas the null hypothesis predicted no relationship. The age and resiliency moderator as well as gender and resiliency moderator were created as interactions to test the hypothesis. A multiple regression was used to test if age and gender had an interaction between resiliency and reading. The results of the regression for reading indicated the six predictors explained 31% of the variance ($R^2 = .318$, $F(6,44) = 3.41$, $p < .007$). It was found that gender and resiliency did not have an interaction on academic achievement based on reading scores ($\beta = -1.73$, $p = .224$) as neither did age and resiliency ($\beta = -.373$, $p = .792$).

Table 3.

Variables Predicting Resilience and Academic Success (N=51)

Variable	GPA			Math			Reading		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
Resilience	.003	.006	.058	.077	.059	.184	.228	.081	.374**
Age	.142	.068	.270*	-.077	.696	-.015	.740	.899	-.101
Gender	-.370	.121	-.395**	-2.47	1.24	.275*	-4.89	1.60	-.375**
Age x Resiliency	.005	.003	2.33	.069	.034	3.10*	.012	.045	.373
Gender x Resiliency	-.005	.010	.010	.036	.103	.520	-.172	.139	-1.73
Age x gender x resiliency	.000	.001	-.467	-.005	.005	-1.03	.007	.007	.992
<i>R</i> ²	.270			.211			.318		
<i>F</i>	2.71			1.96			3.41 **		

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

The first row in Table 3 describes the correlation results for Hypotheses 1 and 3 around academic success (GPA) and academic achievement (math and reading subtest) with resilience as predictor. The second and third row is analyses for criterion variables with resilience, age and gender being predictor variables. The last three rows focus on regression results for Hypotheses 2 and 4 around academic success and academic

achievement and interactions and predictor variables. The R^2 and F represent the results of all interactions and predictor variables.

Summary of Results

This study examined resilience in foster care adolescents and its relationship with academic success. Past research revealed a relationship between resilience and academic performance measured by GPA. The results from the study showed that GPA predicted no relationship. Since there was no significant relationship between resilience and GPA, subgroup interactions were tested. This resulted in there being no significant relationships between age and resiliency or gender and resiliency. In addition, there were two correlational analyses conducted, using math scores for one and reading scores for the other correlation. The results indicated no significant relationship between resiliency and math. However, reading had a significant positive relationship with resiliency. Finally, past research suggested the possibility of interactions between age and resiliency or gender and resiliency and math. The results for gender and resiliency were not significant but age and resiliency did have an interaction with academic achievement and math scores. These same interactions were conducted on reading scores and resulted in no significance for age and resiliency nor gender and resiliency. The next chapter will address findings, limitations, social change implications, and recommendations for future research.

Chapter 5: Discussion, Conclusion, and Recommendation

The focus of this study was to examine resilience and its impact on academic success for foster care adolescents in the Bermuda public school system. Resilience refers to the ability to be able to bounce back from adversity. Adolescents who grow up in the foster care system have a higher risk of school failure (Bruce, Naccarato, Hopson & Morelli, 2010). The issue of school failure and educational needs of foster care adolescents has been a concern for organization such as Casey Families who have studied this for decades (Casey, 2006). Casey indicated that a lack of educational continuity is a common phenomenon for these adolescents where home placement can mean a change of schools. According to Seita and Brown (2010), this group of adolescents can be considered a vulnerable population and finding solutions that enhance their educational success is important. Osgood et al. (2010) supported this notion of vulnerability with foster care adolescents because many of their challenges such as finding their own housing, dealing with juvenile systems, and arranging affordable medical services can impact on them having opportunities to continue their education.

Research studies have focused on foster care systems in jurisdictions such as the United States and the United Kingdom; however, no studies had examined academic success and resiliency of foster care children in Bermuda. In this study, the theoretical framework of resiliency was used based on Masten's (2006) work, which proposed that resiliency is based on individuals overcoming adversity and flourishing in the midst of their adversity. The purpose of the study was to examine whether individual resiliency factors measured by the Resilience Scale played a role in Bermudian male and female

foster care adolescents' academic success. GPA was used to determine academic performance whilst math and reading scores measured by the WIAT-III were used to determine academic achievement. The current chapter will focus on the results and findings relating to resilience and academic success as well as the implications for social change and recommendations for further studies.

Summary of Results

In this study data were collected from 51 adolescents living in foster care who were currently on a court order under the Children Act 1998 with the Department of Child and Family Services in Bermuda. The data included demographic information, resilience level, GPA as well as math and reading scores determined by the WIAT-III. This information was gathered with the intent of examining resilience and academic success. The sample ranged in age from 12 to 17 years old with females representing 51% and males 49%. There were 25 females and 25 males. In addition, 45.1% lived in foster placements, 37.3% in a kinship placement, and 17.6% in a group home. Overall, in terms of race, 80.4% classified themselves as "Black," and 19.6% selected "Other." These race classifications reflected the participants' perception of their race. The 19.6% who selected "Other" did not ostensibly appear to have a different racial background than the 80.4% who selected "Black," but I wanted to be sensitive to the participants' views. All the foster care adolescents in the sample had been in care for a minimum of 3 months and attended public school.

A nonexperimental correlational design was conducted to gain insight into criterion variables that effect academic success. Resilience was the main predictor

variable. Four research questions and hypotheses were developed to investigate these variables and their impact on foster care adolescents' academic success. In addition, age and gender were predictor variables used to assess whether they moderated the relationship between variables.

The first research question and hypothesis explored whether resiliency was related to academic performance for foster care adolescents in Bermuda public schools. Research suggested that school failure in this population needs to be explored because education serves as a stabilizer and provides guidance for children who have been removed from families (Ferguson & Wolkow, 2012; Jackson & Cameron, 2012). In this study, academic performance was determined by GPA and a Pearson correlation coefficient was conducted. I hypothesized that resilience levels in foster care adolescents would impact academic performance. However, there was no significance found between resiliency and academic performance ($r = 0.058, p = .68$).

The second research question and hypothesis proposed that age and gender moderate the relationship between resiliency and academic performance. Since there was no significance between resiliency and academic performance, but a possible relationship between subgroups such as age and resiliency, gender and resiliency as well as age and gender and resilience, these interactions were tested using a multiple regression. The premise behind conducting these interactions was based on past research that showed performance variations between boys and girls (McFarland et al., 2011; Stein, 2008; Wei et al., 2015). A multiple regression was conducted with GPA being the criterion variable. The results revealed no significant interactions between gender and resilience ($\beta = .010$,

$p = .995$) and age and resiliency ($\beta = 2.33, p = .115$). Thus the data did not support that gender and age moderated the relationship between resiliency and academic performance.

The third research question and hypothesis examined the relationship between resiliency and academic achievement based on math and reading scores. I surmised there would be a relationship between resilience and academic achievement. Research has shown that learning to read early and fluently impacts educational success and psychological well-being (Jackson, 1998). More recent studies support this notion of reading being important by showing that prereading deficits in foster care children affects their readiness (Pears, Heywood, Kim, & Fisher, 2011). Tyre (2012) has examined curriculum based measures that can identify skill deficits in basic reading skills for middle school students in the foster care system. There were subhypotheses created for each criterion variables and a Pearson correlation coefficient was conducted with resilience being the predictor variable. The results showed no significance between math and resiliency ($r = .184, p = .19$). There was statistical significance between reading and resiliency ($r = .374, p = .007$).

The fourth research question and hypothesis suggested that age and gender moderate the relationship between resiliency and academic achievement based on math and reading scores. There were sub-hypotheses created for each criterion variable. Since there was no significant relationship between math and resiliency, I decided to assess whether there was an interaction between age and resiliency or gender and resiliency. This was based on research that has shown gender differences between academic achievement is common with boys doing well in math and girls excelling in reading. The

results indicated that gender and resiliency did not have a significant interaction on academic achievement based on math scores ($\beta = .520, p = .732$) but there was a significance between age and resiliency on academic achievement and reading scores ($\beta = 3.10, p = .046$).

In addition, a multiple regression was also conducted on reading scores based on the previous research that confirmed gender differences exist between types of academic achievement. The results showed no significant interactions between gender and resiliency ($\beta = -1.73, p = .224$) nor age and resiliency for academic achievement based on reading scores ($\beta = -.373, p = .792$).

Interpretation of the Findings

The review in Chapter 2 clearly shows there is a lack of literature on resiliency and academic success. Despite there being numerous studies on foster care adolescent within the jurisdiction of the United States and United Kingdom, there are still cultural groups that have not been studied within the foster care system. Hence, this study examined resiliency and academic success among Bermudian foster care adolescents. The research supports that resilience theory has an approach that encompasses risk factors that need to be considered when studying foster care adolescents (Coleman & Hagell, 2007). These factors are personality characteristics, emotional integration within the family, and outside support systems. In addition, resilience needs to be looked at from a growth perspective instead of a pathological perspective when studying foster children (Garmezy, 1991).

The main outside support system that was explored within in this study was the impact that school achievement has on foster care adolescents' resilience and academic success. Rosenfeld and Richman (2003) found that poor performance at school affected foster care children whether they lived in a foster care placement, kinship care, or a group home. This performance can also be impacted by enrollment problems, educational instability, and lower test scores (Pecora, 2012). In addition, Scherr (2007) found that foster care children are reported to special education five times higher than their peers.

This study supports the previous research around the importance of studying education and resilience on foster care adolescents. The first hypothesis examined whether foster care adolescents' GPAs were impacted by the level of their resilience based on their scores on the Resilience Scale (RS). The findings resulted in there being no statistical significance between GPA and resilience. This suggested that despite the participants' scores (whether they were low, medium, or high) their report of how resilient they felt bared no statistically significant correlation with their academic performance measured by GPA. In addition, this finding may be implying that there are more intricate processes at work beyond foster care children being resilient and succeeding academically. Some of these intricate processes that could be at work that were not explored with foster care adolescent's within in this study could be lack of support from caregivers, experience of retention, and conflicts between child welfare and the educational system (Hollingshead & Fernandes, 2012).

There is research that supports that gender may impact achievement scores. Voyer and Voyer (2014) found that females have an advantage over their male counterparts

concerning school marks. However, males have the advantage over females around mathematic achievement (Lindberg, Hyde, Petersen, & Linn, 2010). The second hypothesis explored the role of resilience concerning academic performance by including the variables gender and age. Interactions were created by multiplying resilience and age as well as multiplying gender and resilience. Age, gender, and resilience were multiplied together to create the last interaction. Despite research support of gender on academic achievement, this study found no significant interactions between gender and resiliency and age and resiliency. This suggests that gender of participants in the study showed no impact on resilience and their GPAs. The results may have been impacted by the small sample size which possibly lead to low statistical power. However, it should be noted that further analyses demonstrated that there was a difference between the female foster care adolescent academic performances compared to their male counterparts. The female GPAs averaged 2.25 in comparison to the males GPAs that averaged 1.55. This outcome supports the research in the literature that states females seem to fair better with grades compared to males.

Past research has focused on math and reading as subjects that measure academic achievement in students (Mallett, 2012; Taylor & Lee, 2012). This study also investigated resilience and its relationship to academic achievement for foster care adolescents based on math and reading scores on the WIAT-III. There were two separate correlations conducted on the criterion variables math and reading. The third hypothesis and its first subhypothesis predicted the relationship between resiliency and academic achievement math scores measured by the WIAT-III. The results showed there was no

statistical significant relationship between resilience and math. Basically, the resilience scores whether low, medium or high did not influence foster care adolescent who were excelling or failing at math at their appropriate age/grade level. As previously mentioned in a prior hypothesis, this outcome may have been effected by sample size or a Type II error.

The second subhypothesis of Hypothesis 3 examined the relationship between resiliency and academic achievement reading scores measured by the WIAT-III. The findings between resiliency and reading scores indicated a positively significant relationship ($r = .374, p = .007$). This could suggest that early reading skills acquired in life along with being resilient in care are necessary for readiness when obtaining academic success in school. Pears, Heywood, Kim, and Fisher (2011) studied pre-reading deficits in children in foster care and found that their levels of readiness were below children of similar age. Further investigation showed that females reading scores averaged 98.65 which is in the average range based on the WIAT compared to the males which averaged 89.72 and this is in the low average range.

In addition, Chapter 2 discussed factors such as consistency of care, continuity in a child's educational experience, and social support within the home and community as issues that can impact resilience (Jones & Morris, 2012; Williams, 2011). I proposed based on these factors that there may be a chance that despite Bermudian foster care adolescents growing up in different types of placements they are experiencing continuity and support that is building resiliency around their academic achievement which is being demonstrated through their reading capabilities.

Hypothesis 4 and its subhypotheses explored the role of resilience concerning academic achievement math and reading scores based on the WIAT-III by including the variables gender and age. However, based on previous analyses that showed there was no statistical significant relationship between resiliency and math interactions were analyzed. Similarly to Hypothesis 2, interactions were created by multiplying resilience and age as well as multiplying gender and resilience. There was also an interaction developed by multiplying all the predictor variables. The results showed there was no significant interaction between gender and resiliency on academic achievement based on math scores measured by the WIAT-III ($\beta = 3.10, p = .046$). There was a significant interaction between age and resiliency on reading scores. I posit that the results may pertain to the notion that as foster children get older and feel secure, their reasoning skills improve. Their maturity allows for them to retain more information, as well as build resiliency in their situations, because factors such as support and continuity are being given by their caregivers (Schofield & Beek, 2009).

The second subhypothesis for Hypothesis 4 had the same procedures conducted with reading scores that were determined by the WIAT-III. The findings revealed there was no significant interaction between gender and resiliency nor age and resiliency. Although previous analyses found a statistical interaction between resilience and reading, these results may be suggesting that the sample size needs to be larger in order to produce a significant interaction and avoid a Type II error. In addition, the positive statistical significant finding between resilience and reading may be reflecting a Type I error (false positive).

Limitations of the Study

The main focus of this study was to explore academic success for Bermudian foster care adolescents between the ages of 12 to 17 years old who had resided in foster care for a minimum of 3 months. Each foster care adolescent was required to complete the Resilience Scale and to be assessed by the WIAT-III to determine math and reading scores. Their GPAs were confirmed through school reports that social workers had obtained from their respective schools. Foster care adolescents also provided demographic information about their placements, age, and years in care.

In Chapter 1, it was determined that the target sample would be foster care adolescents in the public education school system in Bermuda. Based on the criteria used in the present study, the results cannot be generalized to younger children in care as the age group was 12 to 17 years old. Although the focus was on foster care adolescents in the Bermuda public school system, generalizing the results to foster care adolescent within private schools or homeschools should be done with caution. No study participants were included representing these alternative educational settings.

Compounding this generalizability issue is the concern of resiliency studies mainly using participants' self-reports (Hass & Graydon, 2009; Jones, 2012; Samuel & Pryce, 2003). Self-reports are subjected to participants having response patterns that create social desirability bias. Miller (2011) describes social desirability as a pattern where respondents do not answer questions truthfully because they want to be seen in a favorable light. This effect could be present within this study as participants were required to fill out the Resilience Scale, which is a self-report that measures resilience

levels. Since the Resilience Scale was the only tool used to assess the concept of resilience there is also the possibility of mono-operational bias. This can potentially cause salient aspects of the concept of resiliency to not be tapped because a single instrument was used. In addition, it is possible that the Resilience Scale may have not provided the best measure of resilience and a more sophisticated or recent measure might yield different results.

There have been many studies that have examined resilience and foster care mainly through correlational methods (Jones, 2013; Salazar, Keller, & Courtney, 2011; Williams & Nelson-Gardell, 2012). This study employed a similar approach to examining the data. Data analyses for this study involved the use Pearson product moment correlations and multiple regression. The study revealed some relationships between the variables but caution needs to be taken as these relationships cannot establish a cause and effect relationship between variables. The results also do not allow this researcher to go beyond the data given.

Ethnicity was another limitation encountered within in this study. The foster care adolescents were mainly Black Bermudian males and females. Interestingly, this tends to be the highest group of referrals at the Bermuda Department of Child and Family Services compared to other ethnic groups such as white or Portuguese. This is not surprising as the population of Bermuda is 69,839 estimated as of July 2014 and 53.8% classified themselves as black, 31% as white, 7.5% mixed, and 7.1% as other. This limitation will continue to be an issue if this study is repeated as there is only one Department of Child of Family Services that services foster care adolescents.

Multicollinearity is a common phenomenon that occurs in studies that use multiple regression. This phenomenon occurs when two or more predictor variables are highly correlated and can be predicted from the other with a substantial degree of accuracy (Marsh, Hau, Wen, Nagengast & Morin, 2013). This study was able to meet criteria for VIF (less than 10) and tolerance (less than 0.1).

Another limitation was a small sample size. Kelley and Maxwell (2013) discuss extensively the importance of obtaining accurate regression coefficients compared to simple significance. The small sample size in this study may have impacted on the lack of significance between resilience and academic success as well as achievement. Although sample size met the criteria for power and effect size in this study, based on past research (Evan, 2004; Metzger, 2008; Miller, 2010) the small sample may have hidden a relationship that actually may exist between resilience and predictor variables. The statistically significant findings regarding resilience and reading may reflect a Type I error (false positive) despite literature supporting that early reading and fluency promote educational success in children growing up in care.

Recommendations

In the future, the study could be replicated using a larger sample size. Large sample sizes assist with increasing predictive power, which helps with finding significance that is more accurate. Biau, Kernei, and Porcher (2008) suggest that planning a sample size should be considered because it allows researchers control for the risk of reporting a false negative (Type II error) and gives precision to the researcher's study. Although this is the ideal, I believe obtaining a larger sample size within the Department of Child and Family

Services in Bermuda would still pose challenges for another researcher. This view is based on the issue of children emancipating out of the system at 18 years old as well as the new strategic plan which proposes that foster care children find permanency quicker than lingering in the foster care system for years.

Another recommendation could be the possibility of lowering the age of participants and studying resilience and academic success over a range of developmental stages. In addition, the lower of the age will also have to consider using a resilience tool that goes younger as the Resilience Scale assesses from the age of 12 years old. A future researcher may want to consider using the Resiliency Scales for Children & Adolescents: A Profile of Personal Strengths by Sandra Prince-Embury, which can be administered from the age of 9 years old and examines strengths and vulnerability.

In addition, since placement stability, commitment of caregiver, and supportive environment are variables that Stein (2008) found possibly foster effective resiliency. These factors could be considered in a future study to see if there is any relationship or interaction with resiliency and academic achievement. For instance, in the current study type of placement and number of years in foster care were collected but were not analyzed with the current criterion and predictor variables. I would be interested to see if these variables impacted academic success and resilience.

In Chapter 2, there was discussion around SES and the impacts it has on resilience and academic success. Research supports that lower SES impacts disadvantaged children such as children taken into public care and placed in foster care (Veland, Midthassel, & Idsoe, 2009). This disadvantage also impacts this group's psychological well-being as

they become more susceptible to internalizing symptoms, such as depression and anxiety which could impend on them getting an adequate education because of the lack of financial resources and accessibility to appropriate health care (Mendelson, Kubzansky, Datta, & Buka, 2008). This variable could be important to include in a replicated study but might be hard to ascertain with foster care adolescents' parents as they may be unwilling to share this information or difficulty to locate.

The understanding of resilience is important but it should be noted that the method of studying needs to be expanded. The main mode of studying resilience has been a quantitative approach. Wells and Freer (1994) argued that quantitative approaches do not capture the full essence of children's experiences in foster care. This research could also benefit from having a qualitative aspect added to the proposed study. This method could be introduced by having the researcher select a few participants who were considered resilient and have each of them be interviewed. The interview could consist of questions that explore what has been influential in their success and what has hindered their ability to obtain an education. By doing this type of interview, Whiting and Lee (2003) believed this this could add insight, enhance societal awareness, promote better foster care policies, and be therapeutic for children.

Implications for Social Change

The concept of resilience has been academically studied for approximately 30 years when pioneers started examining it from a psychopathological perspective. Across the years the approach has moved from the premise of resistance to a growth perspective. There was literature found supporting resilience work on foster care adolescents in the

United States and the United Kingdom. However, there were no studies found that had studied resilience with Bermudian foster care adolescents. Through this study, I have introduced a cultural group that has never been studied and has opened the door for future research on this vulnerable population at risk for academic failure.

The adolescents in foster care who took part in this study are under a court mandate, which is governed by the Bermuda Children Act 1998. This Act protects children from significant harm that could be afflicted by being either physically, sexually, or emotionally abused. The premise of this study was to assess adolescents in foster care, their resilience and academic success. The results of this study and review of literature showed that academic vulnerability is a concern for foster care adolescents. Despite that Bermudian foster care children are protected by the Children Act 1998 as well as by the Education Act 1996 section 41 which states that they are entitled to a “suitable education” and needs to take into consideration one’s age, ability, special needs (if any), aptitude and health. There is still a vagueness in the wording of the law concerning what constitutes special needs for students who are in care.

The potential of this study creating positive social change would be made manifest in getting policy makers in Bermuda to reexamine the current Children Act 1998 as well as the Education Act 1996. The Children Act 1998 does a great job of protecting children’s rights around mental, physical and emotional harm but needs to include the importance of children’s educational rights while in the care of a child protection agencies. Although, the Education Act 1996 acknowledges that all students deserve a suitable education there needs to be reexamination around students such as foster care

children who have a higher prevalence of having psychological issues as well as diagnoses for mental health issues. It is important that policy makers understand that these deficits can impact on foster children obtaining their right to a suitable education. In addition, gender specific and learning difference need to be considered when examining academic success for foster children.

Then school failure for foster care children is heightened due to disruptions that stem either from placement changes or school changes (Thorpe & Swart, 1992). Rosenfeld and Richman (2003) argued that it is paramount that practitioners in the foster care system and in the educational system cooperate and attend to the educational needs for foster care children. For this reason, it is imperative that professionals such as social workers, educators, and psychologists who work with this at risk population be educated about how academic vulnerability for foster children can also be impacting their emotional well-being in addition to the psychological disorders that are so common within this group. These professionals need to advocate that foster children are assessed for their educational needs so that appropriate interventions can be put in place for academic success.

Conclusion

The issue of foster care children and their well-being while growing up in a placement that is not their biological home has been a concern that researchers have studied over the past 15 years. Academic vulnerability is an issue for foster children and requires more empirical studies to get a better understanding of the variables that impact their academic success (Stone, 2005; Trout et al., 2007). Most literature focuses on their

behavior, mental health or family functioning rather than their academic success. This needs to change as we notice that academic standards for students are becoming competitive because we are in a global market no longer isolated in our own private arenas.

The plight of the foster child will be an ongoing issue as long as there are risk factors, such as poverty and abuse, in a society where these children unfortunately will experience this sometime throughout their life. The opportunity for getting an education so that they can be empowered to move out of a system that will have no problem shuffling than from a child protection system to the juvenile system, and possibly homelessness, is all too real.

The sad part about this epidemic is that children in foster care report that once they become emancipated out of the system the reality of their educational vulnerability and residue from their decision to leave school impacts their lives as adults. For instance, Driscoll (2011) interviewed eight care leavers around factors impacting their decision in getting a future education. The care leavers indicated that their relationships with their careers as well as criminal activity were factors that impacted their decision to further their education.

It was my hope that this study would shed light on a group of children who are sometimes forgotten once they turn 18 years old. It is unfortunate that too often many are remembered when something bad happens and it becomes common knowledge in a forum such as the newspaper, social media, television or a court room. Workers may make a statement such as “I always wondered what happen to them once they left care or

dropped out of school.” It is time to stop wondering and to encourage and empower foster children that their education is just as important as their mental, physical, and emotional well-being. Education is the key and reading is the door to making a difference in their lives and increasing their resiliency in a world that can be chaotic.

References

- Antonovsky, A. (1979). *Health, stress and coping*. San Francisco, CA: Jossey-Bass.
- Aseltine, R. H., Dupre, M., & Lamlein, P. (2000). Mentoring as a drug prevention strategy: An evaluation of across ages. *Adolescent & Family Health, 1*(1), 11–20.
- Barnard, C. P. (1994). Resiliency: A shift in our perception. *The American Journal of Family Therapy, 22*(2), 135–144.
- Bercher, D. A. (2012). Self-monitoring tools and student academic success: When perception matches reality. *Journal of College Science Teaching, 41*(5), 26–32.
- Berridge, D. (2007). Theory and explanation in child welfare: Education and looked-after children. *Child and Family Social Work, 12*(1), 1–10.
- Berridge, D. (2012). Educating young people in care: What have we learned? *Children and Youth Review, 34*(6), 1171–1175.
- Biau, D.J., Kerneis, S., & Porcher, R. (2008). Statistics in brief: The importance of sample size in the planning and interpretation of medical research. *Clinical Orthopedics and Related Research, 466*(9), 2282–2288.
- Black, C., & Ford-Gilboe, M. (2004). Adolescent mothers: Resilience, family health work and health-promoting practices. *Journal of Advanced Nursing, 48*(4), 351–360. doi: 10.1111/j.1365-2648.2004.03204.x
- Blome, W. W. (1997). What happens to foster kids: Educational experiences of a random sample of foster care youth and a matched group of non-foster care youth? *Child and Adolescent Social Work Journal, 14*(1), 41–53.

- Borensztajn, G., Zuidema, W., & Bod, R. (2009). Children's grammars grow more abstract with age – Evidence from an automatic procedure for identifying the productive units of language. *Topics in Cognitive Science, 1*(1), 175–188.
- Borman, G. D., & Rachuba, L. T. (2001). Academic success among poor and minority students. Center for research of students placed at risk, research report No. (n.d.).
- Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology, 53*(1), 371–399.
- Breaux, K. C. (2009). *Technical manual*. Wechsler Individual Achievement Test.
- Brown, R. W. (2011). Perceived influence of African American male mentorship on academic success of African American males in predominantly white institution of higher education: An institutional case study. *National Forum of Multicultural Issues Journal, 9*(1), 1–13.
- Bruce, E., Naccarato, T., Hopson, L & Morrelli, K. (2010). Providing a sound educational framework for foster youth: A proposed research agenda. *Journal of Public Child Welfare, 4*(2), 219–240.
- Buckner, J. C., Mezzacappa, E., & Beardslee, W. R. (2003). Characteristics of the resilient youths living in poverty: The role of self-regulatory processes. *Development and Psychopathology, 15*, 139–162.
- Burns, T. G. (2010). Wechsler Individual Achievement Test-III: What is the gold standard for measuring academic achievement. *Applied Neuropsychology, 17*(3), 234–236. doi: 10.1080/09084282.2010.499803

- Casey Family Programs. (2006). *Breakthrough series collaborative on improving educational continuity and school stability for children in out-home-care change package*. Seattle, WA: Casey Family.
- Caldwell, G. P., & Ginther, D. W. (1996). Differences in learning styles of low socioeconomic status for low and high achievers. *Education, 117*, 141–147.
- Carnahan, S. (1994). Preventing school failure and dropout. In R. J. Simeonsson (Ed.), *Risk, resilience, & prevention: Promoting the well-being of all children* (pp. 103–123). Baltimore, MD: Paul H. Brookes.
- Christiansen, E. J., & Evans, W. P. (2005). Adolescent victimization: Testing models of resiliency by gender. *The Journal of Early Adolescence, 25*(3), 298–316. doi: 10.1177/0272431605276931
- Cicchetti, D., & Garmezy, N. (1993). Prospects and promises in the study of resilience. *Development and Psychopathology, 5*(04), 497–502. doi: 10.1017/S0954579400006118
- Cicchetti, D., & Rogosch, F. A. (2009). Adaptive coping under conditions of extreme stress: Multilevel influences on the determinants of resilience in maltreated children. *New Directions for Child and Adolescent Development, 2009*(124), 47–59. doi: 10.1002/cd.242
- Clayden, J., & Stein, M. (2005). *Mentoring young people leaving care*. United Kingdom: Joseph Rowntree Foundation.
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159. doi: 10.1037//0033-2909.112.1.155

- Coleman, J., & Hagell, A. (2007). *Adolescence, risk and resilience: Against the odds*. West Sussex, England: J. Wiley & Sons.
- Conchas, G. (2006). *The color of success: Race and high achieving urban youth*. New York: Teacher's College Press.
- Condly, S. J. (2006). Resilience in Children: A review of literature with implications for education. *Urban Education, 41*(3), 211–236. doi: 10.1177/0042085906287902
- Connor, K. M., & Davidson, J. R. (2003). Development of a new Resilience Scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*(2), 76–82. doi: 10.1002/da.10113
- Courtney, M. E., & Dworsky, A. (2006). Early outcomes for young adults transitioning from out-of-home care in the USA. *Child Family Social Work, 11*(3), 209–219. doi: 10.1111/j.1365-2206.2006.00433.x
- Courtney, M. E., Piliavin, I., Grogan-Kaylor, A., & Nesmith, A. (2001). Foster youth transitions to adulthood: A longitudinal view of youth leaving care. *Child Welfare- New York, 80*(6), 685–718.
- Daining, C., & DePanfilis, D. (2007). Resilience of youth in transition from out-of -home care to adulthood. *Children and Youth Services Review, 29*(9), 1158–1178. doi: 10.1016/j.childyouth.2007.04.006
- Dent, R. J., & Cameron, R. S. (2003). Developing resilience in children who are in public care: The educational psychology perspective. *Educational Psychology in Practice, 19*(1), 3–19. doi: 10.1080/0266736032000061170

- Dill, K., Flynn, R.J., Hollingshead, M., & Fernandes, A. (2012). Improving the educational achievement of young people in out-of-care. *Children and Youth Services Review, 34*(6), 1081–1083.
- DosReis, S., Zito, J. M., Safer, D. J., & Soeken, K. L. (2001). Mental health services for youths in foster care and disabled youths. *American Journal of Public Health, 91*(7), 1094–1099. doi: 10.2105/AJPH.91.7.1094
- Driscoll, J. (2011). Making up lost ground: Challenges in supporting the educational attainment of looked after children beyond key stage 4. *Adoption and Fostering, 35*(2), 18–31.
- Dubois, D. L., Holloway, B. E., Valentine, J. C., & Cooper, H. (2002). Effectiveness of mentoring programs for youth: A meta-analytic review. *American Journal of Community Psychology, 30*(2), 157–197.
- Dubois, D.L., Portillo, N., Rhodes, J.E., Silverthorn, N., & Valentine, J.C. (2011). How effective are mentoring programs for youth? A systematic assessment of the evidence. *Psychological Science in the Public Interest, 12*(2), 57–91.
- Dunn, D. M., Culhane, S. E., & Taussig, H. N. (2010). Children's appraisals of their experiences in out-of-home care. *Children and Youth Services Review, 32*(10), 1324-1350 doi: 10.1016/j.childyouth.2010.05.001
- Eckenrode, J., Laird, M., & Doris, J. (1993). School performance and disciplinary problems among abused and neglected children. *Developmental Psychology, 29*(1), 53.

- Elliott, C. D. (2007). *Differential Ability Scales Second Edition*. San Antonio, TX: Pearson.
- Else-Quest, N.M., Hyde, J.S., & Linn, M. C. (2010). Cross-national patterns of gender differences in mathematics. A meta-analysis. *Psychological Bulletin*, *136*, 103–127.
- Evan, L.D. (2004). Academic achievement of students in foster care impeded or improved? *Psychology in the Schools*, *41*(5), 527–535.
- Farruggia, S. P., Greenberger, E., Chen, C., & Heckhausen, J. (2006). Perceived social environment and adolescents' well-being and adjustment: Comparing a foster care sample with a matched sample. *Journal of Youth and Adolescence*, *35*(3), 349–358.
- Ferguson, H. B., & Wolkow, K. (2012). Educating children and youth in care: A review of barriers to school progress and strategies for change. *Children and Youth Services Review*, *34*(6), 1143–1149.
- Finn, J. D., & Rock, D. A. (1997). Academic success among students at risk for school failure. *Journal of Applied Psychology*, *82*(2), 221–234. doi: 10.1037//0021-9010.82.2.221
- Fonagy, P., Steele, M., Steele, H., Higgitt, A., & Target, M. (1994). The Emanuel Miller memorial lecture 1992 the theory and practice of resilience. *Journal of Child Psychology and Psychiatry*, *35*(2), 231–257.

- Garnezy, N. (1971). Vulnerability research and the issue of primary prevention. *American Journal of Orthopsychiatry*, 41(1), 101–116. doi: 10.1111/j.1939-0025.1971.tb01111.x
- Garnezy, N. (1991). Resilience in children's adaptation to negative life events and stressed environments. *Pediatric Annals*, 20(9), 459–466.
- Gilligan, R. (1998). The importance of schools and teachers in child welfare. *Child and Family Social Work*, 3, 13–26.
- Gilligan, R. (1999). Enhancing the resilience of children and young people in public care by mentoring their talents and interest. *Child and Family Social Work*, 4, 187–196.
- Giving Child and Youth Development Knowledge Away*. (2006). Retrieved July 8, 2013, from www.pacareerstandaeds.com.
- Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8(4), 597–607.
- Gordon, K. A. (1995). Self-concept and motivational patterns of resilient African American high school students. *Journal of Black Psychology*, 21(3), 239–255.
- Gore, S., Aseltine, R. H., & Colton, M. E. (1992). Social structure, life stress, and depressive symptoms in a high school-age population. *Journal of Health and Social Behavior*, 97–113.
- Greeff, A. P., & Fillis, A. J. (2009). Resiliency in poor single-parent families. *Families in Society: The Journal of Contemporary Social Services*, 90(3), 279–285.

- Hass, M., & Graydon, K. (2009). Sources of resiliency among successful foster youth. *Children and Youth Services Review, 31*(4), 457–463.
- Hawley, D. R., & DeHaan, L. (1996). Toward a definition of family resilience: Integrating life-span and family perspectives. *Family Process, 35*(3), 283–298. doi: 10.1111/j.1545-5300.1996.00283.x
- Hayward, K., & Cameron, G. (2002). Focusing intensive family preservation services: Patterns and consequences. In *Child and Youth Care Forum* (5th ed., Vol. 31, pp. 341–356). Norwell, MA: Kulwer Academic Publishers.
- Hines, A. M., Merdinger, J., & Wyatt, P. (2005). Former foster youth attending college: Resilience and the transition to young adulthood. *American Journal of Orthopsychiatry, 75*(3), 381–394. doi: 10.1037/0002-9432.75.3.381
- Hjemdal, O., Aune, T., Reinfjell, T., Stiles, T. C., & Friborg, O. (2007). Resilience as a predictor of depressive symptoms: A correlational study with young adolescents. *Clinical Child Psychology and Psychiatry, 12*(1), 91–104. doi: 10.1177/1359104507071062
- Hoekelman, R. A. (1991). A pediatrician's view. *Pediatric Annals, 20*(9), 455–456.
- Hunter, A. J., & Chandler, G. E. (1999). Adolescent resilience. *Journal of Nursing Scholarship, 31*(3), 243–247. doi: 10.1111/j.1547-5069.1999.tb00488.x
- Jackson, S., & Martin, P. (1998). Surviving the care system: Education and resilience. *Journal of Adolescence, 21*, 569–583.
- Jackson, S., & Cameron, C. (2012). Leaving care: Looking ahead and aiming higher. *Children and Youth Services Review, 34*(6), 1107–1114.

- Jaffee, S. R., & Gallop, R. (2007). Social, emotional, and academic competence among children who have had contact with child protective services: Prevalence and stability estimates. *Journal of the American Academy of Child & Adolescent Psychiatry, 46*(6), 757–765.
- Johnson-Garner, M. Y., & Meyers, S. A. (2003). *What factors contribute to the resilience of African-American children within kinship care?* (5th ed., Vol. 32). Norwell, MA: Kluwer Academic.
- Jones, L. (2012). Measuring resiliency and its predictors in recently discharged foster youth. *Child Adolescent Social Work Journal, 29*, 515–533. doi: 10.1007/s10560-01200275
- Jones, L. (2013). The family and social networks of recently discharged foster youth. *Journal of Family Social Work, 16*(3), 225–242.
- Jones, A.M., & Morris, T. L. (2012). Psychological adjustment of children in foster care: Review and implications for best practice. *Journal of Public Child Welfare, 6*(2), 129–148.
- Junge, C., & Cutler, A. (2014). Early word recognition and later language skills. *Brain Sciences, 4*(4), 532–559.
- Kelley, K., & Maxwell, S.E. (2003). Sample size for multiple regression: Obtaining regression coefficients that are accurate, not simply significant. *Psychological Methods, 8*(3), 305–321.

- Kreiger, N., Williams, D. R., & Moss, N. E. (1997). Measuring social class in US public health research: Concepts, methodologies, and guidelines. *Annual Review of Public Health, 18*(1), 341–378.
- Landau, J. (2007). Enhancing resilience: Families and communities as agents of change. *Family Process, 46*(3), 351–365.
- Lee, S. M., Daniels, M. H., Puig, A., Newgent, R. A., & Nam, S. K. (2008). A data based model to predict postsecondary educational attainment of low socioeconomic status students. *Professional School Counseling, 11*(5), 306–316.
- Leve, L. D., Harold, G.T., Chamberlain, P., Landsverk, J.A., Fisher, P.A., & Vostanis, P. (2012). Practitioner review: Children in foster care – vulnerabilities and evidence based interventions that promote resilience processes. *Journal of Child Psychology and Psychiatry, 53*, 1197–1211.
- Leve, L. D., Fisher, P. A., & Chamberlain, P. (2009). Multidimensional treatment foster care as a preventive intervention to promote resiliency among youth in child welfare system. *Journal of Personality, 77*(6), 1869–1902.
- Libertos, P., Link, B. G., & Kelsey, J. L. (1988). Measurement of social class in epidemiology. *Epidemiologic Reviews, 10*(1), 87–121.
- Liem, R., & Liem, J. (1978). Social class and mental illness reconsidered: The role of economic stress and social support. *Journal of Health and Social Behavior, 19*, 139–156.

- Lindberg, S. M., Hyde, J. S., Petersen, J. L., & Linn, M. C. (2010). New Trends in gender and mathematics performance: A meta-analysis. *Psychological Bulletin, 136*, 1123–1135.
- Luthar, S. S., & Brown, P. J. (2007). Maximizing resilience through diverse levels of inquiry: Prevailing paradigms, possibilities, and priorities for the future. *Developmental Psychopathology, 19*(3), 931–955.
- Luthar, S. S., & Zigler, E. (1991). Vulnerability and competence: A review of research on resilience in childhood. *American Journal of Orthopsychiatry, 61*(1), 6–22. doi: 10.1037/h0079218
- Luthar, S. S. (1993). Methodological and conceptual issues in research on childhood resilience. *Journal of Child Psychology and Psychiatry, 34*(4), 441–453. doi: 10.1111/j.1469-7610.1993.tb01030.x
- Lynn, R., & Mikk, J. (2009). Sex differences in reading achievement. *Trames, 13*, 3–13.
- Madsen, M. D. (2010). Trauma Resilience Scale: Validation of protective factors associated with adaptation following violence. *Research on Social Work Practice, 20*(2), 223–233.
- Mallett, C.A. (2012). The school success program: Improving maltreated children's academic and school-related outcomes. *Children & School, 34*(1), 13–26
- Mallon, J. (2007). Returning to education after care: Protective factors in the development of resilience. *Adoption & Fostering, 31*(1), 106–117.

- Marcellus, L. (2010). Supporting resilience in foster families: A model for program design that supports recruitment, retention, and satisfaction of foster families who care for infants with prenatal substance exposure. *Child Welfare, 89*(1), 7–29.
- Marsh, H.W., Hau, K.T., Wen, Z., Nagengast, B., & Morin, A.J.K. (2013). Moderation. In T.D. Little (Ed), *The Oxford Handbook of Quantitative Methods* (pp 361–386). New York, NY: Oxford University Press.
- Martin, A. J., & Marsh, H. W. (2006). Academic resilience and its psychological and educational correlates: A construct validity approach. *Psychology in the Schools, 43*(3), 267–281.
- Martin, A. J., & Marsh, H. W. (2008). Workplace academic buoyancy psychometric assessment and construct validity amongst school personnel and students. *Journal of Psychoeducational Assessment, 26*(2), 168–184.
- Martin, P., & Jackson, S. (2002). Educational success for children in public care: Advice from high achievers. *Child and Family Social Work, 7*(2), 121–130.
- Massinga, R., & Pecora, P. J. (2004). Providing better opportunities for older children in the child welfare system. *The Future of Children, 14*(1), 151–173.
- Masten, A. S., & O'Connor, M. J. (1989). Vulnerability, stress, and resilience in the early development of a high risk child. *Journal of the American Academy of Child & Adolescent Psychiatry, 28*(2), 274–278. doi: 10.1097/00004583-198903000-00021
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*(3), 227–238. doi: 10.1037//0003-066X.56.3.227

- Masten, A. S. (2006). Promoting resilience in development: A general framework for systems of care. In *Promoting Resilience in Child Welfare*. Ottawa: University of Ottawa Press.
- Masten, A.S. (2009). Ordinary magic: Lessons from research on resilience in human development. *Education Canada*, 49(3), 28–32.
- Masten, A.S. (2011). Resilience in children threatened by extreme adversity: Framework for research, practice, and translational. *Development and Psychopathology*, 23(2), 493–506.
- Masten, A. S., Garmezy, N., Tellegen, A., Pellegrini, D. S., Larkin, K., & Larsen, A. (1988). Competence and stress in school children: The moderating effects of individual and family qualities. *Journal of Child Psychology and Psychiatry*, 29(6), 745–764. doi: 10.1111/j.1469-7610.1988.tb00751.x
- Mayo, J., Chlebowski, C., Fein, D., & Eigsti, I.M. (2013). Age of first words predicts cognitive ability and adaptive skills in children. *Journal of Autism & Developmental Disorder*, 43(2), 253–264.
- McFarland, M., Benson, A.M., & McFarland, B. (2011). Comparing achievement scores of students in gender specific classrooms with students in traditional classrooms. *International Journal of Psychology*, 8, 99–114.
- McLeod, J. D., & Kessler, R. C. (1990). Socioeconomic status differences in vulnerability to undesirable life events. *Journal of Health and Social Behavior*, 31(2), 162–172.

- McLeod, J. D., & Owens, T. J. (2004). Psychological well-being in the early life course: Variations by socioeconomic status, gender, and race/ethnicity. *Social Psychology Quarterly*, *67*(3), 257–278.
- McMillan, J. C., Zima, B. T., Scott, L. D., Auslander, W. F., Monson, M. R., Ollie, M. T., & Spitznagel, E. L. (2005). Prevalence of psychiatric disorders among older youths in the foster care system. *Journal of the American Academy of Child & Adolescent Psychiatry*, *44*(1), 88–95.
- Mendelson, T., Kubzansky, L. D., Datta, G. D., & Buka, S. L. (2008). Relation of female gender and low socioeconomic status to internalizing symptoms among adolescents: A case of double jeopardy? *Social Science & Medicine*, *66*(6), 1284–1296. doi: 10.1016/j.socscimed.2007.11.033
- Mennen, F. E., & O'Keefe, M. (2006). Informed decisions in child welfare: The use of attachment theory. *Children and Youth Services Review*, *27*(6), 577–593.
- Metzger, J. (2008). Resiliency in children and youth in kinship care and family foster care. *Child Welfare*, *87*(6), 115–140.
- Miller, R. G. (2011). *Survival analysis* (Vol. 66). New York: John Wiley & Son.
- Morales, E. (2008). The resilient mind: The psychology of academic resilience. *The Educational Forum*, *72*(2), 152–167.
- Morales, E. (2010). Linking strengths: Identifying and exploring protective factor clusters in academically resilient low-socioeconomic urban students of color. *Roeper Review*, *32*(3), 164–175. doi: 10.1080/02783193.2010.485302

- Morales, E. E., & Trotman, F. K. (2004). *Promoting academic resilience in multicultural America: Factors affecting student success* (Vol. 29). New York: Peter Lang.
- Morales, E. E. (2008). Exceptional female students of color: Academic resilience and gender in higher education. *Innovative Higher Education, 33*(3), 197–213.
- Myers, J. K., Jacob, J. L., & Pepper, M. P. (1975). Life events, social integration and psychiatric symptomatology. *Journal of Health and Social Behavior, 16*, 421–427.
- Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology, 15*(3), 263–280.
- Newman, B. M., & Newman, P. R. (1995). *Development through life: A psychosocial approach* (6th ed.). Belmont, CA: Brooks/Cole.
- Oakes, J.M., & Rossi, P.H. (2003). The measurement of SES in health research: Current practice and steps toward a new approach. *Social Science Medicine, 56*(4), 769–784.
- Olatunji, C., Shure, L., Garrett, M. T., Conwill, W., & Rivera, E. (2008). Rite of passage programs as effective tools for fostering resilience among low income African American male adolescents. *The Journal of Humanistic Counseling, 47*(2), 131–143.
- Osgood, D. W., Foster, E. M., & Courtney, M. E. (2010). Vulnerable populations and the transition to adulthood. *The Future of Children, 20*(1), 209–229. doi: 10.1353/foc.0.0047

- Osterling, K., & Hines, A. M. (2006). Mentoring adolescent foster youth: Promoting resilience during developmental transitions. *Child & Family Social Work, 11*(3), 242–253. doi: 10.1111/j.1365-2206.2006.00427.x
- Osterling, K. L., & Hines, A. M. (2006). Mentoring adolescent foster youth: Promoting resilience during developmental transitions. *Child Family Social Work, 11*(3), 242–253. doi: 10.1111/j.1365-2206.2006.00427.x
- Palermo, G. (2009). Delinquency. *International Journal of Offender Therapy & Comparative Criminology, 53*(3), 209–229.
- Park, J. M., & Ryan, J. P. (2009). Placement and permanency outcomes for children in out of home care by prior inpatient mental health treatment. *Research on Social Work Practice, 19*(1), 42–51.
- Patterson, J. M. (1991). Family resilience to the challenge of a child's disability. *Pediatric Annals, 20*(9), 491–499.
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, 2*-21.
- Pears, K.C., Heywood, C.V., Kim, H.K & Fisher, P.A. (2011). Prereading deficits in children in foster care. *School Psychology Review, 40*(1), 140–148.
- Pecora, P. J. (2012). Maximizing educational achievement of youth in foster care and alumni: Factors associated with success. *Children & Youth Services Review, 34*, 1121–1129.
- Price, J. M., & Glad, K. (2003). Hostile attributional tendencies in maltreated children. *Journal of Abnormal Child Psychology, 31*(3), 329–343.

- Prince-Embury, S. (2006). *Resiliency Scales for Children and Adolescents: Profiles of personal strengths*. San Antonio, TX: Pearson Assessment.
- Prince-Embury, S. (2008). Translating resiliency theory for assessment and application in schools. *Canadian Journal of School Psychology, 23*(1), 4–10. doi: 10.1177/0829573508316560
- Radke-Yarrow, M., & Brown, E. (1993). Resilience and vulnerability in children of multiple-risk families. *Development and Psychopathology, 5*(04), 581. doi: 10.1017/S0954579400006179
- Reilly, T. (2003). Transition from care: Status and outcomes of youth who age out of foster care. *Child Welfare, 82*, 727–746.
- Rhodes, J. E. (1994). Older and wiser: Mentoring relationships in childhood and adolescence. *Journal of Primary Prevention, 14*(3), 187–196.
- Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology, 58*, 307–321.
- Rosenfeld, L. B., & Richardson, J. M. (2003). Social support and educational outcomes for students in out-of-home care. *Children & Schools, 25*(2), 69–86.
- Rosnow, R. L., Rosenthal, R., & Rubin, D. B. (2000). Contrasts and correlations in effect-size estimation. *Psychological Science, 11*(6), 446–453.
- Rutter, M. (1989). Pathways from childhood to adult life. *Journal of Child Psychology and Psychiatry, 30*(1), 23–51. doi: 10.1111/j.1469-7610.1989.tb00768.x

- Salazar, A. M., Keller, T. E., & Courtney, M. E. (2011). Understanding social support's role in the relationship between maltreatment and depression in youth with foster care experience. *Child Maltreatment, 16*(2), 102–113.
- Salazar-Pousada, D., Arroyo, D., Hidalgo, L., Perez-Lopez, F. R., & Chedraui, P. (2010). Depressive symptoms and resilience among pregnant adolescents: A case-control study. *Obstetrics and Gynecology International, 1*-7.
- Sawyer, R. J., & Dubowitz, H. (1994). School performance of children in kinship care. *Child Abuse & Neglect, 18*(11), 899–911.
- Schelble, J.L., Franks, B. A., & Miller, M. D. (2010.). Emotion dysregulation and academic resilience in maltreated children. In *Child and Youth Care Forum* (4th ed., Vol. 39, pp. 289–303). New York: Springer.
- Scherr, T. G. (2007). Educational outcomes of children in care. *School Psychology International, 28*(4), 419–436.
- Schofield, G., & Beek, M. (2009). Growing up in foster care: Providing a secure base through adolescence. *Child & Family Social Work, 14*(3), 255–266. doi: 10.1111/j.1365-2206.2008.00592.x
- Secombe, K. (2000). Families in poverty in the 1990s: Trends, causes, consequences, and lessons learned. *Journal of Marriage and the Family, 62*, 1094–1113.
- Seita, J., & Brown, W. K. (2010). Growing up in the care of strangers. *Reclaiming Children & Youth, 18*(4), 55–58.
- Sharpley, C. F., Palanisamy, S. K., & McFarlane, J. R. (2013). Differing models of association between childhood events, recent life stressors, psychological

- resilience and depression across three alleles of the serotonin transporter 5-HTTLPR. *German Journal of Psychiatry*, 16(3), 103–111.
- Shepard, J., Salina, C., Girtz, S., Cox, J., Davenport, N., & Hilliard, T. (2012). Student success: Stories that inform high school change. *Reclaiming Children and Youth*, 21(2), 48–53.
- Smith, J., & Prior, M. (1995). Temperament and stress resilience in school age children: A within families study. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34(2), 168–179.
- Spencer, R., Collins, M. E., Ward, R., & Smashnaya, S. (2010). Mentoring for young people leaving foster care: Promise and potential pitfalls. *Social Work*, 55(3), 225–234.
- Stein, M. (2008). Resilience and young people leaving care. *Child Care in Practice*, 14(1), 35–44. doi: 10.1080/13575270701733682
- Stone, S. (2007). Child maltreatment, out-of-home placement and academic vulnerability: A fifteen-year review of evidence and future directions. *Children and Youth Services Review*, 29(2), 139–161. doi: 10.1016/j.childyouth.2006.05.001
- Taussig, H. N., Culhane, S. E., Garrido, E., & Knudtson, M. D. (2012). RCT of a mentoring and skills group program: Placement and permanency outcomes for foster youth. *Pediatrics*, 130(1), 33–39.
- Taylor, C.S., & Lee, Y. (2012). Gender DIF in reading and mathematics test with mixed item formats. *Applied Measurement in Education*, 25(3), 246–280.

- Tennyson, S. (1992). Counseling children from foster families: Challenges in school. In L. D. Palmatier (Ed.), *Crisis counseling for a quality school community: Applying William Glasser's choice theory* (pp. 337–353). Bristol, PA: Accelerated Development.
- Thorpe, M. B., & Swart, G. T. (1992). Risk and protective factors affecting children in foster care: A pilot study of the role of siblings. *Canadian Journal of Psychiatry, 37*, 616–622.
- Trout, A., Hagaman, J., Casey, K., Reid, R., & Epstein, M. (2008). The academic status of children and youth in out-of-home care: A review of the literature. *Children and Youth Services Review, 30*(9), 979–994. doi: 0.1016/j.childyouth.2007.11.019
- Tyre, D.A. (2012). Educational supports for middle school youths involved in the foster care system. *Children & Schools, 34*, 4, 231–238.
- U.S. Department of Health and Human Services. (2010). The AFCARS report. Washington, DC: Administration for Children and Families. Administration on Children, Youth, and Families, Children's Bureau external link: www.acf.hhs.gov/programs/cb.
- Veland, J., Midthassel, U. V., & Idsoe, T. (2009). Perceived socio-economic status and social inclusion in school: Interactions of disadvantages. *Scandinavian Journal of Educational Research, 53*(6), 515–531. doi: 10.1080/00313830903301994
- Voyer, D., & Voyer, S.D. (2014). Gender differences in scholastic achievement: A meta-analysis. *Psychological Bulletin, 140*(4), 1174–1204.

- Waaktaar, T., & Torgersen, S. (2012). Genetic and environmental causes of variation in trait resilience in young people. *Behavior Genetics, 42*(3), 366–377.
- Wagnild, G., & Wagnild, H. (1990). Resilience among older women. *Image: Journal of Nursing Scholarship, 22*, 252–255.
- Wagnild, G., & Young, H. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement, 1*(2), 165–178.
- Wagnild, G. (2009). A review of the Resilience Scale. *Journal of Nursing Measurement, 29*(12), 105–113.
- Waxman, H. C., Huang, S. L., & Padron, Y. N. (1997). Motivation and learning environment differences between resilient and nonresilient Latino middle school students. *Hispanic Journal of Behavioral Sciences, 19*(2), 137–155. doi: 10.1177/07399863970192003
- Wei, T., Lui, X., & Barnard-Brak, L. (2015). Gender differences in mathematics and reading trajectories among children from kindergarten to eighth grade. *Research in Education, 93*, 77–89.
- Wells, K., & Freer, R. (1994). Reading between the lines: The case for qualitative research in intensive family preservation services. *Children and Youth Review, 16*(5), 399–415.
- Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca: Cornell University Press.
- Werner, E. E., & Smith, R. S. (2001). *Journeys from childhood to midlife: Risk, resilience and recovery*. Ithaca, NY: Cornell University Press.

- Werner, E. E. (1989). High risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry*, 59(1), 72–81.
- Werner, E. E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study. *Development and Psychopathology*, 5(04), 503. doi: 10.1017/S095457940000612X
- Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science*, 4(3), 81–85.
- Whiting, J. B., & Lee, R. E. (2003). Voices from the system: A qualitative study of foster children's stories. *Family Relations*, 52(3), 288–295. doi: 10.1111/j.1741-3729.2003.00288.x
- Williams, C.A. (2012). Mentoring and social skills training: Ensuring better outcomes for youth in foster care. *Child Welfare*, 90(1), 59–74.
- Williams, J., & Nelson-Gardell, D. (2012). Predicting resilience in sexually abused adolescents. *Child Abuse & Neglect*, 36(1), 53–63.
- Work, W. C., Cowen, E. L., Parker, G. R., & Wyman, P. A. (1990). Stress resilient children in an urban setting. *The Journal of Primary Prevention*, 11(1), 3–17. doi: 10.1007/BF01324858
- Wyman, P. A., Cowen, E. L., Work, W. C., & Parker, G. R. (1991). Developmental and family milieu correlates of resilience in urban children who have experienced major life stress. *American Journal of Community Psychology*, 19(3), 405–426.

- Yu, F., & Patterson, D. (2010). Examining adolescent academic achievement: A cross-cultural review. *The Family Journal, 18*(3), 324–327.
doi:10.1177/1066480710372071
- Zhao, X., Lynch, J.G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truth about mediation analysis. *Journal of Consumer Research, 37*(2), 197–206.
- Zima, B. T., Bussing, R., Freeman, S., Yang, X., Belin, T. R., & Forness, S. R. (2000). Behavior problems, academic skill delays and school failure among school-aged children in foster care: Their relationship to placement characteristics. *Journal of Child and Family Studies, 9*(1), 87–103.