A Multi-State Evaluation of the Factors Predicting Educational Achievement of Adult Foster Care Alumni

Markell Harrison-Jackson

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A MULTI-STATE EVALUATION OF THE FACTORS PREDICTING EDUCATIONAL ACHIEVEMENT OF ADULT FOSTER CARE ALUMNI

DISSERTATION
Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy
Lynn University

By
Markell Harrison-Jackson

2009
A MULTI-STATE EVALUATION OF THE FACTORS PREDICTING EDUCATIONAL ACHIEVEMENT OF ADULT FOSTER CARE ALUMNI

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ACKNOWLEDGMENTS

First, I want to thank God for creating this universe and protecting me from the evil spirits of this world. Next, I want to thank my mother, Vederall Marie Jackson: nearly 33 years ago, I was robbed of a protecting and loving presence by her untimely murder. Since then I have overcome many obstacles, but my teachers, professors, mentors, and friends never allowed me to use my mother’s untimely death as an excuse not to flourish academically as well as socially. I would also thank my grandmother, Leslie B. Jackson, for helping me to complete this project; if it was not for her existence this study would never have come to fruition. Therefore, this study regarding foster-care alumni educational achievement outcomes is dedicated to my mother and grandmother.

My father murdered my mother when I was barely 2 months old. The trajectory of my mother’s unthinkable murder has had a profound impact on my adulthood and has increased my determination to overcome adversity. I often wish I could turn the clock back 34 years ago to that moment and remember Vederall’s voice, and have at least one hug and kiss from her. In spite of this tragic personal legacy, I set out to overcome an array of obstacles to achieve what many said would be impossible. I spent 23 years in the child-welfare system in New York State, so I want to thank my father, Franklin D. Harrison, for helping me with financial resources to complete this endeavor; he provided emotional support throughout my 16 years of postsecondary education. And I want to also give a very heartfelt thanks to my brother Michael D. Harrison, who has always encouraged me and told me never to quit on something because it is challenging.

I was placed in numerous foster homes before reaching the age of 10. Beginning in second grade I was enrolled in special-education classes, until I finally obtained my
high school diploma in 1992. I also want to give a special thanks to those helped me to complete my postsecondary educational experience and this dissertation study over the past 16 years: Trent T. Sue Bolding, Darryl J. Morgan (best friend whom has encouraged and held be acceptable for my actions and personal development), William J. Walker, Billy Walker, Kim Hath, Nicky Johnson, Nancy Pankow (Middle School Principal whom I known for 21 years), Joe Cozzo (Former CEO of BVS and Institution where I resided) 1986-1992, Diane Cozzo (former Guidance Counselor whom I met in 1986). Diane gave me unconditional love and a red fire that has motivated my educational journey), Nancy Murphy, Silvia Slee-Robson, Carlton B. Campbell, Margo Certain-Luniewski (I met Margo in 1992 to when I enrolled in Eire Community College. She has not left life my since) Nikki Johnson, Dr. Tina Baler-Goldsmith, Jean Dunkel, Judy Ralfuski, Dr. Melvin Schwager, Phil Hardgrave, Sue Morris, Dr. Sherilyn Poole, Tracy L Ray, Allen Young, Monica Young, Tiffany Madison-Ware, William Ware, Patina Hill, Dr. Luanna Bruce, Johnny Carter, Dr. Toney Dorsett, Sgt. Candice Shaw, Dr. Bonnie Cameron, Dr. David W. Moffett, Dr. Cynthia Andreas, Professor Elaine Dearing, Professor Renee Daniel, Dr. Professor Karen Little, Dr. George Seafert, Elaine Whitlock, Dr. Harold Lane Whitfield, Rebecca Rose, and Melissa Johnson and Judi Alsdorf, who served as my graduate librarians. The late Arthur Allan and Professor William Bennett, Dr. Emad M.J Wejeeh who until their last day on this earth inspired my resilient quest to finish the race even when there are numerous obstacles apparent. These 3 scholars' lives were cut short however, I am very thankful for the time and knowledge they gave me that aided in completion of this dissertation study.
I want to give a very special appreciation to Casey Family Programs, the sponsor of this study, as well as Dr. Peter Pecora (dissertation committee external member) who granted me access to the retrospective longitudinal data set and Dr. Kirk O’Brien who are the official sponsors of this dissertation study, for the unpaid time they gracefully provided for this project. Dr. O’Brien the support you gave me while writing chapters 3 and 4 is unprecedented. Dr. Pecora if not from your unwavering support and advice I would not have been able to remain resilient to complete this study. I also like to extend my gratitude to my dissertation chair Dr. Jill Levenson and committee member Dr. Robert Seifer for their guidance and support. I have not always agreed with Dr. Levenson’s recommendations, methods and ascendancy of this complex dissertation process. Nevertheless, Dr. Levenson held me to very high standards and pushed for excellence through this journey of adversity and through my resilience I have emerged as a more skilled author.

Over the past 34 years, there have been many people who invested their time and resources to help me become the man I am today. So I wish to acknowledge all the nonfamily support received over the past 16 years of postsecondary schooling. If I have overlooked anyone, I offer my apologies, and again, my thanks for their help and encouragement.
Child maltreatment, a major public-health concern in the United States, has the most detrimental impact on adult emotional and physical development. According to the Urban Institute, in the past decade foster-care expenditures for child maltreatment totaled $14.4 billion. Each year, 30,000 alumni “age out” of foster care. These are alumni who exit the foster-care system only because they reach the age of 18, not because they are reunited with their families, are adopted, or leave to attend college. Prior longitudinal research has shown that the nearly 80% of the alumni who are emancipated at the age of 18 failed to obtain a high school diploma.

This dissertation study of children in foster care applied descriptive and correlational statistical analysis to a retrospective set of 514 case records from 23 Casey Foundation field offices. Data from 1,582 foster-care alumni records and 1,068 interviews addressed correlations between selected variables and postsecondary adult educational-achievement outcomes. The study sought to determine which of seven key predictors: (a) gender, (b) high school completion prior to emancipation, (c) ethnicity, (d) age entering foster care, (e) number of foster-care placements, (f) number of school changes, and (g) type of child maltreatment, were associated with higher educational achievement. Ancillary analyses on 19 predictive variables established possible links to educational-achievement levels. Demographics, risk factors, and foster-care experiences were established as predictors of educational achievement. Specifically, seven significant predictors of educational achievement were identified and analyzed: (a) receipt of high school diploma/GED while in foster care, (b) number of foster-care placements, (c) age at time of interview, (d) enrollment in special-education classes, (e) repeating a grade, (f)
degree of preparation for leaving care, and (g) never being on public assistance since leaving care.

The study’s final policy recommendation is for foster-care agencies to continue support at least to the point of high school graduation, rather than arbitrarily using age 18 as the criteria for emancipation. The research findings of this study may improve educational outcomes for youth in foster care, target vulnerable children in the foster-care system, and raise awareness of the many weaknesses in the existing educational framework for foster children.
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CHAPTER I
INTRODUCTION TO THE STUDY

Background of the Problem

Introduction

Any American social-welfare institution is a complex subsystem of laws, policies, and services coordinated by federal, state, and local governments, and interfacing with private agencies (Day, 1989). The United States Congress has enacted social-welfare legislation for over 100 years to provide solutions to specific social problems. Social-welfare institutions deal with multifaceted societal problems that impede the self-reliance outcomes and economic prosperity of individuals, groups, and communities. The broad purpose of a social-welfare institution is to ensure that certain fundamental necessities are available to individuals and society as a whole (Edwards, 1995).

Child maltreatment, a major public-health concern in the United States has a detrimental impact on emotional and physical development. In the 1950s and early 1960s, many children were hospitalized for suspected abuse and some died because of their injuries (Kempe, Silverman, Steele, Droegemueller, & Silver, 1962). Furthermore, in 1962, Kempe and other child-welfare experts identified battered-child syndrome as severe physical abuse or maltreatment that may lead to major injury or death. Child maltreatment often results in delayed physical growth, neurological damage, and mental and emotional/psychological problems, such as violent behavior, depression, and posttraumatic stress disorder, which may impede development to adulthood (National Research Council, 1993). Researchers found that child maltreatment is associated with a child victim’s higher prevalence of social problems, such as substance abuse, eating
disorders, obesity, depression, suicide, and sexual promiscuity in their transition to adulthood (National Research Council).

For over 100 years, social-science researchers have been concerned with intergenerational transmission of parental maltreatment and its potential to affect the child’s ability to become self-reliant (Serbin & Karp, 2004). In an effort to protect children from harm, society assumed the responsibility to end this problem and citizens lobbied the United States Congress to enact legislation giving the federal government a greater role in child-protective-custodial issues. The Child Abuse Prevention and Treatment Act of 1974 was the federal government’s landmark legislation to reduce child maltreatment nationwide.

Nonetheless, 34 years later child maltreatment remains a major problem, more prevalent in lower socioeconomic strata, but existing in all segments of society (Pelton, 1978). Furthermore, during the past 3 decades psychosocial risk factors such as poverty, homelessness, adolescent pregnancy, parental substance abuse, and the HIV/AIDS epidemic, have contributed to parental/caregiver maltreatment and the influx of children in the foster-care system (Barbell & Freundlich, 2005). These societal issues led to major philosophical and procedural changes in 1980 regarding the operation of the federal child-welfare system, which enacted new federal foster-care legislation. Furthermore, The Adoption and Safe Families Act, of 1997, implemented a new mandate for permanency planning, intended to be a mechanism to reduce the number of children residing in foster-care placements (Freundlich & Wright, 2003; Lindsey, 1994).

One facet of the social-welfare institution is the child-protection-services (CPS) system for children maltreated by their parents or caregivers (Day, 1989). The mission of
CPS is to provide a safe environment for maltreated children that will enable them to thrive socially and academically (Hawley, 2005). Children and adolescents are placed in state foster-care agencies because of one or more types of maltreatment, such as abandonment, emotional abuse, physical abuse, sexual abuse, and neglect (United States Department of Health and Human Services [USDHHS], 2007). The foster-care system is a coordinated set of services for children (infants to age 21, but often to age 18, depending on each state’s laws). Children and adolescents may be removed from the custody of biological parents and placed in a foster-care home either short term or permanently if found to be victims of maltreatment. Children reside in a variety of placements, including emergency shelters, long-term foster care, preadoption care, respite care, therapeutic care, kinship-care group homes, and residential treatment facilities (Emerson & Lovitt, 2003). During federal fiscal year (FFY) 2006, an estimated 3.6 million children were investigated or assessed for suspected maltreatment. There was an increase of 73,000 more maltreatment referrals in FFY 2006 as compared to FFY 2005 (USDHHS, 2007). In FFY 2006, approximately 905,000 children nationwide were confirmed as victims of maltreatment by CPS agencies and placed in foster-care agencies nationwide.

According to data reported in the 2006 maltreatment report conducted by the Adoption and Foster Care Analysis and Reporting System regarding the 899,000 maltreated children placed in the foster-care system, 64.1% of victims were neglected, 16.6% of victims were physically abused, 8.8% of victims were sexually abused, and 6.6% of the victims suffered from emotional maltreatment (U.S. Department of Health and Human Services, 2006a). In 2006, an estimated 1,530 child fatalities were reported
because of maltreatment (USDHHS, 2006b). During FFY 2005, 63,333 adolescents between the ages of 13 and 20 were placed in various foster-care locations (USDHHS, 2006b). In 2006, nearly 80% of perpetrators of child maltreatment were parents, and another 6.7% of the children were in kinship care. Women consist of a larger percentage of all perpetrators than men (57.9% compared to 42.1%). More than 77.5% of all perpetrators were younger than age 40. As of September 30, 2006, there were 510,000 children and adolescents placed in child-welfare agencies nationwide; 114,000 of these children’s parents had their rights terminated and the children were waiting to be adopted (USDHHS, 2006b).

Currently, one of the most challenging and controversial issues facing the child-welfare system is the disproportionate number of children of color in foster-care placements. In fact, 58% of the foster-care population (292,692) are children of color (African-American/Black, Latino/Hispanic, Asian, and Native American/Indigenous); many of these children will remain in foster-care placements until they are emancipated at age 18 (USDHHS, 2006b). As a result, African American children currently represent 34% of the ethnic group placed in CPS agencies nationwide, a significantly higher share than the number of African American children in the general population. (U.S. Government Accountability Office [USGAO], 1999a, 1999b, 2002, 2004). While most children leave care within 3 years, foster care too often begins early and only ends at 18 years; nearly one-third of the youth in foster-care placements are under age 5 and 20% are over the age of 16 (USDHHS, 2008a).

The seminal research of Rutter (1985) found that one of the foremost predictors of a child’s successful transition to adulthood is positive academic-achievement outcomes in
high school. Each year, 30,000 foster-care alumni emancipate from the child-welfare system at the age of 18 years. Presently, approximately 70% of all American high school students complete their diploma requirements in 4 years or less (USGAO, 2004). This means a significant number of youth in foster care fail to obtain a high school diploma before emancipation. Studies over the past decade indicate that 66% of alumni of foster care had received a high school diploma and about 25% were arrested or incarcerated within 2 years of leaving foster care (e.g., Cook, Fleishman, & Grimes, 1989; Courtney et al., 2007). Numerous studies have found that nearly 47% of children residing in custodial protective-service agencies nationwide receive special education in the PreK–12 educational system (Barth & Ferguson, 2004; Burley & Halpern, 2001; Choice et al., 2001; Finkelstein, Wamsely, & Miranda, 2002).

Children in foster care are likely to have at least two placement changes during high school. Children in foster care are more frequently pulled out of school for court appearances, therapy sessions, and medical appointments when compared to regular students; interruptions that may impact their educational-achievement outcomes (Conger & Rebeck, 2001). Current research suggests that children of color in foster care are more likely than those in the general population to have lower educational-achievement outcomes and repeat a grade level. Research has uncovered a number of factors that account for these educational-achievement disparities, specifically among African American males (Murrell, 2004). Nevertheless, the child-welfare and educational systems have failed to provide specific remedies to facilitate positive educational achievement among this subgroup of the foster-care population. The President’s Commission on Excellence in Special Education (2002) report found that African American children are
disproportionately tested and labeled in high-incidence categories such as educable mentally handicapped and seriously emotionally disturbed. In particular, African American children are twice as likely as Caucasians not to complete high school and never to obtain a high school diploma.

With the notable exceptions of the Blome national-sample study (1997), Casey Northwest Alumni study (Pecora et al., 2006), the Annie E. Casey Foundation Casey Family Services study (Kerman, Wildfire, & Barth, 2002), and the Northwest Casey National Alumni of Foster-Care Study (Pecora et al., 2003), the empirical literature has failed to examine the causes of poor educational achievement among alumni of foster care. Too few studies have examined the specific protective factors associated with successful educational achievement for alumni of foster care. Therefore, this study focused on best practices for improving achievement performance of children placed in foster care.

Background

Nationwide, in 2006 there were 1.1 million adolescents between the ages of 16 and 19 who failed to complete high school requirements and were not enrolled in General Education Diploma (GED) programs (Annie E. Casey Foundation, 2005). Currently, 48% of the entire foster-care population is between 11 and 18 years of age. Data from The National Comprehensive Assessments for Children Entering Foster Care, conducted by Leslie, Gordon, Ganger, and Gist (2002), surveyed child-welfare administrators in 92 localities and only 43% of them reported that they provide physical, psychological, and developmental examinations for these youth. According to O’Neill Murray and Gesiriech (2005), a substantial number of children and adolescents entering foster care have
multiple physical, learning, and psychological disabilities that place them at a higher risk for academic underachievement. The Northwest Alumni Study (Pecora et al., 2005) found that 54% of alumni of foster care had one or more mental-health disorders such as depression, social phobia, or panic syndrome as compared to 22% of their peers in the general population. Further, according to Pecora et al., (2006), students in foster care scored 16 to 20 percentile points below nonfoster students in statewide standardized tests.

Between 60% and 80% of the alumni who emancipate form foster care each year had not yet completed high school requirements (Blome, 1997; Cook et al., 1989; Courtney et al., 2007). The percentage of alumni of foster care who have earned a high school diploma when compared to the millions of nonfoster care children, is much lower. Their completion rate is lower than the 70% on-time graduation rate with a high school diploma for their nonfoster-care peers. Furthermore, less than one eighth (12%) of alumni of foster care obtain a 4-year college degree (Cook et al.; Kerman et al., 2002). In contrast, these rates of GED completion for youth in care are much higher than in the general population (Pecora, et al., 2003).

Of foremost concern to this researcher is that each year 30,000 alumni “age out” of foster care. Aging out refers to alumni who exit the foster-care system only because they reach the age of 18, and not because they are reunited with their families, are adopted, or leave to attend college (USDHHS, 2006b). Achieve of youth in foster care is significantly below the academic-achievement and graduation rates of nonfoster-care students (Barth & Ferguson, 2004; Burley & Halpern, 2001; Choice et al., 2001; Finkelstein et al., 2002). Custodial Protective Service agencies nationwide lack common systematic procedures for describing and/or classifying child-maltreatment types.
However, there is evidence regarding the scope of maltreatment that warrants further investigation regarding a causative factor to lower achievement among adult alumni of foster care. Several researchers have tried to shed light on the gaps in maltreatment research, seeking data relating to severity, incidence, chronicity, extent, type, age of onset, and perpetrator (Barnett, Manly & Cicchetti, 1993; English, Bangdiwala, & Runyan, 2005; Hanson, Smith, Saunders, Swenson, & Conrad, 1995; National Research Council, 1993; Pecora et al., 2006, 2005). Currently, however, there is no common definition of child maltreatment. There are similarities in states’ definitions that allow researchers to develop commonalties among the different types of maltreatment (Pecora et al., 2006, 2005, 2003), but no single comprehensive, definitive breakdown of types and combinations of abuse.

In short, at present the field of child welfare has no common nomenclature for describing and/or classifying a child’s maltreatment experience. A significant number of children and adolescents entering and exiting foster-care placement have emotional, psychological, and cognitive developmental delays as compared with their peers in nonfoster-care placements (Colton, Heath, & Aldgate, 1995; Dubowitz, Zuravin, Starr, Feigelman, & Harrington, 1993; M. Stein, 1997). Neglect was the most prevalent type of child maltreatment reported to foster-care agencies, comprising 45% of all substantiated reports. Despite the stereotype of stepfather abuse, women are often the perpetrators of child neglect. Child neglect was found to be more prevalent in single-parent families and homes in which the mother was young (USDHHS, 2008a). Mothers who receive little social support were often maltreated as children themselves; many have had mental health problems, live in impoverished communities with inadequate mental-health
services or educational facilities, and have significantly higher rates of abusing their children (Briere & Elliott, 1994; Ferguson, 2001).

A study by Chipungu and Bent-Goodley (2004) found that psychosocial risk factors, such as poverty, prenatal substance-abuse, prenatal educational attainment, exposure, substance addiction, domestic violence, and parental incarceration are the primary reasons many children are placed in foster-case agencies nationwide. Specifically, these psychosocial risk factors have been linked to the austere educational achievement of alumni of foster care (Chipungu & Bent-Goodley). Many children and adolescents have experienced maltreatment abuse prior to entering foster care and some continue to endure abuse while residing in custodial protective-service agencies (Child Welfare League of America, 2003a, 2003b, 2003c).

Purpose of the Research

This inquiry is based on prior research conducted by Pecora, the Principal Investigator of the Casey National Foster Care Alumni Study (CNFCAS). The primary purpose of this study was to gain a comprehensive understanding of academic deficits of youth in foster care. This exploratory study targeted the subset of foster-care alumni 21 years of age or older who had not completed high school at the time of existing foster care (“emancipation”). It is the hypothesis of the proposed study that youth in foster care attain significantly lower levels of educational attainment after emancipation, but that completion of high school prior to emancipation may have a significant positive impact on later academic achievement.

The original CNFCAS study traced longitudinal data on subpopulation of foster-care alumni who were placed in Casey Family foster-care homes from 1966 to 1988. The
Pecora et al. (2003) study collected and analyzed data for six major categories of measurement (Alumni and Birth Family History and Context, Experience with Foster Care, Mental Health and Other Systems of Care, Recent Stressful Experience, Potential Trauma and Stress Modifying Variables, Child and Adult Outcomes, and Perceptions of Foster Care), with 33 discrete measurement domains and hundreds of variables, items, and instruments (Pecora et al., 2006). These variables, items, and instruments are potentially useful as controls for analysis of alumni academic achievement, but as previously mentioned, the study will focus on the subset of foster care as it relates to high school graduation. To facilitate this investigation, an integrated theoretical framework will be employed to explore links among the constructs of Erikson’s developmental theory, resilience theory, social-support theory, trauma theory, and ecological risk-based developmental theory and foster-care alumni educational-achievement outcomes. However, the underlying framework for the study is grounded in attachment theory.

The rationale for the present study’s focus on graduation before emancipation is grounded in the CNFCAS findings that (a) less than 70% of youth in foster care finished high school before leaving care; (b) only about 3% of foster-care alumni obtain a bachelor’s degree within a few years of emancipation; (c) those who acquire GEDs after emancipation suffer weaker academic achievement in higher education than those who do finish high school while in foster care. The CNFCAS, the primary data source, tracked variations in levels of academic achievement for foster-care alumni under the measurement domains described above; these outcomes fit closely with those of other researchers. In another study in Washington, students in foster care scored 16 to 20 percentile points below others in statewide standardized tests (Burley & Halpern, 2001).
Given the general consensus on the educational risks facing youth in foster care, it is hypothesized that failure to complete high school while in foster care creates a significant risk of subsequent failure in academic achievement, as measured by years of posthigh school education or training completed. Retrospective longitudinal demographic data will be used to analyze any differences in this population based on gender, ethnicity, and age.

To address the lack of empirical evidence regarding these academic deficits, this study will also determine if a set of factors is predictive of positive academic achievement for alumni of foster care. This inquiry will add to the knowledge base already produced by the CNFCAS, the database from which the study data are drawn. Finally, as a result of this examination, child-welfare agency providers and the K–12 public educational system will be able to develop specific client/student-focused resilience interventions and programs to address the academic deficits of children placed in foster care.

Significance of the Study

The professional literature has established that one in four alumni of foster care will be arrested within 2 years of exiting care; 1 in 5 alumni will be homeless. Nationally, only 32% will obtain a high school diploma, and less then 3% will obtain a postsecondary degree or certificate (Annie E. Casey Foundation, 2005). This study makes a unique contribution to the field of child welfare and education, working to influence policy on emancipation age, support for the enactment of new legislation, and positive changes to The Chafee Foster Care Program criteria (John H. Chafee Foster Care Independence Act of 1999). This research topic was chosen because it is an urgent problem in foster care, in that emancipation at age 18 often leaves young adults without support for postsecondary-
educational endeavors, stable housing, job opportunities, or basic self-reliance skills. The U.S. President has signed an important piece of new legislation, the Fostering Connections to Success and Increasing Adoptions Act, (H.R. 6893, 2008) aimed at this precise question. Federal funds are specifically appropriated to address the educational needs of the subgroup of 18–21 years who exit or remain in the foster-care system. Each state legislature will have to decide whether to support this mandate and allocate the necessary expenditures and extend their benefits to cover this critical transition period; the present study hopes to influence state legislatures to implement this needed support for the transition to adulthood, and for extending care to encourage postsecondary-education completion.

Young people who drop out of high school are unlikely to have the minimum skills and credentials necessary to function in today’s increasingly complex society and technological workplace. Failure to complete high school requirements for graduation, referred to as “dropping out,” is a major national concern. An extensive amount of research has documented that the national high school graduation rate fluctuated between 68% and 71% for the past 20 years. Therefore, nearly 29% to 32% of all public high school students will not obtain a diploma each year. Among students of color (Black, Hispanic or Native American), the rate for obtaining a regular diploma is approximately 50%. On average, female students graduate at insignificantly higher rates than males (Bridgeland, DiIulio, & Morison, 2006). According to a U.S Department of Education (2007) report, nearly 85% of jobs by 2020 will necessitate some form of formal postsecondary educational training. The lack of postsecondary education significantly contributes to poor labor-market prospects, higher rates of public-assistance dependency,
and higher rates of substance abuse and incarceration (Annie E. Casey Foundation, 2005). Furthermore, foster-care adolescents who drop out of high school will have extreme difficulty obtaining postsecondary credentials in the future (Cairns, Cairns, & Neckerman, 1989). In recent years, young adults are leaving traditional family household at later ages, thereby increasing their likelihood of completing high school or vocational-occupational training (Cairns, Cairns, & Neckerman). Unfortunately this is not an option for many emancipated alumni of foster care. Therefore, this study appears to be the first to employ a specific integrated theoretical framework to investigate child maltreatment as contributory to lower educational-achievement outcomes among adult alumni of foster care.

Significance to Society

There is compelling evidence that the child maltreatment crisis imposes a very heavy financial burden on our society. According to the Urban Institute, in the past decade CPS expenditures for child maltreatment totaled $14.4 billion (USGAO, 1999a, 1999b, 2002, 2004). In fiscal year 2002, nearly 5 million referrals for suspected abuse and neglect of children were reported to CPS authorities. The federal government appropriated $13.1 billion in 2002 for the services and programs provided by the Administration for Children and Families. Studies have found that child maltreatment is closely correlated to chronic physical disabilities, learning disabilities, behavioral problems, and mental-health problems. In fiscal year 2001, there was an indirect expenditure of $69.7 billion in the United States, because more children were placed in special education, required increased medical and mental-health care, and juvenile-delinquency rates increased, as did the potential for adult criminality (Barth, Lee,
Wildfire, & Guo, 2006). In 2006, Title IV-E Foster Care expenditures exceed $4.581 billion specifically for child maltreatment, which included family support, the foster-care continuum of services, law enforcement, and the judicial system (USDHHS, 2008b). This developmental crisis ultimately affects the number of individuals who become self-sufficient and contribute to the global economy. This study employed an integrated theoretical framework to explain how each theoretical contract may impact academic achievement of youth in foster care. This integrated theoretical framework should allow clinicians to treat the symptoms associated with chronic physical disabilities, learning disabilities, behavioral problems, and mental-health deficits prevalent among youth in foster care as they impact high school graduation and ongoing achievement in postsecondary higher education.

Significance to the Field of Child Welfare and Education

Critics have argued that protecting children from maltreatment requires a basic reevaluation of the fundamental principles of the nation’s child-welfare system. At present, in the field of child welfare there is no common, systematic, methodical procedure for describing and/or classifying a child’s maltreatment experience. Various researchers found gaps in multimaltreatment research specifically relating to the severity, incidence, chronicity, extent, type, age of onset, and perpetrator (Barnett et al., 1993; English et al., 2005; Hanson et al., 1995; National Research Council, 1993; Pecora et al., 2006, 2005). The persons often responsible for the substantiated maltreatment more than likely are the parents or caregivers. Furthermore, research has confirmed physical and sexual abuse specifically erodes a child’s ability to develop a secure attachment base.
Children may experience serious difficulties in developing relationships with others across their lifespan (Bartholomew & Horowitz, 1991).

Research overwhelmingly supports the concept that positive educational experiences in high school for students from lower socioeconomic status increases the likelihood of completing postsecondary certificates or degree programs (Osgood, Foster, Flanagan, & Ruth, 2005).

Chapter I has provided a historical overview of the problem and the attempts at solutions. It included an introduction and rationale of the social-welfare institution and child-welfare and foster-care systems. It also outlined a synopsis of the background of the problem, the purpose of the study and its significance to society, and the fields of child welfare and education. Chapter II provides a review of the general literature and the integrated theoretical framework regarding psychosocial factors that are prevalent among the foster-care population that appear to impede academic-achievement outcomes. The major gaps in the literature will be identified. A limited number of empirical studies have pointed to best practices for improving academic-achievement performance of children who are placed in foster care, and these works will be consulted as well.

Chapter II also presents a brief synopsis of the theoretical framework that was employed in this study. The review of empirical literature for this research proposal addresses studies on (a) alumni of foster-care academic-achievement outcomes; (b) psychosocial risk factors; (c) resilience protective factors; (d) developmental and psychological delays; and (e) alumni of foster care of color academic-achievement outcomes. The review of empirical literature entails a complex review of independent variables that may impact the dependent variable of educational achievement of alumni.
of foster care. It is very important for future inquiry to explain how theoretical constructs such as developmental delays, attachment types, resiliency, trauma, support networks, psychosocial risk factors, and ecological-developmental models influence academic-achievement outcomes for foster-care alumni. Studies can do this by employing theoretical models, using objective research methods, and using a national data set to improve methodological research designs in the scope of foster-care inquiry. This dissertation study identifies and quantifies several predictors of foster-care alumni educational achievement, and improves the body of knowledge and research methods regarding the impact of emancipation before completion of high school on alumni higher education.
CHAPTER II
LITERATURE REVIEW, THEORETICAL FRAMEWORK, RESEARCH QUESTIONS, AND HYPOTHESES

Theoretical Framework

This study drew on a wide range of sources and theoretical frameworks, including Erikson’s developmental theory, resilience theory, social-support theory, trauma theory, and ecological risk-based developmental models. However, the underlying framework for the study is grounded in attachment theory. Bowlby (1969) introduced his seminal work on attachment theory to describe the developmental and emotional growth of children in various environments as they progressed to adulthood. This theory explains how children develop the ability to function in relationships by modeling and mirroring parental or caregiver behaviors. Bowlby suggested that attachment theory conceptualizes “the propensity of human being to make strong affectional bonds to particular others” (1977, p. 201). As the caregiver responds to the infant’s needs, the infant yearns for safeguards and self-assurance; consequently, affectional bonds deepen between the child and the caregiver that act as the catalyst for relationship development over the lifespan (Bowlby, 1977).

Howe, Brandon, Hinings, and Schofield (1999) found that the quality and character of children’s affectional bond correlated with many factors having a bearing on their future development. Attachment theory has four main dimensions: secure, anxious-ambivalent insecure, resistant or ambivalent, and disorganized/disoriented. Parental or caregiver behavioral patterns influence the level of security the child feels in a particular environment (Bowlby, 1969). Disruptions in attachment relationships may lead to Reactive Attachment Disorder in infancy or early childhood (American Psychiatric
defined as a disorder in which the child exhibits severe disturbances in relationships with caregivers. Because of the impact of maltreatment and the lack of secure attachment and bonding in infancy and childhood, the internal cognitive working model of youth in foster care may be damaged, with negative consequences for learning and educational achievement.

Erikson (1968) constructed his theory of human development by proposing an eight stage psychosocial model of individual lifespan development (Erikson, 1950, 1958, 1964, 1974, 1982; Gross, 1987). Erikson’s primary objective in developing the eight stages of psychosocial-developmental was to identify the transformations of individual attributes in infancy, childhood, adolescence, and adulthood (Erikson, 1950, 1958, 1964, 1974). These eight developmental stages are universal experiences through which developing individuals proceed from infancy to late adulthood. In each stage, the individual embarks on new tasks and overcomes new obstacles, and each new stage builds on the successful completion of the previous stages (Erikson, 1968).

Erikson’s eight-stage psychosocial model can help in understanding maltreated children’s long-term developmental outcomes. Jones-Harden (2000) found that adults who were placed in foster care as children, having often been exposed to such risk factors as neglect, sexual abuse, and domestic violence, face numerous threats to their healthy development and educational achievement. These threats include problems in physical health, attachment difficulties, emotional disorders, learning disabilities, behavioral impairments, and inadequate social skills. In this process, they may experience multiple
unsuccessful placements in foster care, compounding the factors that exacerbate their mental-health difficulties in adulthood.

*Resilience theory* explains individuals’ ability to cope and respond to traumatic experiences encountered throughout their life span (Garmezy, 1991; Rutter, 1985; Werner, 1992). A developmental-resiliency model explains the unique attributes of maltreated youth in foster care who are often diagnosed with cognitive, psychological, and physical deficits that impact educational achievement and self-reliance outcomes (Pecora et al., 2006). Various studies on educational resilience have found a variety of factors important to a successful transition into adulthood, especially for at-risk youth (Block & Kremen, 1996). Factors that influence young adults’ self-reliance and academic-achievement outcomes include ambition, educational behaviors, familial support, educational milieu, supportive networks, positive social behaviors, negative behaviors, and religious conviction.

According to Garmezy (1991), Rutter (1985), and Werner (1992), risk factors are psychosocial vulnerabilities that increase the possibility of an adverse developmental impediment. Protective factors include individual, family, and community attributes that positively adapt, restructure, or change individuals’ reactions to some environmental danger and influence their ability to achieve economic self-sufficiency and positive educational achievement in spite of harsh conditions (Garmezy, 1991, 1993; Rutter, 1995; Werner). Specifically, resiliency research provides a validated practical framework to be implemented in the foster home, school, and community for at-risk students to promote social competence (Pittman, 2006). Garmezy (1991, p. 4) explained, “Resiliency
research has provided a compelling rationale for shifting to a youth development approach in policy and practice.

*Social-support theory* is one of the earliest theoretical frameworks for social relations and human development, introduced nearly 100 years ago (Caplan, 1974). Social-support theory explains how three main philosophical and pragmatic dimensions (the community, social network, and bonding relationships) are necessary for individuals to become self-reliant (Caplan). Despite its long history, social-support theory remains a complex theoretical construct that has been difficult to define and empirically validate. However, it has been used to investigate factors associated with developmental stress and social alienation in individuals who were detached from their biological family, and have difficulties establishing positive peer networks and relationships. Lack of healthy social relationships can have a negative impact on positive mental-health outcomes among alumni of foster care (Caplan).

*Trauma theory* research emerged in the foster-care literature in the early 1970s, after the laws on open adoptions changed (Briere, 1992). The study of the psychobiology of trauma established the basis for biological psychiatry, which recognizes that trauma actually affects the functioning of the brain (Briere). Trauma theory explains how the effects of distressing experiences in individuals may cause problems later in life through the memory and psychological repetition of the traumatic event (Briere; Caplan, 1974). Psychological injury impacts an individual’s body, and traumatic experiences, particularly interpersonal trauma, disrupt the “internal working model,” and weaken individuals’ ability to form a secure attachment base with their caretaker (Briere).
However, focused empirical inquiry is lacking into the specific effects of childhood trauma on foster-care adults’ educational achievement and educational outcomes (Briere).

The extensive body of research on attachment issues confirms that attachment and bonding are closely interrelated with Erikson’s model of early development. Further, trauma can have significant detrimental effects on an individual’s developmental growth and emotional stability, as it adversely impacts the mechanisms needed to display resilient attributes when encountering life’s adversities (Briere). As many recent studies have found, there is a significant relationship between childhood-abuse trauma and adult-relationship complications (Briere). Research has also established that social support is a very important factor for healing maltreated individuals after they have experienced a traumatizing event (Briere). Therefore, the influential roles of social support, social norms, social meaning, and social responsibility all take on new and greater meaning and provide an important basis for studying and understanding diverse individuals, families, cultures, and communities (Briere).

Ecological and risk-based developmental models explain a child’s development in the framework of the system of social relationships that are responsible for long-term growth. Bronfenbrenner’s ecological theory (1979) examined multifaceted “layers” of the social environment, each having an effect on a child’s development. This theory has recently been restyled as “bioecological systems theory,” to emphasize a child’s own environmentalism as the primary instrument necessary to cope with and decrease psychosocial risk factors (Bronfenbrenner; Bronfenbrenner & Morris, 1998; Garbarino, 1982). In this theory, the child’s biological organism/environment interacts with and develops through the child’s family, community, and social relationships, each of which
constitutes an interrelated layer of the total social environment, which includes such elements as schooling, religion, and culture.

Empirical Literature

Child-welfare services and the foster-care system are interconnected systems that are collectively responsible for providing a safe environment for maltreated children. The foster-care system is intended to provide a continuum of services for children who are making the transition to adulthood if they are still in foster care beyond age 16. Many challenges to successful transition exist. For example, research has established that more than two-thirds of the 496,000 children in foster care today reside with nonrelatives (USGAO, 2008). If their ties to extended family and other relatives are broken completely, these youth may lack the social supports and coaching provided to family-based youth. A number of studies have documented the poor independent-living services and supports available to many alumni of foster care (Cook, 1992; USGAO, 2004). Part of the problem is the lack of coaching support addressing educational deficits, study skills, and failure or dropout in school. The lack of coaching and mentoring support is made all the more difficult because of frequent placement changes (Emerson & Lovitt, 2003; Pecora et al., 2005).

Consequently, the lack of support in the home and in the school for students who are academically challenged significantly impacts academic-achievement outcomes and is closely correlated with dropping out of high school (North Central Regional Educational Laboratory, 1994; Padron, Waxman, & Rivera, 2002; Rutter, 1979, 1987a). According to Wehlage and Rutter (1986), high schools contribute to the high withdrawal rate by forcing students who are academically unsuccessful out of the educational setting.
For example, the most widely-cited national follow-up study of alumni, conducted by Cook (1990, 1992), studied educational achievement outcomes and found that 46% of alumni exited foster care without completing high school within 2.5 to 4 years after leaving care.

Policymakers and child-welfare experts are rightly concerned with the educational progress of the 30,000 annually emancipated alumni of foster care. These 18-year-old young adults often have educational deficits and insufficient self-reliance skills, factors that contribute to their difficulties transitioning to adulthood. Foremost among concerns is whether they receive adequate independent-living training and educational support/remediation, both during foster care and in the years after exiting or emancipating from the system. The role of physical neglect, which is one of the major types of child maltreatment, lacks empirical inquiry regarding its impact on alumni of foster-care academic-achievement outcomes (Finkelstein et al., 2002). In addition, research has not clearly determined what specific services or resilience attributes facilitate a better transition to adulthood. In fact, very few studies have been conducted specifically on foster-care alumni academic-achievement outcomes. McMillen, Auslander, Elze, White, and Thompson’s (2003) study found 70% of new alumni interviewed reported that they wanted to pursue postsecondary education or training. McMillen and colleagues determined that 63% of these teenagers had changed schools at least once since the seventh grade. Additionally, these researchers reported several troubling statistics regarding their secondary school educational-achievement outcomes: 73% had been suspended at least once from school, 16% were actually expelled, and 58% had failed at least one class.
Extensive research has led to insight into the various psychosocial factors that place alumni of foster care at risk. Psychosocial risk factors predict the increased likelihood of a subsequent adverse outcome. Alumni of foster care who exit placement at 18 years without completing high school are more likely than those in the general population not to complete high school, to become unemployed, and to receive public-assistance benefits. As a result, many alumni are incarcerated, homeless, or engage in high-risk behaviors, such as substance abuse and unprotected sex (Jones-Harden, 2000).

The Cook (1990, 1992), follow-up study remains one of the only national samples of alumni of foster-care self-reliance outcomes using data from eight states. Over 50% of alumni were substance abusers, 32% reported involvement with the correctional/penal system, 66% failed to complete high school or obtain a GED after leaving care, 61% lacked employable skills, and 17% of females had unmarried childbirths. Four years later, 70% of these alumni reported that they had spent at least one night homeless, and only 50% were employed and had obtained a GED certificate. In a retrospective study of 200 alumni of foster care that were placed in a group home in the Midwest, Alexander and Huberty (1993) found 70% had obtained a high school diploma, 27% had enrolled in postsecondary educational training, and 14% received in-kind and cash benefits from local social-welfare institutions.

Furthermore, there may be a correlation between the number of foster-care placements and alumni of foster care educational underachievement. A Northwest Foster Care Study of 479 alumni who experienced an average of seven or more school changes between elementary and high school and were in care for approximately 10 years, found that these changes severely influenced their ability to obtain a diploma before leaving
In this sample of alumni of one successful foster-care program, Pecora et al. (2005) found that 84.8% obtained a high school diploma or GED certificate but less than 2% completed a bachelor's-degree program; approximately 12% were still in a school of one kind or another. Numerous studies indicated that a substantial number of children in foster care have a more difficult time than their nonfoster-care peers in pursuing postsecondary training and becoming self-reliant adults (Barnett et al., 1993; English et al., 2005; Hanson et al., 1995; National Research Council, 1993; Pecora et al., 2006, 2005). However, a recent study conducted by Courtney et al. (2005) found that 80% of these same foster-care alumni in fact had postsecondary educational aspirations.

Blome (1997) found that only 15% of alumni of foster care may register and complete postsecondary credentials, as compared to 32% of other at-risk students who have the same intellectual ability and were not placed in foster care. Foster-care researchers have usually documented the percentage of alumni who were enrolled in postsecondary vocational training or certification programs, rather than their high school completion rates, because so many alumni of foster care never graduated from high school or obtained a GED, much less went on to college.

**Maltreatment Types**

The Northwest Foster Care Alumni Study (Pecora et al., 2003, 2006) examined six main categories of child maltreatment and 55 self-reliance outcomes. The data set does not specifically reveal when the child maltreatment occurred among alumni. The data show the primary reason(s) for child placement and were very helpful in determining the initial placement in the foster-care system for substantiated maltreatment abuse. Below are the six expanded hierarchical categorizations of maltreatment abuse examined.
in the CNFCAS: (a) no child maltreatment; (b) sexual abuse only; (c) sexual abuse and other; (d) physical abuse only; (e) physical neglect only; and (d) physical neglect and physical abuse. This study replicated these six categories of maltreatment types to examine if there is a contributory relationship between maltreatment and lower academic-achievement outcomes.

Research has confirmed that there are numerous environmental risk factors related to child maltreatment, such as financial distress, lack of social support, and parental disagreement with cultural or religious values. Therefore, physical abuse is more likely to occur in family situations in which parenting skills are poor, where high levels of trauma are present, when parents are very young, when parental expectations concerning behaviors are too high, when substance abuse is apparent, and when adults in the family fail to display compassion toward the child (Epstein, 2001).

There is little cross-cultural data available on the impact of child-maltreatment types on ethnic origin and developmental progress into adulthood. In general, child maltreatment negatively influences the victims’ adult cognitive, physical, and psychosocial functioning (Epstein, 2001). A history of child abuse was one of the leading predictors of psychosomatic problems in adulthood in a sample of abuse survivors. The long-term effects of maltreatment appeared to be intergenerational (Zuravin, McMillan, DePanfilis, & Risley-Curtiss, 1996). There is a positive relationship between experiencing maltreatment as a child and engaging in adolescent and adulthood criminal activity. Over one third of the adult population had significant emotional maltreatment experiences and 10% to 15% of the adult population has suffered chronic or severe emotional maltreatment (Straus & Gelles, 1989). Empirical evidence suggests there is a
causative relationship between emotional abuse and the following problems: children who are angry, assaultive or aggressive; delinquency; criminal involvement; substance abuse; low self-esteem; divorce; and poor parenting skills; (Straus & Gelles).

Sexual abuse is the most highly researched maltreatment type. A substantial amount of inquiry has shown childhood sexual abuse to be extremely harmful. However, some studies have reported that some sexual-abuse victims developed greater resiliency and showed few or no symptoms that affected their adulthood intimate relationships (Kendall-Tackett, Williams, & Finkelhor, 1993). Sexually abused children may experience various short-term and long-term symptoms that arise in adolescence and adulthood such as posttraumatic stress disorder, but this is also due to other experiences in their lives that were precipitated by the sexual abuse (Kendall-Tackett et al.; Perry, 2001). There is a causal relationship between sexual-abuse exposure and sexualized behavior, such as public masturbation, sexual play with dolls, and asking other children and adults to engage in sexual activity (Kendall-Tackett et al.). Briere and Elliott (1994) determined that the long-term effects of sexual abuse may be symptoms, such as posttraumatic stress disorder, cognitive distortions, emotional distress, avoidance, interpersonal difficulties, physical health problems, and self-esteem issues.

Adults who are victims of sexual abuse in their childhood are prone to have more physical-health disabilities than their nonabused counterparts (Kendall-Tackett et al., 1993; Perry, 2001). Researchers have found specific differences among ethnic groups in sexually abusive experiences, attributes, and long-term and short-term symptoms (Berliner & Elliott, 1996). Researchers have established a link between the duration and frequency of sexual abuse and its long-term effects (Berliner & Elliott; Kendall-Tackett
et al., 1993). Lastly, a seminal study conducted by Stock, Bell, Boyer, and Connell (1992), using a sample of 3,128 girls enrolled in the eighth grade, found that there was a relationship between childhood sexual abuse, promiscuity, and adolescent pregnancy. The researchers found that sexually abused adolescents were 3.2 times more likely to become pregnant and engage in high-risk sexualized behaviors than adolescents who were not abused. The trauma associated with childhood sexual abuse may impact the survivor’s ability to maintain adulthood relationships and may decrease educational achievement.

*Child maltreatment* is a complex term and specific theoretical modalities of treatment for both the child and the perpetrator warrant further examination. There is limited empirical literature on multiple factors influencing educational achievement; this study examined the number of placements, age, gender, ethnicity, and maltreatment type (sexual, physical, and neglect) and how these independent variables impact the dependent variable, alumni of foster-care academic-achievement outcomes.

**Foster Care Alumni Developmental and Psychological Delays**

Researchers have identified strong relationships between various attachment types and developmental and psychological delays. Positive attachment relationships are essential to the functioning of the family as a foundational structure to develop emotional resilience throughout the lifespan (Carlson & Sroufe, 1995; Cicchetti, 1990; Maccoby, 1980; Sroufe & Waters, 1977; Waters, Vaughn, Posada, & Kondo-Ikemura, 1995). Many of the obstacles facing foster-care alumni adults are systemic and rooted in changing family dynamics caused by the amplification in urbanization, manifestations of violence,
substance abuse, and insufficient economic resources, such as lacking housing, food, clothing, and health care (Carlson & Sroufe).

Children who reside in urban, impoverished communities and who attend schools with below-average educational structure are less likely to obtain a high school diploma. Studies have identified poverty as a possible contributing factor for parental or caregiver child neglect (Brown, Cohen, Johnson, & Salzinger, 1998; Dubowitz, 1996). Consequently, various researchers have developed factor models that may explain the causal links between poverty and child neglect. These factors are limited access to health care, exposure to ecological hazards such as lead paint, residing in unsafe localities, unwed childbirths, unstable living situations or frequent moves, and dilapidated or high-risk communities (Brown et al.; Dubowitz, 1996, 1999; Dubowitz, & Black, 1996; Pelton, 1994).

Evidence has linked poverty to maltreatment. The poverty rate for families in which caregivers did not have a high school diploma is approximately 66% (Orfield, 2004). Lacking secondary-educational credentials places these children at significantly higher risk for deleterious intergenerational conflicts and outcomes. In other words, as these children transition into adulthood they may eventually display poor parental behavior themselves as an end result, due to how they may have been impacted by an elder caregiver. Children who reside in impoverished conditions are less likely to acquire preemployment skills, and are more likely to be unemployed at the age of 19 than those children from higher socioeconomic backgrounds (Orfield).

African American males born into lower socioeconomic families have a significantly higher chance of being murdered by some act of violence before turning 18
years of age than males of other ethnicities (Hispanic, Asian, and Native American). Therefore, the magnification of these socioeconomic problems and the continued growth of poor urban communities can severely limit a child’s self-reliance and academic-achievement outcomes. Engle, Castle, and Menon (1996) suggested that these factors contribute to children being born into families with intergenerational familial barriers, creating developmental delays that have the tendency to impede self-reliance and educational success.

Many children who enter foster-care placements bring with them special needs; they may suffer emotional, behavioral, or developmental impairments. Today, in more than 75% of the reported maltreatment cases to CPS agencies nationwide, parental or caregiver substance abuse was a factor (Pecora, Whittaker, Maluccio, Barth, & Plotnick, 2000). Foster-care youth who are served by CPS agencies have lacked coherent nurturing and a secure attachment base throughout their childhood. In addition, children in need of foster care often have their own unique health and developmental challenges. There is now a substantial body of empirical literature depicting mental health and developmental delays among children and adolescents entering and exiting the child-welfare system (Gruber, 1987; Pilowsky, 1995; E. Stein, Evans, Mazumdar, & Rae-Grant, 1996).

Researchers have also concluded that foster-care alumni are substantially at a higher risk to display emotional and behavioral impairments compared with peers in the general population (E. Stein et al.).

McIntyre and Kessler (1998) found that over 50% of children in foster care experienced long-term psychological and developmental impairments that significantly affected their ability to attain high educational-achievement and self-reliance outcomes.
Furthermore, these researchers also reported a relationship among psychological developmental impairments, resilience attributes, and attachments types. Currently, attachment theories have had a significant effect on developmental-psychopathology research in explaining foster-care alumni academic-achievement and self-reliance outcomes (Cassidy & Shaver, 1999; Sroufe, Egeland, & Carlson, 1999). The psychological and developmental impairments of adolescents in foster care make them extremely vulnerable to insecure attachment issues, compared with adolescents living in a safe, protected environment.

Alumni of Foster Care Educational Achievement Outcomes and Resiliency

Early research has linked psychological resilience to positive and negative individual attributes identified in the theoretical constructs of developmental psychopathology (Garmezy, 1991, 1993; Rutter, 1995; Werner, 1992). Psychopathology suggests that high-risk individuals with developmental delays display a lower degree of resilience attributes than individuals who are not high risk, and thus have lower educational achievement. At present, 40% of adolescents in foster care have been diagnosed with cognitive, behavioral, physical, psychological, and medical disabilities that impede their academic-achievement outcomes; a figure significantly higher than their nondisabled peers (USDHHS, 2005).

Educational-Achievement Proficiency in High School is a Key Factor in Postsecondary Training

Werner and Smith (1992) conducted a 30-year longitudinal study of 698 Hawaiian children, examining their resilience attributes across various home and school settings. The children were reported to live in unstable environments, impoverished
homes, and to have several developmental delays because of high levels of prenatal exposure to substance abuse. Werner and Smith reported that approximately 233 of the Hawaiian subjects achieved an acceptable degree of resilience and had positive self-reliance and academic-achievement outcomes. However, as adults, the other 445 Hawaiians displayed a lower degree of resilience attributes and had multiple psychosocial factors that impeded their ability to attain positive self-reliance and academic-achievement outcomes. Werner and Smith's work validated psychological resilience risk factors, such as social support, presence of caring, a supportive adult figure, positive parent–child relationships, and effective parenting. Their work showed that biological, social, and psychological factors have a high probability of contributing to adaptive coping strategies in the face of adversities. Serbin and Karp's (2004) findings are also linked to individual resilience attributes. They identified educational success, developmental delays, and parental-bonding attachment issues as important variables that mediate the successful transition from adolescence to adulthood and afford opportunities for positive self-reliance and academic-achievement outcomes (Egeland, 1991, 2007; Egeland, Sroufe, & Erickson, 1983).

*Chafee Foster Care Independent Act*

In 1999, in response to the growing number of children in foster care who were quickly approaching the age of 18, Congress passed the Chafee Foster Care Independence Act. That act required all state and local governments to develop Transitional Independent Living Programs with three components: preparation for employment, postsecondary education, and successful management of adult responsibilities (U.S. Government Accountability Office, 1999a, 1999b, 2002, 2004). In
1999, Congress significantly increased expenditures for Transitional Independent Living Programs from $70 million to $140 million, mandated states to provide services for youth up to age 21, and authorized state legislators to be able to continue youths’ medical insurance until the age of 21. States are required to spend 30% of the Chafee funds allocated by the federal government on direct care for transitional programming. The law constituted an effort to prepare children to make successful transitions from dependence on the child-welfare system to self-sufficiency in adulthood (U.S. Government Accountability Office, 1999a, 1999b, 2002, 2004).

*Child Abuse Prevention and Treatment Act*

In 1974, the recognition of battered-child syndrome led to the passage of The Child Abuse Prevention and Treatment Act. This fundamental federal legislation, which created the first mandatory child-abuse-and-neglect reporting system, requires states to implement child-abuse reporting, investigation, and intervention systems. The original legislative mandate has been revised six times (in 1978, 1984, 1988, 1992, 1996, and 2003); all professionals who work with children in any capacity are mandated to report suspected maltreatment. In addition, any citizen can report incidents of abuse or neglect to child-welfare authorities (USDHHS, 2004).

Since the implementation of mandatory abuse reporting in 1975, the federal government’s role in influencing national child-welfare legislation, policies, and procedures has significantly increased (USDHHS, 2001). The purpose of the various and extensive federal mandates is to decrease the number of children entering CPS agencies nationwide, to increase adoptions annually, and to restructure the child-welfare system (Pecora et al., 2000). Specifically, the Child Abuse Prevention and Treatment Act
mandates were to provide CPS agencies with a theoretical framework to increase foster care youths' adoptions nationwide (Pecora et al., 2000).

At the same time federal mandates were legislated, state legislative bodies enacted laws, polices, and procedures to comply with federal child-welfare mandates. Even with the significant number of legislative mandates, many children continued to be placed in the foster-care system and remained in care for prolonged periods. As a result, substantial numbers of foster-care youth were waiting to be adopted (Calhoun, 1980). At end of the fiscal federal year 1930, there were approximately 200,000 children in the foster-care system; this number increased by 83,000 in a 30-year period (Tatara, 1993; U.S. House of Representatives, 1998). Beginning in the 1960s, the number of referrals to CPS agencies regarding alleged child abuse and neglect began to increase significantly from 10,000 in 1962 to 60,000 in 1974 (Lindsey, 1994). In 1975, there were approximately 448,000 children in the foster care, and the number increased to over 500,000 children in custodial protective agencies nationwide by 1980 (Tatara, 1993; U.S. House of Representatives, 1998). This national growth of children in foster care led to the aggressive efforts by child-welfare agencies to reduce the number of children in foster care nationwide (Tatara, 1993; U.S. House of Representatives, 1998).

Alumni of Foster Care Educational Achievement Programs

Postsecondary Educational Programs for foster Care Alumni Adults

Previous research alluded to the premise that children and adolescents in foster-care placements experience lower educational attainment compared with children and adolescents in traditional familial households (Kessler, 2004). Completing high school or vocational/occupational training may be necessary to prepare individuals for
postsecondary attainment as a contributory factor to societal value. Therefore, in 2001, the U.S Congress passed the Promoting Safe and Stable Families Act, which established the Education and Training Voucher program, requiring implementation of postpermanency services for foster-care alumni adults (USDHHS, 2006). Eighty percent of the program was state funded by the Department of Education and the other 20% came from U.S. congressional expenditures.

The purpose of the Education and Training Voucher program was to allocate fiscal expenditures to provide postsecondary educational opportunities to foster-care alumni adults and those alumni who were adopted prior to their 16th birthday (USDHHS, 2006). These foster-care alumni adults may receive approximately $5,000 per year to attend state-funded postsecondary educational institutions and vocational-training facilities. Participants must meet specific eligibility criteria to participate in a state Transitional Independent Living Program. States may elect to spend 10% of Education and Training Voucher funds on administrative costs; and foster-care alumni adults can receive additional funds or vouchers for living expenses. Education and Training Voucher funds may be used for educational activities including tuition and fees, campus housing, off-campus housing, food allowances for off-campus students, expenditures for books, supplies, transportation, loan fees, and child care. Expenditures related to disability and miscellaneous expenses may include the rental or purchase of a personal computer and other reasonable costs related to study-abroad programs. More recent research indicated approximately 70% of U.S. students complete high school in 4 years, obtaining a diploma, while for Hispanic and African American students only 35% do so. This lack has a significant impact primary on African American children who are vastly
overrepresented in CPS agencies nationally; therefore, these children face a greater challenge to achieve positive academic outcomes as adults (USDHHS, 2006).

Independent Living Curriculum Grantees Program

Research has extensively documented the complexities that foster-care-alumni adults have encountered during their transition into adulthood. Many youths have developmental impairments that impede their ability to become resilient due to childhood adversities. In 2001, the United States Department of Health and Human Services, Administration for Children and Families, in conjunction with the Children’s Bureau, sponsored and allocated financial support for universities to develop comprehensive training models for foster-care youth regarding the transition into adulthood. It may have been vital for Transitional Independent Living Programs to have implemented these competency-training models nationwide (USDHHS, 2003). In the interim, numerous child-welfare organizations, associations, and advocacy groups have developed evidence-based comprehensive theoretical models to augment foster-care-youth alumni adult-self-reliance and academic-achievement outcomes.

Tuition Waiver Programs

By enacting legislative mandates, currently 14 states have implemented Tuition Waiver Programs that allow foster-care youth alumni who obtain a high school diploma or a GED to attend postsecondary state colleges and universities or state technical-training institutions free of charge. Eligibility criteria are determined by state welfare officials and legislators for participation in the program. Additionally, funding is
available for room and board, books, supplies, computers, and transportation (USGAO, 1997; USDHHS, 1997).

The negative educational outcomes for many young adults emancipating from foster care have been clearly documented in the literature (Blome, 1997; Choice et al., 2001; Colton et al., 1995). Foster Care Alumni Adults Educational Achievement Outcomes and Placement Stability

Substantial evidence has documented the magnitude and causes of the high school dropout crisis in America. Furthermore, research has documented higher incidences of truancy and frequent school changes among foster-care-alumni adults, which leads to secondary educational underachievement. The Casey Family Program (Casey) study (2000) found that 65% of the 479 foster-care-alumni adults reported experiencing seven or more school changes, interrupting secondary educational attainment. However, some anecdotal evidence has revealed better positive educational outcomes for some foster-care-alumni adults (Kessler, 2004). In fact, few studies have examined whether there is a contributory relationship between foster-care placement experiences and lower academic-achievement outcomes.

Orfield (2004) contended that most state dropout research is methodologically impaired and contains confusing and inconsistent statistics. Studies for researchers that relied solely on self-reporting from foster-care alumni regarding their educational achievement prior to or during foster-care placement are especially troublesome. In addition, there has been minimal inquiry by the states and federal education agencies that allocate fiscal expenditures to collect accurate data. The researcher found few studies that examined the effect of foster-care experiences, including the reason for placement, length
of stay, and whether children ran away from their placement, and how these variables may impact their academic-achievement outcomes. These findings reveal significant gaps in foster-care-research inquiry.

Conger and Rebeck (2001) found that foster-care experiences had a significant impact on school attendance and the number of times children in foster care changed placements during the school year. These researchers reported a significant relationship among school attendance, the number of placements, and the impact of foster-care-alumni adults’ reading and mathematics competency. Furthermore, school transfers because of frequent custodial-placement changes impacted attendance rates and examination scores (Conger & Rebeck). School transfers to some extent increased attendance, but had no impact on reading scores and reduced mathematics scores significantly. Conger and Rebeck found that foster children have extremely poor attendance rates compared to students in the general population. However, several groupings of children improved their attendance after entering CPS, including those who were young or entered placement because of maltreatment (Conger & Rebeck).

Children and adolescents who remained in care for at least the entire school term after they entered, and were placed in a family unit, tended to do well. These children’s foster-care experiences appeared to increase school stability, which in turn promoted learning and educational achievement (Conger & Rebeck, 2001). There is a multiplicity of factors that contribute to the influx of adolescents in congregate-foster-care placements such as excessive school absences, tardiness, and running away from placement. These factors significantly impacted their overall attendance rate, which is a contributory factor that reduces secondary educational-achievement outcomes among the foster-care
population. Independent of these psychosocial risk factors, age of first placement is also associated with poor attendance; this mandates the need for protective factors in the educational milieu for these adolescents, as they are very important to ensure positive adulthood academic-achievement outcomes. Statistically, 63,333 maltreated adolescents between the ages of 13 and 20 in FFY 2005 were assigned to various foster-care placements that significantly disrupted their school attendance and educational achievement (USDHHS, 2006b). A significant body of research has established that middle and high school truancy is linked to delinquency. Farrington (1996) reported that of the 400 foster-care alumni studied, 48% of truants were convicted of delinquency, while only 14% of nontruants were convicted. Furthermore, 87% qualified for free or reduced lunch, 19% had individual education plans and were placed in the continuum of special education, 15% had school-discipline problems, and 13% had juvenile-justice involvement at program intake—a high proportion considering 70% of the students were not yet in high school. Thirty-six percent resided with only one adult in the home, and 20% resided with an employed parent or caretaker.

Conger and Rebeck (2001) reported in their study that often only the most serious maltreated accusation resulted in a formal investigation in New York City. These researchers conducted case-record reviews of over 17,000 foster-care infants, children, and adolescents and determined that school attendance rates were about 76.2% before being placed by CPS. Furthermore, after this targeted group of children was placed in foster-care homes their school attendance rate slightly improved, although it did not impact overall educational achievement.
A comparable study conducted by Heilbrunn (2004) of Colorado foster-care infants, children, and adolescents with school-related problems included an analysis of juvenile-justice records, which were available for most of the participants. The records confirmed that 41% had been removed from their homes and placed in CPS for maltreatment. The time in placement for the participants ranged from 19 days to over 3 years, with an average stay of approximately 1 year.

Attendance policies are school and district regulations about student attendance requirements, excused and unexcused absences, and the penalty for absenteeism. A review of the research on attendance policies exposed that the most successful attendance policies are those that encourage attendance rather than punish absence (especially through out-of-school expulsion).

Policies should be understandable and unswerving across the entire school district. Students, parents, and staff must be aware of these policies, and especially the difference between excused absences and truancy (Railsback, 2004). Attendance Programs have been the focus of some compelling cost–benefit analysis. Based on a comparatively scrupulous estimate that, over their life span, a person who drops out of high school costs the taxpayers more than $200,000 in intemperance criminal justice, social-service, and healthcare costs, and consistent truancy is a major psychosocial risk factor for dropping out of school. Heilbrun (2003) calculated that two different multimodal nonattendance-reduction programs paid for themselves (that is, saved more public money than they spend) if each prevented one student from dropping out every 4 years. A larger program in a metropolitan area required successfully preventing four students per year from dropping out to pay for itself (in terms of public monies saved).
All three programs Heilburn investigated had much better achievement rates than were required to break even and thus eventually represented a savings to the community.

**Resilience and Protective Factors**

In general, children, adolescents, and adults who display a high degree of psychosocial risk behavior (due to traumatic life circumstances) triumph over negative environmental conditions if resilience protective factors are present in their immediate environment (Serbin & Karp, 2004). The research to date has been methodologically limited in nature, and most studies using cross-sectional data and adolescent self-reports have been unsophisticated. Only a small number of research studies have used a multiplicity of factors to explore adolescent resilience development (Fraser, 1998; Garmezy, 1991, 1993; Rutter, 1990, 1991, 1993; Sroufe et al., 1999).

This is a serious issue because research has shown that children and adolescents in the foster-care system have a high incidence of developmental delays. Mech and Fung (1999) conducted 18,984 case-study reviews on foster-care adolescents served by the Illinois Department of Children and Family Services and found that 21% were classified as having mental disabilities, 34% were classified as emotionally impaired, and 45% were labeled as having multiple learning disabilities.

The manifestation of resilience attributes has become the key to nurturing maltreated children and adolescents who live in various foster-care placements, detached from their biological-family units (Serbin & Karp, 2004). Understanding the concept of resilience requires knowledge of cultural, social, historical, psychological, and biological frameworks (Serbin & Karp). Many alumni of foster care emancipate without sufficient financial resources, housing, clothing, and medical insurance, have mental and physical
health complications, and lack supportive networks and education, which further delays their ability to become self-reliant (United Way of Broward County, 2004). Prior research has identified three key factors that mediate resilience. These factors include (a) self-reflection and meaning-making about the self, important relationships, and educational and occupational successes and security; (b) the individuals’ capacity to use symptoms, risk, and problems to motivate themselves to reflect, to test new thoughts and behaviors, and to gain insight from trauma; and (c) the capacity to enter into productive relationships, to be supported by people and institutions that are attentive, and to make a positive contribution to an individual’s development and well-being.

For the past 30 years, a modest but growing body of literature has reported on the adverse academic-achievement outcomes of individuals who were placed in foster care (Collins, 2001; Georgiades, 2003). As discussed earlier, research has established that many alumni of foster care have multiple medical, psychological, physical, and learning disabilities. Adult alumni who were placed in CPS agencies for a number of years because of maltreatment and detachment from their biological-family units are predicted to have trouble coping with life’s adversities (Bartholomew & Horowitz, 1991). But specific correlations between types of abuse, number of placements and other demographics, and academic-achievement outcomes (high school graduation, college or university education, and so on), are still lacking.

_Foster Care Alumni of Color: Educational Achievement Outcomes_

The Kindergarten Class Psychometric Report of the Early Childhood Longitudinal Study (ECLS-K, 1998) suggested that African American males’ underachievement is rooted in a multiplicity of factors that affect their school-readiness.
skills in mathematics and reading when compared with other ethnic groups. This may be due to the inadequate instruction in their primary educational years, caused by the lack of resources in urban schools and the shortage of qualified teachers and other personnel (Conger & Rebeck, 2001). These findings are based on population data, as specific data about educational outcomes for youth of color in foster care are sparse. Data from the 1995 National Household Education Survey (USDHHS, 1997, p. 1) revealed, “African American preschoolers are lower than Euro-Americans on indicators of emergent literacy.” In addition, “the average 3- and 4-year old African-Americans’ score is at about the 20th percentile on vocabulary tests” (USDHHS, 1997, p. 1). A disproportionate number of African American preschoolers have been placed in foster care, and have encountered frequent foster-care and school changes. These adverse changes may have caused significant impairments in developmental outcomes, which could explain why African American alumni of foster care have lower academic-achievement outcomes.

The fundamental idea of permanency planning is related to attachment constructs and stability in the home, as underpinnings of child development and identity formation. Another significant issue is how decision making can be individualized, timely, and culturally appropriate (Massinga & Pecora, 2004). In fact, African American children, who composed approximately 15% of all children under age 18, accounted for 34% of the foster-care population and stay in care longer. Furthermore, non-Hispanic White children, who composed about 59% of American children, comprised only 41% of foster children in 2005. Hispanic children, who composed 19% of U.S. children, comprised 18% of foster children in 2005. African American children thus make up about one third of the foster-care population and stay in care longer. As a result of these disparities, many
Black non-Hispanic males in America have encountered multiple barriers to obtaining equal educational opportunities (Carey, 2008).

In 2003, a study commissioned by The Child Welfare League of America and reported by Harvey (Carey, 2008), found that disproportionate overrepresentation of foster care of children of color was a very serious issue, especially related to institutional educational opportunities, which further decreased their academic-achievement outcomes. Although a substantial amount of research indicates that the average child of color is not at any higher risk for maltreatment than the average Caucasian child (Child Welfare League of America, 2003a, 2003b, 2003c; Ards, Chung & Myers, 1999; USDHHS, 2002), there are new data that do show a higher rate of victimization among African American children (see Table 2-1).

Table 2-1

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>Rates of child maltreatment per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>19.98</td>
</tr>
<tr>
<td>American Indian or Alaska</td>
<td>15.90</td>
</tr>
<tr>
<td>Native</td>
<td>15.40</td>
</tr>
<tr>
<td>Children of multiple races</td>
<td>15.40</td>
</tr>
<tr>
<td>White</td>
<td>10.70</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.80</td>
</tr>
<tr>
<td>Asian</td>
<td>2.50</td>
</tr>
</tbody>
</table>


The Child Welfare League of America (2003a) called for governmental agencies to collaborate in efforts to further study the factors that were associated with the disproportional and contrasting policies and practices in the child-welfare system; factors that may hinder the education of children of color in the foster-care population.
This disproportionate overrepresentation validates the need for services aimed at addressing the unique demographic attributes of emancipating 18-year-old children of color from the foster-care system. It also underscores the need for the implementation of cultural-competence theoretical models and more diverse child-welfare personnel nationwide (Chipungu & Bent-Goodley, 2004). Over the past decade, empirical evidence suggested that permanent placement is often less prevalent for children of color in foster care (Chipungu & Bent-Goodley), leading to more alumni of foster care of color being emancipated at the age of 18, as compared to a significant number of Caucasian youth in foster care who have been reunited with their biological families, placed in kinship care, or adopted. In thoroughly reviewing the literature, this researcher has found multiple gaps in transitional programming and educational remedial services for this highly at-risk subpopulation of alumni of foster care. Therefore, it may be prudent for alumni of foster care of color to participate in transitional independent-living programs (TILPs), academic-enrichment programs, tutoring, and socially therapeutic counseling programs for empowerment in education. The goal of these programs is to help these children develop the emotional resilience and self-reliance skills they need to succeed, to facilitate a less painful transition to adulthood, to complete postsecondary training programs, and to become productive members of society.

Literature Review Summary

Chapter II provided a review of the literature and theoretical frameworks to help identify and discuss limitations in this area. Prior studies have failed to provide clear linkages between integrated theoretical constructs and how they mediate the academic-achievement outcomes of adult alumni of foster care. Very few studies have focused
specifically on the effects of foster-care emancipation prior to graduation from high school on subsequent educational achievement, as measured by total years of schooling and graduation from high school and various levels of postsecondary educational institutions. In fact, historical data from state, regional, federal, and educational sources indicate that only 30,000 of the 300,000 alumni between 18 and 25 who had spent at least one year in the foster-care system enrolled in postsecondary training after experiencing or emancipating from care (Pew Commission on Children in Foster Care, 2004).

There is also a critical gap in the literature regarding the relationships among a secure-attachment style, resilience attributes, stability of foster care, and alumni of foster care’s academic-achievement outcomes (Fraser, 1998; Garmezy, 1991, 1993; Rutter, 1990, 1991, 1993; Sroufe et al., 1999). The literature review also revealed that the foster-care population faces tremendous barriers in the transition to adulthood, with a lack of after-care adult services that teach self-reliance and augment secondary educational completion, beyond the Chafee Transitional Independent Living Program (1999). The implications from the literature are that future studies need to focus on the impact of Transitional Independent Living Programs that can facilitate improved secondary and postsecondary educational achievement for children in foster care, especially the 20,000 18 year olds who are emancipated each year without continuing adult support and guidance.

Additionally, research into educational-resiliency protective factors, as they relate to alumni of foster care, lacks a longitudinal framework to track academic-achievement outcomes (Block & Kremen, 1996). Secondary educational attainment and self-reliance competence have been two of the long-established prerequisites for adolescents to
transition into adulthood successfully. In general, young adults who fail to obtain self-reliance competence and proficient educational skills will have extreme difficulties, and are likely to encounter fewer opportunities in today’s competitive global society. There are multiple gaps in critical services that directly impede alumni of foster-care self-reliance transitional outcomes (USGAO, 1999a, 1999b, 2002, 2004). Many alumni of foster care emancipate without sufficient financial resources, housing, clothing, and medical insurance; have mental and physical health complications; and lack supportive networks and education, which further impedes their ability to become self-reliant (USGAO, 1999a, 1999b, 2002, 2004).

There is also a paucity of empirical data on self-reliance outcomes of alumni of foster care (Collins, 2001; Georgiades, 2003). The attachment literature on alumni of foster care fails to document the onset of Reactive Attachment Disorder and how child maltreatment affects adulthood education and self-reliance (American Psychiatric Association, 1994; American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (4th ed. Text rev.), 2000; Lieberman, 2003; Troutman, Ryan, & Cardi, 2000). In addition, educational-resiliency models, psychosocial risk factors, and protective mechanisms have not been correlated with the multiple placements of alumni of foster care who attain postsecondary credentials (Block & Kremen, 1996; Troutman et al.). Researchers and custodial protective-service agencies have failed to develop specific methodological tools to examine the academic-achievement predictors that lead to successful transitions from foster-care placements such as the alumni of foster care who participated in Chafee Transitional Independent Living Programs compared with those who did not (Children Now, 2004; Collins, 2001; Conger & Rebeck, 2001; Garmezy,

Nonetheless, it may be possible for more focused inquiry to explain how such theoretical constructs as developmental delays, attachment types, resiliency, trauma, support networks, psychosocial risk factors, and ecological-developmental models influence academic-achievement outcomes for alumni of foster care. Researchers can do this by employing sound theoretical models, using objective research methods, and using a national data set to improve the reliability and validity of foster-care studies. Therefore, the outcome of this dissertation study was to identify specific emancipation predictors of educational achievement, so that adult alumni of foster care can become self-reliant and successful in their future educational endeavors. In summary, there is sufficient evidence of a need for more focused research on specific factors impacting alumni educational achievement, and on serious shortcomings in the existing research data.

Recommendations

Based on an extensive literature review and identified research limitations and gaps, the author believes that additional research is necessary to improve foster-care alumni adults’ academic-achievement outcomes. Chapter III presents the research methods employed to investigate the relationships among alumni demographics (age, gender, and ethnicity), foster-care placement stability, maltreatment types, and completion of high school with a diploma or a GED before emancipation, and the subsequent educational achievement of alumni of foster care. This dissertation research employs secondary data from the CNFCAS. The research questions and hypotheses were developed after reviewing the limitations in previous foster-care literature and identifying
gaps in the current body of knowledge regarding factors that contribute to adult educational achievement of foster-care alumni.
CHAPTER III
RESEARCH METHODOLOGY

Introduction

This chapter describes the research design used to address the research questions and the hypotheses generated from the literature regarding educational achievement of foster-care alumni as adults. The methodology employed in this study is quantitative analysis, using a nonexperimental, exploratory (comparative) and explanatory (correlational) design to analyze an existing secondary longitudinal dataset. The essential purpose of any correlational research is to determine the relationships among two (or more) variables, and if these are found to be significant, to establish the trajectory and the extent of relationships.

To facilitate this dialogue, the present dissertation research employed secondary data from the CNFCAS. A substantial body of literature shows that alumni of foster care are considered to be hard to reach or a “hidden population” and many studies have been limited to shorter time frames. The available data set provides an opportunity to examine the educational outcomes of a population of 1,582 alumni of foster care over a 22-year time period. Furthermore, the research questions and hypotheses presented below were developed as refinements from previous foster-care literature and studies, based on the need to further investigate the predictors of educational achievement for foster-care alumni adults. This chapter is comprised of the following main sections: research questions and hypotheses; population; data-collection procedure, participant sample selection, methods of data analysis, evaluation of research methods, limitations, and summary of the methodology.
Research Questions/Hypotheses

To address the limitations in the prior foster-care research data, the dissertation study addressed the following four research questions:

1. Does graduating with a high school diploma or obtaining a GED prior to emancipation from foster care significantly impact the subsequent educational achievement of foster-care alumni?

2. How do basic demographic attributes (age, ethnicity, and gender) influence foster-care alumni adult academic-achievement outcomes?

3. How do child maltreatment and number of foster-care placements influence adult educational achievement of foster-care alumni?

4. How do the number of secondary-school transfers influence adult educational achievement of foster-care alumni?

All four research questions are based on prior longitudinal retrospective research conducted by the CNFCAS (Pecora et al., 2006). The Coprincipal Investigators included Pecora, Downs, Kessler, and Heeringa. In addition, Williams served as the study coordinator along with the project staff which included Judd, Herrick, Huripi, Morello, and O'Brien.

The primary hypotheses tested in this study are the following:

1. H1: There will be a significant difference in educational achievement between foster-care alumni who completed high school prior to emancipation and foster-care alumni who did not complete high school prior to emancipation as measured by the total years of schooling, with foster-care alumni who completed high school prior to emancipation
having higher postsecondary educational achievement than alumni who completed high school requirements after emancipation.

2. H2: There will be a significant difference in educational achievement relative to ethnicity among foster-care alumni, with White foster care alumni having higher educational achievement than alumni of color.

3. H3: There will be a significant difference in educational achievement relative to gender among foster-care alumni with female foster-care alumni having higher educational achievement than male alumni.

4. H4: Foster-care alumni who entered foster care at a younger age (5 or younger, 6–11) will have significantly higher educational achievement than those who entered foster care at an older age (12 or older).

5. H5: There will be a significant difference between educational achievement relative to number of different placements, categorized as low (4 or less), medium (5–8) and high (9 or more) while in foster care, with alumni experiencing multiple placements having lower levels of educational achievement than those with fewer placements.

6. H6 There will be a significant difference in educational achievement relative to experience of maltreatment (sexual, physical, or emotional abuse), with foster-care alumni experiencing abuse having lower educational achievement than alumni who were not abused.

7. H7: There will be a significant relationship between number of different school transfers while in foster care and adult-achievement outcomes, with
alumni experiencing multiple school transfers having lower levels of educational achievement that those with fewer transfers.

Population and Sample

Population

The target population in this study was American foster-care alumni adults who have attained their majority at the age of 20 years old. According to the Foster Care Alumni of America (Pecora et al., 2006), there are over 12 million foster-care adult alumni nationwide, with more than half a million children currently in foster care in the United States, but there is a paucity of data regarding the various predictors of academic-achievement outcomes following their emancipation. Participants in this study were a subpopulation of the CNFCAS, an examination of alumni served by Casey Family Programs (1996), a privately operating foundation. Included in the original study were 1,582 alumni who received therapeutic services in 23 Casey field offices between 1966 and 1998. These include field offices in Arizona, California, Hawaii, Idaho, Louisiana, Montana, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Washington, and Wyoming. To be included in the CNFCAS, alumni had to have been (a) placed with a Casey foster family for 12 consecutive months or more; and (b) discharged from foster care for at least 12 months prior to the interview (see Appendix A). This study is limited to a population of 1,582 foster alumni adults from the CNFCAS who could be contacted, and to a subset of 1,068 alumni whose case records were reviewed and who were interviewed.

This study reviewed 1,582 case records and 1,068 survey questionnaires of foster care alumni. Therefore, 1,582 foster-care alumni represented the total target sample for
this secondary-data study. The subjects were adults who were, as adolescents, served by a Casey foster-care agency in one of 23 communities in 13 states between 1966 and 1998. Compared to the national foster-care population, the Casey alumni surveyed were more likely to be female, were older (in keeping with the purpose of a follow-up tracking survey), and had a lower percentage of non-White people among the alumni (35% versus more than 50%).

The CNFCAS did generate some new data regarding predictors of foster-care alumni’s academic-achievement outcomes. One of the strengths of CNFCAS was the data regarding the number of foster-care alumni who completed high school requirements to earn a diploma or a GED while in foster care, which can be correlated with the overall years of higher education completed (adult educational achievement). These data formed the basis for a continuing evaluation of key predictors of positive educational achievement among alumni of foster care. The CNFCAS found that their alumni of foster care displayed the following specific academic-achievement outcomes:

1. 72.5% received a high school diploma or GED before leaving foster care
2. 86% completed high school (including GED) either during or after care
3. 87.8% of those over 25 years had completed high school
4. 18.6% of alumni received a GED certificate, more than in the general population.

Sample Selection

In the original CNFCAS there were 1,609 alumni case records reviewed; after data weighting was performed this number was adjusted to 1,582, to remove those original alumni who were deceased, institutionalized, or in prison. Please note that the
sample statistics used in this dissertation study varied slightly from those cited in the early Casey national study reports and articles because the current Casey alumni data set was weighted using case-record data to adjust the outcomes data for those alumni who could not be interviewed. Thus, the revised sample of case-record reviews is 1,582 alumni (originally 1,609) and interviews were completed for 1,068 alumni (originally 1,087; see Appendix A). Therefore, a final sample of 1,582 participants participated in the study by case-record reviews and a subset also consented to be interviewed to aid in the collection of additional data. Some of the key demographic data included the following: gender (54.6% female); alumni of color (35% of population); and age at time of interview (average of 30.5 years), ranging between 20 and 51 years old.

Based on the above review of the data set, the CNFCAS sample is not closely representative of the general foster-care population. Fifty-six percent of the current foster care population (510,000) is of color (African American, Latino/Hispanic, Asian, and Native/Indigenous American using FFY 2006 data from the Federal Adoption and Foster Care Analysis and Reporting System statistics). The number of African Americans residing in the general population is only 12%, while 34% of children placed in the national foster-care system are African American (see Appendix A).

Data Collection Procedures

This study used longitudinal retrospective data drawn from a sample of 1,068 foster-care alumni adults previously used in the CNFCAS. Information was obtained from case-record reviews in the Midwestern region of the United States, and direct interviews with alumni. This study is limited to the measurement domains and variables used in the CNFCAS. Case records provided demographics and education data, as well as
risk factors (information that placed alumni at risk for long-term problems; e.g., child maltreatment by the birth family), and foster-care experiences (e.g., number of placements and length of time in care). In the original CNFCAS data collection, trained reviewers used a structured form, and were required to achieve a satisfactory level of agreement from a highly trained staff member. To maintain reliability of reviews, approximately 10% of all records were randomly selected for a second reading by a gold-standard rater (a highly trained staff member involved with data management, coding, and training for the reviews). Cohen’s kappa coefficient is a statistical evaluation of interrater agreement, indicating whether two raters will code data identically on a case to a degree beyond what is expected by chance. A random sample of 40 case records was selected for an interrater reliability check. Each record was reviewed twice: once by a regular and once by a “gold standard” reviewer (of which there were four). Only variables that had acceptable interrater reliability (Cohen’s Kappa greater than or equal to .70) were retained (Personal communication, P. J. Pecora, August 23, 2008).

Variables and Instrumentation: Definitions of Independent Variable Terms and Coding Schemes

Theoretical definitions of the variables found in this study are based on commonly used meanings in the foster-care and theoretical literature reviewed during the development of this study. Operational definitions of variables were formulated by the specific means by which they were observed and measured (Best & Kahn, 2003). Lastly, each variable was assigned a numerical value (e.g., coded) to enable analytical examination using the Statistical Program for the Social Sciences (SPSS).
Operational Definitions

Dependent Variable

Educational Attainment. The number of years of secondary and postsecondary completion.

Independent Variables

Ethnicity. Identity with or membership in a particular racial, national, or cultural group and observance of that group's customs, beliefs, and language (Pecora et al., 2006). The categories of ethnic identity recognized by the U.S. federal government for the purposes of employment and other statistics were used. The commonly used categories are: "(1) White Non-Hispanic, (2) African American or Black, (3) Hispanic, (4) Asian, (5) Native American or American Indian, with others including, for example, Mexican American or Chicano, (6) Latin American or Latino, and Pacific Islander" (USDHHS, 2006b, p. 3). Each variable was assigned a numerical value (e.g., coded) as follows: Black as 1; Native American and others as 2; Hispanic as 3; Asian as 4; White as 5. This hierarchical coding corresponds to the outcomes predicted in the prior research on ethnicity and educational achievement.

American Indian or Alaskan Native. A foster-care alumni adult having origins in any of the original people of North and South America, or who maintain tribal affiliation or community attachment (USDHHS, 2006b, p. 108).

Asian. A foster-care alumni adult having origins in any of the original people of the Far East, Southeast Asia, or the Indian Subcontinent, including for example, Cambodia, China, Japan, Korea, Malaysia, the Philippine Islands, Thailand, and Vietnam.
Black or African American. A foster-care alumni adult having origins in any of the Black racial groups of Africa.


The sexual identity (male or female) of the foster-care alumni participant (Pecora at el., 2006).


The age of the foster-care alumni participant (Pecora at el., 2006).

Maltreatment Types

Maltreatment.

An act or failure by a parent, caregiver, or other person defined under state law that results in emotional or physical abuse, neglect, medical neglect, sexual abuse, psychological or emotional abuse, or an act or failure to act which presents an imminent risk of serious harm to a child. (USDHHS, 2006b)

Neglect. “Failure by the caretaker to provide needed, age appropriate care although financially able to do so or offered financial or other means to do so” (USDHHS, 2006b).

[A] type of maltreatment that refers to the failure to provide needed age-appropriate care,” such as shelter, food, clothing, education, supervision, medical care, and other basic necessities needed for development of physical, intellectual, and emotional capacities. Unlike physical and sexual abuse, neglect is usually typified by an ongoing pattern of inadequate care and is readily observed by
individuals in close contact with the child. Physicians, nurses, day care personnel, relatives and neighbors are frequently the ones to suspect and report neglected infants, toddlers and preschool children. (USDHHS, 2006b, p. 114)

*Physical abuse.* "Type of maltreatment that refers to physical acts that caused or could cause physical injury to a child" (USDHHS, 2006b, p. 114).

"Types of maltreatment that cause conduct, cognitive, affective, or other mental disorders" (USDHHS, 2006b, p. 114).

*Physical neglect.*
accounts for the majority of cases of maltreatment. The definition includes the refusal of or extreme delay in seeking necessary health care, child abandonment, inadequate supervision, rejection of a child leading to expulsion from the home, and failing to adequately provide for the child’s safety and physical and emotional needs. Physical neglect can severely impact a child’s development by causing failure to thrive, malnutrition; serious illnesses; physical harm in the form of cuts, bruises and burns due to lack of supervision and a lifetime of low self-esteem. (USDHHS, 2006b, p. 114; see Appendix C)

*Sexual abuse.*
A type of maltreatment that refers to the involvement of the child in sexual activity to provide sexual gratification or financial benefit to the perpetrator, including contracts for sexual purposes, molestation, statutory rape, prostitution, pornography, exposure, incest, or other sexually exploitative activities. (USDHHS, 2006b, p. 114).
Data Analysis

The CNFCAS data set tracked educational outcomes for alumni of a population drawn from the CNFCAS. The study focused on the subset of foster-care alumni who had not completed high school at the time of leaving foster care, comparing them with those who had. The alumni outcomes range from failure to complete high school (dropout), completion of a GED, and attainment of a high school diploma, to completion of a vocational certificate, an associates’ degree (junior college A.A.), a 4-year college or university degree (BA, BS), and graduate school (leading to master’s degrees or doctoral degrees). See Appendix B for a variable coding chart.

The current study was limited to the variable domains that were previously collected in the CNFCAS and employed a secondary data analysis of 1,068 subjects from CNFCAS, noting their highest level of educational achievement after leaving care. The CNFCAS data are analyzed using SPSS. T-tests of independent samples, ANOVA analysis, chi-square analysis, and hierarchical multiple regression analyses were conducted. See Appendix B for a variable coding chart.

The methods of data analysis involved the following statistical tests being applied to the CNFCAS longitudinal data set:

In order to compare the mean educational achievement of those who completed high school before leaving foster care with those who did not, t-tests of independent samples were used. In order to test the hypothesis that education attained by the two groups differed significantly, a two-tailed t-test was used. A significance threshold ($p$-value) of $\leq .05$ determined whether the education of the two groups differed more than
would be expected by chance (Babbie, 2001). See Appendix B for a variable coding chart.

The first research question examines whether graduating with a high school diploma or obtaining a GED prior to emancipation from foster care significantly impacts the subsequent educational achievement of foster-care alumni. To compare the mean educational achievement of selected groups in this population, a t-test compared alumni by gender; bivariate correlations measured the continuous variables of age and number of foster-care placements, and ANOVA tests compared alumni by ethnicity and type of child maltreatment suffered prior to foster-care placement. Furthermore, chi-square analysis was used to examine the relationship between the demographics (gender and ethnicity), and the type of abuse categories. The chi-square is a nonparametric conjectural statistic used to assess interrelationship between factors that are ascertained on a nominal scale separately (Babbie, 2001). Additionally, bivariate correlations were examined between continuous variables (age at interview, number of foster-care placements, type of abuse leading to placement) and adult educational achievement. The purpose of a univariate strategy is to employ a statistical analysis in which several independent measures are calculated and tested separately (Babbie).

Each maltreatment category represented a discrete group: no child maltreatment, neglect or emotional abuse, physical abuse, sexual abuse, and multiple abuse patterns. See Appendix B for a variable coding chart.

Multiple regression analysis was used to determine if any variables predicted alumni educational attainment/academic achievement based on the six independent variables, with the categorical variables of ethnicity and type of maltreatment ranked in
order based on the expected direction. Multiple regression analysis examined
combinations of factors to help define the influence of predictors of educational
achievement, as measured by level of education ultimately attained, and thus to help
quantify the complex relationships between the independent variables and the dependent
variable of educational achievement. Most previous research used hierarchical entry with
demographics as core variables, followed by the in-care experience variables as key
developmental inputs. Multiple regression analysis can be used to determine the relative
influence of more than one explanatory variable or predictor on a dependent variable
(Babbie, 2001).

Data Analysis Summary

These analyses were conducted to determine the relationship between high
school/GED completion for alumni of foster care while in care and subsequent
educational achievement. Specifically, for each dichotomous education outcome listed
below, a separate analysis was conducted to determine the relationship between high
school/GED completion while in care and subsequent educational achievement,
controlling for (a) demographics: gender, ethnicity, and age; (b) the number of different
placements while in foster care; and (c) type of child maltreatment suffered prior to
foster-care placement (as one categorical variable that features five variables—no child
maltreatment, sexual abuse only, physical only, neglect only, or emotional abuse only,
and multiple abuse patterns). Educational achievement includes a measure of the
cumulative years of completion.
Evaluation of Research Methods

In this section, both the internal- and external-validity strengths and weaknesses of this study are considered. Internal validity is determined by the scope a study investigates (Babbie, 2001). External validity is the extent to which the results can be generalized to other populations and settings, based on representativeness of the population and sample (Babbie). The quantitative research design has higher internal validity than a qualitative design relying only on opinions or self-reported information. The quantitative design, using a nonexperimental, exploratory (comparative) and explanatory (correlational) research method, is appropriate because all pertinent variables can be statistically analyzed. Data-analysis procedures such as descriptive statistics, coefficients alphas, and factor analysis allow for weak items to be removed prior to testing the study hypotheses. The final sample of 1,068 alumni of foster care is sufficient to conduct an analysis of the larger Casey population, and any outliers or effects of the heterogeneous population are accounted for in the regression analysis.

There are several threats to inference that could compromise the external validity of a study. Randomization in a larger population would increase the external validity of a research design by increasing the representativeness of the sample group (Babbie, 2001), perhaps allowing for generalizability of the results to the national foster-care population in this case. As has been noted above, however, the unique Casey alumni demographics and the nonrandom convenience sample taken of only those who agreed to be surveyed and interviewed means that the study population is not truly representative of the national population.
Furthermore, the set of variables employed in the present study, although generated from the review of the foster-care literature, is limited to those variables present in the Casey database. This set of variables is therefore not exhaustive, and may exclude other explanatory variables. There is always the possibility of some alternative explanations for alumni academic-achievement outcomes, including external factors such as income, location, and educational opportunities, or uncontrollable weaknesses in the Casey research procedures, such as poorly trained or biased investigators, or errors in the case records and other documents.

The researcher believes that the Casey data set and research procedures were robust and reproducible. They had internal validity in that they measured what they purported to measure, and reliability in that they used longitudinal measures taken over more than 2 decades. Despite the limitations on the ability to infer causal relationships between the selected factors and educational achievement later in life, the internal validity of the research design is sufficient to allow some tentative inferences regarding strong positive correlations and possible causal relationships among types of abuse, number of placements and high school graduation while in foster care, and adult alumni educational achievement.

Ethical Considerations: Institutional Review Board (IRB) Procedures

The researcher has obtained written consent from Pecora, Principal Researcher of the CNFCAS, to use secondary data, without names or other personal identifiers, pending approval by Lynn University’s IRB.

CNFCAS employed the following rigorous safeguards to protect alumni confidentiality, safety of records, and anonymity (Pecora et al, 2003). Interviewers were
instructed to perform the interview in private so that another person in the household could not overhear responses (Pecora et al., 2003). If privacy could not be obtained in the respondent’s home, the interview was conducted outside the home at a neutral site. If necessary, the project paid for transportation to the site. All respondents were required to sign a consent form prior to the administration of the interview (Pecora et al., 2003). This consent form reiterated the Institute’s promise of confidentiality, and guaranteed the payment of the respondents’ incentives. To guard against the possibility of disclosure in public data, researchers did not release data until all potential linkages to respondent identity were removed (Pecora et al., 2003). These procedures included, but were not limited to, deleting any reference to respondent names, addresses, or telephone numbers. Respondent recontact information was separated from the surveyed responses. Names attached to identification numbers were kept in secure files available only to the principal researcher and a small number of project staff. Access to such files were strictly regulated, and only authorized staff were required to sign an Institute Pledge of Confidentiality, promising to respect the confidentiality of respondent information (Pecora & Kirk, 1999; Pecora et al., 2003).

The present study examined secondary data only, and performed no new research or tests with human subjects. The study adhered to the requirements of Title 45, Code of Federal Regulations §46.101(b)(5), which exempts research and demonstration projects that are conducted by or subject to the approval of department or agency heads, and that are designed to study, evaluate, or otherwise examine public benefit or service programs. The current study was subject to approval by the Lynn University IRB and warranted only an Exempt Review process for approval. Due to the strict laws of confidentiality
regarding foster-care program data, the CFNCAS data set could only be fully accessed after the researcher had received Lynn University IRB approval to conduct the study. As noted above, no personal identifiers or markers were included in the CNFCAS data set that were made available to the student, and no attempt to link the CNFCAS records or interviews with specific individuals was made. In conclusion, the present study used only existing secondary data, posing no risk to confidentiality or harm to human subjects (see Appendix B).

Limitations of the Study

Most research studies have some limitations that may adversely impact the scope and interpretation of the findings, and the extent of generalizability to that larger population. This research study is constrained by the following limitations and findings.

The study was limited to the investigation of the correlations among the independent variables (status at emancipation, gender, ethnicity, age, number of placements, length of stay, and the hierarchical variable type of abuse) and the dependent variable of adult educational achievement. However, it is recognized that foster-care alumni educational achievement may also be influenced by factors not measured, such as socioeconomic status, racial discrimination, and quality of foster-care placements. Thus, it is possible that subjects' educational achievement has been adversely impacted by other intervening variables, and that causal relationships should not be attributed to individual cases of adult educational achievement.

The data analyzed are a subset of the Casey data and were not randomized or deemed to be closely representative of the entire United States foster-care population. The study relied on a single set of existing secondary data; it is subject to all the
limitations of reliability and validity of that type of data set. The data were not collected from the entire United States foster-care population, but only from selected groups in the Midwest and Western United States, and thus the results of the current study may not be generalizable to that larger population. These limitations are offset by the fact that the Casey alumni studies were widely dispersed, ethnically diverse, and reasonably representative of foster-care alumni adults living in the U.S. To the extent that the present study draws on interview responses and self-reported information, its findings are not quantitatively verifiable, and are subject to selective interviewee recall or interviewee bias and other common limitations inherent in qualitative research. Recognizing these limitations, the researcher does not represent the research design or data outputs of the study as being universally valid or generalizable to larger populations.

The response rate from the data producing sample was not 100%, but 73.4%. Using the standards of the American Association for Public Opinion Research (2000), the minimum response rate was calculated by first removing the ineligible subjects, including alumni deceased (61), incarcerated (55), and institutionalized (11), from the 1,582 alumni finally meeting the study criteria. Therefore, the response rate was the ratio of the alumni interviewed (1,068) to alumni eligible and actually contacted (1,455), or 73.4%. The original researchers believed that this response rate was fairly high compared to most foster care follow-up studies (Williams, McWilliams, Mainieri, Pecora, & La Belle, 2006).

Comparisons between Casey and the larger population of children served in foster care in state agencies should be interpreted with caution because Casey field offices were not operating under the workload pressures of achieving a permanent placement in the
same way that the public-agency staffs were. Because the children referred to Casey were those that the state agency and juvenile court determined were unable or unwilling to be adopted or be reunified with their parents, Casey staff had the goal of stabilizing and preserving the placement. However, it is important to mention the implication of services that alumni received from Casey’s private foster-care homes. These therapeutic services are more intensive compared to the services rendered to alumni by various nationwide public child-welfare agencies. Accordingly, the practice modalities that were employed by Casey may have contributed to alumni admirable self-sufficiency and academic-achievement outcomes (see Fanshel, Finch, & Grundy, 1990)

The CNFCAS focal point was on foster-care alumni who had spent one year or more in out-of-home placement as adolescents between 1966 and 1988. Many of these youth tended to stay in care for longer periods of time, or enter care as adolescents (e.g., at age 16), and to emancipate from foster care in both public and private systems. This was a study of a group of alumni who spent a year or more in care as adolescents; as a result, participants do not represent the full spectrum of children served in foster care. Lastly, educational achievement is an ongoing process and there is the possibility that some of the data concerning the educational achievements of some participants may be unavailable. Some alumni may have returned to school in later adulthood, for example, or dropped out before completion of a higher educational program and not mentioned that fact to an interviewer.

Summary

Using a nonexperimental, secondary-data research exploratory and explanatory design, the present study examined a secondary dataset consisting of case records and
interviews of 1,068 foster-care alumni from the CNFCAS. The purpose of the study was to determine whether foster-care clients who remained in foster care until the completion of their high school education achieved higher educational attainment than those who were emancipated prior to high school completion. Other hypothesized predictors of educational achievement also were investigated.

It was hypothesized that alumni with postemancipation diplomas or GEDs experienced less success in higher education than those alumni who graduated and received a diploma at or around 18 years of age, while still under foster care. If confirmed, this finding would support the implementation of the Fostering Connections to Success and Increasing Adoptions Act (H.R. 6893, 2008), federal legislation that specifically targets foster-care youth between the ages of 18 and 21, and which extends support to these individuals in the transition to higher education, employment, and housing as young adults. The potential significance of extending benefits to children in foster care currently facing emancipation at age 18 without high school diplomas or adequate preparation for adult life is enormous not only for the alumni of foster care but for society as a whole.
CHAPTER IV
RESULTS

Description of the Sample

The sample consisted of 825 males (52.1%) and 757 females (47.9%). The majority of participants (58.6%, \( N = 926 \)) received their high school diplomas or GEDs while in foster care and 655 (41.4%) did not receive their high school diplomas or GEDs while in care. Information about ethnicity was obtained from alumni when they were interviewed. Of the 1,068 alumni interviewed, 10.6% \( (N = 113) \) identified themselves as Hispanic or Latino, 11.5% \( (N = 123) \) were non-Hispanic Black, 24.2% \( (N = 258) \) were “non-Hispanic other,” and 53.7% \( (N = 574) \) were non-Hispanic White. The age of foster-care alumni at the time of interview ranged from 20 to 51 years \( (M = 30.5, SD = 6.3) \). Age at the time of interview is presented in Table 4-1.

Table 4-1

<table>
<thead>
<tr>
<th>Age at time of interview</th>
<th>N</th>
<th>%</th>
<th>Mean years of education</th>
<th>Median</th>
<th>Mode</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-25</td>
<td>264</td>
<td>24.7%</td>
<td>11.99</td>
<td>12.00</td>
<td>12.00</td>
<td>1.55</td>
</tr>
<tr>
<td>26-29</td>
<td>255</td>
<td>23.9%</td>
<td>12.91</td>
<td>13.00</td>
<td>12.00</td>
<td>1.94</td>
</tr>
<tr>
<td>30-34</td>
<td>266</td>
<td>24.9%</td>
<td>13.26</td>
<td>13.00</td>
<td>12.00</td>
<td>1.98</td>
</tr>
<tr>
<td>35-49</td>
<td>283</td>
<td>26.5%</td>
<td>12.69</td>
<td>13.00</td>
<td>12.00</td>
<td>1.99</td>
</tr>
</tbody>
</table>

Dependent Variable: Educational Attainment

Educational attainment ranged from 6 to 21 years \( (M = 12.71, SD = 1.93) \). Fifty-nine percent of alumni had either a high school diploma, GED, or a vocational/technical certificate. Table 4-2 provides the measures of central tendency for educational attainment.
Educational attainment was measured by years of schooling prior to 1992 (U.S. Census Bureau, 2004). The U.S. Census Bureau currently asks for educational attainment by the highest grade or degree completed. For adults aged 30–34 in the general population, 87.6% have completed high school or additional years of education. Similarly, 87.6% of foster-care alumni had high school diplomas/GEDs or additional years of schooling. Figure 4-1 provides educational attainment by category and years of education among foster-care alumni.

A one-way ANOVA revealed a significant difference in subsequent educational attainment among alumni with no high school diploma or GED, alumni with GEDs, and alumni with high school diplomas, $F(2, 1065) = 221.9, p = .000$. A Least Squares Different (LSD) Post Hoc Comparison presented in Table 4-3 indicates that significant differences exist between no GED/High School Diploma and High School Diploma, No GED/ High School Diploma and GED, and High School Diploma and GED. Figure 4-1 provides an illustration of these disparities.
Figure 4-1. Educational attainment.

<table>
<thead>
<tr>
<th>(I) DV: obtained HS diploma or GED</th>
<th>(J) DV: obtained HS diploma or GED</th>
<th>Mean difference (I-J)</th>
<th>Std. error</th>
<th>Sig.</th>
<th>95% Confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>No GED or high school diploma</td>
<td>High school diploma</td>
<td>-2.873*</td>
<td>.145</td>
<td>.000</td>
<td>-3.16 -2.59</td>
</tr>
<tr>
<td>GED</td>
<td>GED</td>
<td>-1.440*</td>
<td>.175</td>
<td>.000</td>
<td>-1.78 -1.10</td>
</tr>
<tr>
<td>High school diploma</td>
<td>No GED or high school diploma</td>
<td>2.873*</td>
<td>.145</td>
<td>.000</td>
<td>2.59 3.16</td>
</tr>
<tr>
<td>GED</td>
<td>GED</td>
<td>1.433*</td>
<td>.130</td>
<td>.000</td>
<td>1.18 1.69</td>
</tr>
<tr>
<td>GED</td>
<td>No GED or high school diploma</td>
<td>1.440*</td>
<td>.175</td>
<td>.000</td>
<td>1.10 1.78</td>
</tr>
<tr>
<td>High school diploma</td>
<td>No GED or high school diploma</td>
<td>-1.433*</td>
<td>.130</td>
<td>.000</td>
<td>-1.69 -1.18</td>
</tr>
</tbody>
</table>

Note. * The mean difference is significant at the .05 level; GED = general education diploma; DV = dependent variable.
Predictor Variables

There were seven predictor variables in this study: (a) gender, (b) high school completion prior to emancipation, (c) ethnicity, (d) age entering foster care, (e) number of foster-care placements, (f) number of school changes, and (g) maltreatment.

The majority of applicants were between the ages of 6 and 11 when they entered foster care. Table 4-4 provides a frequency distribution of age entering foster care in three age ranges; 0–5 years of age, 6–11, and 12 and older. As previously mentioned, these data were provided in this categorical format in the data set.

Table 4-4

<table>
<thead>
<tr>
<th>Age entered foster-care system</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 5</td>
<td>575</td>
<td>36.3</td>
</tr>
<tr>
<td>6 to 11</td>
<td>599</td>
<td>37.9</td>
</tr>
<tr>
<td>12 &amp; older</td>
<td>408</td>
<td>25.8</td>
</tr>
<tr>
<td>Total</td>
<td>1582</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Most alumni had 5 to 8 foster-care placements. Table 4-5 provides a frequency distribution of the number of foster-care placements while in the child welfare system in three categories; low (4 or less), medium (5 to 8), and high (9 or more).

Table 4-5

<table>
<thead>
<tr>
<th>Number of foster care placements</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (4 or less)</td>
<td>489</td>
<td>30.9</td>
</tr>
<tr>
<td>Medium (5 to 8)</td>
<td>593</td>
<td>37.5</td>
</tr>
<tr>
<td>High (9 or more)</td>
<td>500</td>
<td>31.6</td>
</tr>
<tr>
<td>Total</td>
<td>1582</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The majority of alumni had 6 or fewer school transfers. Table 4-6 provides a frequency distribution of number of school changes while in the child-welfare system in three categories; low (6 or less), medium (7 to 9), and high (10 or more).

Table 4-6

<table>
<thead>
<tr>
<th>Number of School Changes</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (6 or less)</td>
<td>431</td>
<td>40.4</td>
</tr>
<tr>
<td>Medium (7 to 9)</td>
<td>348</td>
<td>32.6</td>
</tr>
<tr>
<td>High (10 or more)</td>
<td>289</td>
<td>27.1</td>
</tr>
<tr>
<td>Total</td>
<td>1068</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>514</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1582</td>
<td></td>
</tr>
</tbody>
</table>

The majority of participants (56.7%, \(N = 896\)) experienced multiple types of abuse by their birth families before or during care, whereas 19.8% \((N = 314)\) experienced neglect or emotional abuse. Table 4-7 summarizes the maltreatment by birth family before or during care.

Table 4-7

<table>
<thead>
<tr>
<th>Maltreatment by Birth Family Before or During Care</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>No maltreatment</td>
<td>145</td>
<td>9.2</td>
</tr>
<tr>
<td>Sexual only</td>
<td>79</td>
<td>5.0</td>
</tr>
<tr>
<td>Sexual and other</td>
<td>593</td>
<td>37.5</td>
</tr>
<tr>
<td>Physical only</td>
<td>148</td>
<td>9.4</td>
</tr>
<tr>
<td>Neglect only</td>
<td>238</td>
<td>15.0</td>
</tr>
<tr>
<td>Physical and neglect</td>
<td>303</td>
<td>19.2</td>
</tr>
<tr>
<td>Emotional</td>
<td>76</td>
<td>4.8</td>
</tr>
<tr>
<td>Total</td>
<td>1582</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Research Questions

In order to examine the relationships between the timing of graduation from high school and subsequent educational attainment, bivariate correlations between all independent variables and the dependent variable were generated. Bivariate correlations examine linear relationships between two variables. They create a foundation for entering all the variables together in a multiple regression equation, to observe the relative influence of each variable while considering the influence of other variables. A correlation matrix is presented in Table 4-8.

**Research Question 1: High School Completion Prior to Emancipation**

Does graduating with a high school diploma or obtaining a GED prior to emancipation from foster care significantly impact the subsequent educational achievement of foster-care alumni?

Graduating with a high school diploma or obtaining a GED prior to emancipation from foster care was significantly related to educational achievement, \( r = .44, N = 1067, p = .000, \) one-tailed.

**Research Question 2: Demographic Attributes**

How do basic demographic attributes (gender, ethnicity, and age) influence foster-care-alumni adult educational-achievement outcomes?

Gender was significantly related to educational achievement, \( r = .06, N = 1068, p = .03, \) one-tailed. Ethnicity was not significantly related to educational achievement, \( r = .03, N = 697, p = .21, \) one-tailed. Age entering foster care was significantly related to educational achievement, \( r = .11, N = 1068, p = .000, \) one-tailed.
Table 4-8

**Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Years of education</th>
<th>Received HS diploma or GED while in care?</th>
<th>Gender</th>
<th>Race/ethnicity</th>
<th>Age entered foster care</th>
<th>Number of school changes, trichotomized</th>
<th>Maltreatment by birth family before or during care</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Years of education</strong></td>
<td>Pearson correlation</td>
<td>1</td>
<td>.442**</td>
<td>-.058*</td>
<td>.030</td>
<td>.106**</td>
<td>-.126**</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td>.000</td>
<td>.030</td>
<td>.213</td>
<td>.000</td>
<td>.000</td>
<td>.071</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>1068</td>
<td>1067</td>
<td>1068</td>
<td>697</td>
<td>1068</td>
<td>1068</td>
</tr>
<tr>
<td><strong>Received HS diploma or GED while in care?</strong></td>
<td>Pearson correlation</td>
<td>.442**</td>
<td>1</td>
<td>-.070**</td>
<td>.111**</td>
<td>.129**</td>
<td>-.063**</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td>.000</td>
<td>.003</td>
<td>.002</td>
<td>.000</td>
<td>.006</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>1067</td>
<td>1581</td>
<td>1581</td>
<td>696</td>
<td>1581</td>
<td>1067</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Pearson correlation</td>
<td>-.058*</td>
<td>-.070**</td>
<td>1</td>
<td>.032</td>
<td>-.107**</td>
<td>.032</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td>.030</td>
<td>.003</td>
<td>.199</td>
<td>.000</td>
<td>.099</td>
<td>.067</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>1068</td>
<td>1581</td>
<td>1582</td>
<td>697</td>
<td>1582</td>
<td>1068</td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td>Pearson correlation</td>
<td>.030</td>
<td>.111**</td>
<td>.032</td>
<td>1</td>
<td>.113**</td>
<td>.075*</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td>.213</td>
<td>.002</td>
<td>.199</td>
<td>.001</td>
<td>.024</td>
<td>.002</td>
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<td>697</td>
<td>696</td>
<td>697</td>
<td>697</td>
<td>697</td>
<td>697</td>
</tr>
<tr>
<td><strong>Age entered foster care</strong></td>
<td>Pearson correlation</td>
<td>.106**</td>
<td>.129**</td>
<td>-.107**</td>
<td>.113**</td>
<td>1</td>
<td>-.229**</td>
</tr>
<tr>
<td></td>
<td>Sig. (1-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.001</td>
<td>.000</td>
<td>.045</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>N</td>
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<td>1581</td>
<td>1582</td>
<td>697</td>
<td>1582</td>
<td>1068</td>
</tr>
<tr>
<td>Number of placements</td>
<td>Pearson correlation</td>
<td>Years of education</td>
<td>Received HS diploma or GED while in care?</td>
<td>Gender</td>
<td>Race/ethnicity</td>
<td>Age entered foster care</td>
<td>Number of placements</td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------</td>
<td>--------------------</td>
<td>------------------------------------------</td>
<td>--------</td>
<td>---------------</td>
<td>------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-0.126**</td>
<td>-0.063**</td>
<td>0.032</td>
<td>0.075*</td>
<td>-0.229**</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td>0.000</td>
<td>0.006</td>
<td>0.099</td>
<td>0.024</td>
<td>0.000</td>
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<tr>
<td>N</td>
<td>1068</td>
<td>1581</td>
<td>1582</td>
<td>697</td>
<td>1582</td>
<td>1582</td>
<td>1068</td>
</tr>
<tr>
<td>Number of school changes, trichotomized</td>
<td>Pearson correlation</td>
<td></td>
<td>-0.045</td>
<td>-0.094**</td>
<td>0.046</td>
<td>0.111**</td>
<td>0.052*</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td>0.071</td>
<td>0.001</td>
<td>0.067</td>
<td>0.002</td>
<td>0.045</td>
</tr>
<tr>
<td>N</td>
<td>1068</td>
<td>1067</td>
<td>1068</td>
<td>697</td>
<td>1068</td>
<td>1068</td>
<td>1068</td>
</tr>
<tr>
<td>Maltreatment by birth family before or during care</td>
<td>Pearson correlation</td>
<td></td>
<td>-0.015</td>
<td>-0.019</td>
<td>0.208**</td>
<td>-0.040</td>
<td>-0.057*</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td></td>
<td></td>
<td>0.308</td>
<td>0.220</td>
<td>0.000</td>
<td>0.146</td>
<td>0.011</td>
</tr>
<tr>
<td>N</td>
<td>1068</td>
<td>1581</td>
<td>1582</td>
<td>697</td>
<td>1582</td>
<td>1582</td>
<td>1068</td>
</tr>
</tbody>
</table>

Note. * Correlation is significant at the 0.05 level (1-tailed); ** Correlation is significant at the 0.01 level (1-tailed); GED = general education diploma; HS = high school.
Research Question 3: Child Maltreatment and Number of Foster Care Placements

How do child maltreatment and number of foster-care placements influence adult educational achievement of foster-care alumni?

Child maltreatment was not significantly related to educational achievement, 
\[ r = .02, N = 1068, p = .31, \text{ one-tailed.} \]
The number of foster-care placements was significantly, inversely related to educational achievement, 
\[ r = -.13, N = 1068, p = .000, \text{ one-tailed.} \]

Research Question 4: Child Maltreatment and School Transfers

Does having experienced some form of child maltreatment before or during foster care and number of school transfers influence adult educational achievement of foster-care alumni?

Child maltreatment was not significantly related to educational achievement, 
\[ r = .02, N = 1068, p = .31, \text{ one-tailed.} \]
The number of school changes was not significantly related to educational achievement, 
\[ r = -.05, N = 1068, p = .07, \text{ one-tailed.} \]

Hypotheses

There were seven hypotheses examined in this study. The hypotheses were based on prior longitudinal retrospective research conducted by the CNFCAS (Pecora et al., 2006). The distribution of data for years of educational achievement was screened for normality. An assumption of t-tests and ANOVAs is that the data are normally distributed. Years of educational achievement for all seven of the independent variables had kurtosis values of -1.59 to +1.59 and skewness values of -.359 to +.631. In SPSS, distributions with kurtosis and skewness values between -2 and +2 approximate
normality. Therefore, years of educational achievement were normally distributed in all seven of the independent variables. Table 4-9 provides the t-test and ANOVA results.

Table 4-9

**T-tests and ANOVA Results**

<table>
<thead>
<tr>
<th>Hyp</th>
<th>Variable</th>
<th>Groupings</th>
<th>Mean years of education</th>
<th>T or F value</th>
<th>Sig.</th>
<th>Lower bound</th>
<th>Upper bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Received HS diploma/ GED while in care</td>
<td>No</td>
<td>11.58</td>
<td>16.080</td>
<td>.000</td>
<td>11.41</td>
<td>11.75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>13.35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ethnicity</td>
<td>Non-Hispanic Black</td>
<td>12.68</td>
<td>-.798</td>
<td>.213</td>
<td>12.33</td>
<td>13.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-Hispanic White</td>
<td>12.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Gender</td>
<td>Female</td>
<td>12.81</td>
<td>-1.880</td>
<td>.030</td>
<td>12.65</td>
<td>12.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>12.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Age entered foster care</td>
<td>0 to 5</td>
<td>12.56</td>
<td>8.550</td>
<td>.000</td>
<td>12.39</td>
<td>12.74</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 to 11</td>
<td>12.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 &amp; Up</td>
<td>13.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Number of foster care placements</td>
<td>Low</td>
<td>13.03</td>
<td>8.760</td>
<td>.000</td>
<td>12.82</td>
<td>13.23</td>
</tr>
<tr>
<td></td>
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<td>Medium</td>
<td>12.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>12.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Maltreatment</td>
<td>No maltreatment</td>
<td>13.15</td>
<td>2.480</td>
<td>.022</td>
<td>12.75</td>
<td>13.56</td>
</tr>
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<td></td>
<td></td>
<td>Sexual</td>
<td>13.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sexual and other</td>
<td>12.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical only</td>
<td>12.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neglect only</td>
<td>12.59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical and neglect</td>
<td>12.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Emotional</td>
<td>13.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Number of school changes</td>
<td>Low</td>
<td>12.71</td>
<td>5.270</td>
<td>.005</td>
<td>12.52</td>
<td>12.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>12.94</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>12.44</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hyp Variable Groupings of education value Sig. bound bound
Mean years T or F Lower Upper
Hyp 8 Ethnicities Hispanic or Latin 12.70 2.470 .061 12.37 13.03
Non-Hispanic Black 12.68 12.33 13.04
Non-Hispanic Other 12.45 12.21 12.68
Non-Hispanic White 12.84 12.68 13.00
Obtained HS diploma or GED No GED or diploma 10.51 6 15
GED 11.95 6 17
HS diploma 13.38 9 21
Completed any education beyond HS No 11.26 6 12
Yes 13.78 6 21
Completed any degree/certificate beyond HS No 12.02 6 17
Yes 13.91 6 21
Completed BA degree or higher No 12.38 6 19
Yes 16.44 14 21
Note. BA = bachelor of arts; GED = general education diploma; HS = high school; Hyp = hypothesis; T = true; F = false.

Hypothesis 1: High School Completion Prior to Emancipation

There is a significant difference in educational achievement between foster-care alumni who completed high school prior to emancipation and foster-care alumni who did not complete high school prior to emancipation as measured by the total years of schooling. Foster-care alumni who completed high school prior to emancipation had higher postsecondary educational-achievement outcomes than alumni who completed high school requirements after emancipation.

A *t*-test for independent samples revealed that foster-care alumni who obtained their high school diplomas or GEDs while in foster care had significantly higher educational achievement ($M = 13.35$, $SD = 1.76$) than alumni who did not obtain their high school diplomas or GEDs ($M = 11.58$, $SD = 1.68$) prior to emancipation, $t(1065) =$
16.08, \( p = .000 \), one-tailed. Therefore, \( H_1 \) is supported. SPSS provides results for two-tailed \( t \)-tests. However, the \( p \)-values for two-tailed tests were divided by 2 to get the significance level for one-tailed \( t \)-tests.

\textit{Hypothesis 2: Ethnicity}

There will be a significant difference in educational achievement relative to ethnicity among foster-care alumni, with White foster-care alumni having higher educational achievement than alumni of color.

A \( t \)-test for independent samples indicated that there was no significant difference in educational achievement between White foster-care alumni (\( M = 12.84, SD = 1.95 \)) and alumni of color (\( M = 12.68, SD = 1.98 \)); \( t(695) = .798, p = .213 \), one-tailed. Therefore, \( H_2 \) is not supported.

\textit{Hypothesis 3: Gender}

There will be a significant difference in educational achievement relative to gender among foster-care alumni with female foster-care alumni having higher educational achievement than male alumni.

A one-tailed \( t \)-test for independent samples revealed that female foster-care alumni had significantly higher (\( M = 12.81, SD = 1.95 \)) educational achievement than male alumni (\( M = 12.59, SD = 1.90 \)); \( t(1066) = -1.88, p = .03 \). Therefore, \( H_3 \) is supported.

\textit{Hypothesis 4: Age Entering the Foster Care System}

Foster-care alumni who entered foster care at a younger age (5 or younger, 6–11) will have significantly higher educational achievement than those who entered foster care at an older age (12 or older).
A one-way ANOVA revealed that foster-care alumni 12 years of age and older had significantly higher educational achievement than alumni who entered foster care at younger ages, $F(2, 1065) = 8.55, p = .000$. Because this difference was not in the direction hypothesized, $H_4$ is not supported. Figure 4-2 illustrates this disparity.

Table 4-10 provides LSD post hoc comparisons for age entering foster care. Significant differences were observed in years of education between alumni who were 0 to 5 and 12 and older; and between 6 to 11 and 12 and older when they entered foster care.

![Figure 4-2. Age entering foster care and educational achievement.](image)

*Hypothesis 5: Number of Foster Care Placements*

There will be a significant difference between educational achievement relative to number of different placements while in foster care categorized as low (4 or less),
medium (5–8), and high (9 or more), with alumni experiencing multiple placements having lower levels of educational achievement that those with fewer placements.

A one-way ANOVA revealed that foster-care alumni with fewer placements had significantly higher educational achievement than alumni with multiple placements, $F(2, 1065) = 8.76, p = .000$. Therefore, $H_5$ is supported (see Figure 4-3).

Table 4-10

| Least Squares Difference Post Hoc Comparisons for Age Entering Foster Care: Dependent Variable: Years of Education |
| --- | --- | --- | --- | --- | --- | --- |
| (I) CV: age entering child welfare | (J) CV: age entering child welfare | Mean difference (I–J) | Std. error | Sig. | Upper bound | Lower bound |
| Birth to 5 | 6 to 11 | .000 | .138 | 1.000 | -.27 | .27 |
| | 12 & Up | -.544(*) | .150 | .000 | -.84 | -.25 |
| 6 to 11 | Birth to 5 | .000 | .138 | 1.000 | -.27 | .27 |
| | 12 & Up | -.544(*) | .147 | .000 | -.83 | -.26 |
| 12 & older | Birth to 5 | .544(*) | .150 | .000 | .25 | .84 |
| | 6 to 11 | .544(*) | .147 | .000 | .26 | .83 |

*Note.* The mean difference is significant at the .05 level; CV = continuous variable.

Table 4-11 provides LSD Post Hoc Comparisons for number of foster care placements. Significant differences were observed in years of education between alumni with low (4 or less) and medium (5 to 8), medium (5 to 8) and high (9 or more), and high (9 or more) and low (4 or less) foster-care placements.

**Hypothesis 6: Maltreatment**

There will be a significant difference in educational achievement relative to experience of maltreatment (sexual, physical, or emotional abuse), with foster-care alumni experiencing abuse having lower educational achievement than alumni who were not abused.
Figure 4-3. Number of foster-care placements and educational achievement.

Table 4-11

Least Squares Difference Post Hoc Comparisons for Number of Foster Care Placements: Dependent Variable: Years of Education

<table>
<thead>
<tr>
<th>(I) FC: number of placements</th>
<th>(J) FC: number of placements</th>
<th>Mean difference (I–J)</th>
<th>Std. error</th>
<th>Sig.</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (4 or less)</td>
<td>Medium (5 to 8)</td>
<td>.363(*)</td>
<td>.139</td>
<td>.009</td>
<td>.09 .64</td>
</tr>
<tr>
<td></td>
<td>High (9 or more)</td>
<td>.615(*)</td>
<td>.149</td>
<td>.000</td>
<td>.32 .91</td>
</tr>
<tr>
<td>Medium (5 to 8)</td>
<td>Low (4 or less)</td>
<td>-.363(*)</td>
<td>.139</td>
<td>.009</td>
<td>-.64 -.09</td>
</tr>
<tr>
<td></td>
<td>High (9 or more)</td>
<td>.253</td>
<td>.145</td>
<td>.082</td>
<td>-.03 .54</td>
</tr>
<tr>
<td>High (9 or more)</td>
<td>Low (4 or less)</td>
<td>-.615(*)</td>
<td>.149</td>
<td>.000</td>
<td>-.91 -.32</td>
</tr>
<tr>
<td></td>
<td>Medium (5 to 8)</td>
<td>-.253</td>
<td>.145</td>
<td>.082</td>
<td>-.54 .03</td>
</tr>
</tbody>
</table>

Note. * The mean difference is significant at the .05 level; FC = foster care.
A one-way ANOVA revealed that foster-care alumni who experienced abuse had significantly lower educational achievement than alumni who were not abused, 

\[ F(6, 1061) = 2.48, p = .022. \] Therefore, \( H_6 \) is supported. Figure 4-4 illustrates this disparity. Table 4-12 provides LSD Post Hoc Comparisons for categories of maltreatment.

Figure 4-4. Maltreatment by birth family before or during care and educational achievement.
Table 4-12

Least Squares Difference Post Hoc Comparisons for Maltreatment: Dependent Variable: Years of Education

<table>
<thead>
<tr>
<th>(I) Maltreatment</th>
<th>(J) Maltreatment</th>
<th>Mean difference $(I-J)$</th>
<th>Std. error</th>
<th>Sig.</th>
<th>Upper bound</th>
<th>Lower bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>No maltreatment</td>
<td>Sexual</td>
<td>.036</td>
<td>.318</td>
<td>.910</td>
<td>-0.59</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>Sexual and other</td>
<td>.596*</td>
<td>.216</td>
<td>.006</td>
<td>0.17</td>
<td>1.02</td>
</tr>
<tr>
<td></td>
<td>Physical only</td>
<td>.538</td>
<td>.278</td>
<td>.054</td>
<td>-0.01</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>Neglect only</td>
<td>.565*</td>
<td>.249</td>
<td>.023</td>
<td>0.08</td>
<td>1.05</td>
</tr>
<tr>
<td></td>
<td>Physical and neglect</td>
<td>.436</td>
<td>.243</td>
<td>.073</td>
<td>-0.04</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td>-.070</td>
<td>.337</td>
<td>.836</td>
<td>-0.73</td>
<td>0.91</td>
</tr>
<tr>
<td>Sexual</td>
<td>No maltreatment</td>
<td>-.036</td>
<td>.318</td>
<td>.910</td>
<td>-0.66</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>Sexual and other</td>
<td>.560*</td>
<td>.267</td>
<td>.036</td>
<td>0.04</td>
<td>1.08</td>
</tr>
<tr>
<td></td>
<td>Physical only</td>
<td>.502</td>
<td>.319</td>
<td>.117</td>
<td>-0.13</td>
<td>1.13</td>
</tr>
<tr>
<td></td>
<td>Neglect only</td>
<td>.529</td>
<td>.294</td>
<td>.072</td>
<td>-0.05</td>
<td>1.11</td>
</tr>
<tr>
<td></td>
<td>Physical and neglect</td>
<td>.400</td>
<td>.289</td>
<td>.167</td>
<td>-0.17</td>
<td>0.97</td>
</tr>
<tr>
<td>Sexual and other</td>
<td>No maltreatment</td>
<td>-.596*</td>
<td>.216</td>
<td>.006</td>
<td>-1.02</td>
<td>-0.17</td>
</tr>
<tr>
<td></td>
<td>Sexual</td>
<td>-.560*</td>
<td>.267</td>
<td>.036</td>
<td>-1.08</td>
<td>-0.04</td>
</tr>
<tr>
<td></td>
<td>Physical only</td>
<td>-.058</td>
<td>.219</td>
<td>.790</td>
<td>-0.49</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>Neglect only</td>
<td>-.031</td>
<td>.179</td>
<td>.862</td>
<td>-0.38</td>
<td>0.32</td>
</tr>
<tr>
<td></td>
<td>Physical and neglect</td>
<td>-.160</td>
<td>.171</td>
<td>.349</td>
<td>-0.50</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td>-.666*</td>
<td>.290</td>
<td>.022</td>
<td>-1.23</td>
<td>-0.10</td>
</tr>
<tr>
<td>Physical only</td>
<td>No maltreatment</td>
<td>-.538</td>
<td>.278</td>
<td>.054</td>
<td>-1.08</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Sexual</td>
<td>-.502</td>
<td>.319</td>
<td>.117</td>
<td>-1.13</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>Sexual and other</td>
<td>.058</td>
<td>.219</td>
<td>.790</td>
<td>-0.37</td>
<td>0.49</td>
</tr>
<tr>
<td></td>
<td>Neglect only</td>
<td>.017</td>
<td>.251</td>
<td>.914</td>
<td>-0.47</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Physical and neglect</td>
<td>-.102</td>
<td>.245</td>
<td>.677</td>
<td>-0.58</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>Emotional</td>
<td>-.607</td>
<td>.339</td>
<td>.073</td>
<td>-1.27</td>
<td>0.06</td>
</tr>
<tr>
<td>Neglect only</td>
<td>No maltreatment</td>
<td>-.565*</td>
<td>.249</td>
<td>.012</td>
<td>-1.05</td>
<td>-0.08</td>
</tr>
<tr>
<td></td>
<td>Sexual</td>
<td>-.529</td>
<td>.294</td>
<td>.072</td>
<td>-1.11</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>Sexual and other</td>
<td>.031</td>
<td>.179</td>
<td>.862</td>
<td>-0.32</td>
<td>0.38</td>
</tr>
<tr>
<td></td>
<td>Physical only</td>
<td>-.027</td>
<td>.251</td>
<td>.914</td>
<td>-0.52</td>
<td>0.47</td>
</tr>
<tr>
<td>(I) Maltreatment</td>
<td>(J) Maltreatment</td>
<td>Mean difference (I-J)</td>
<td>Std. error</td>
<td>Sig.</td>
<td>Upper bound</td>
<td>Lower bound</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------------------------------------</td>
<td>-----------------------</td>
<td>------------</td>
<td>------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Physical and neglect</td>
<td>Physical and neglect</td>
<td>-.129</td>
<td>.211</td>
<td>.540</td>
<td>-0.54</td>
<td>0.28</td>
</tr>
<tr>
<td>Emotional</td>
<td>Emotional</td>
<td>-.635*</td>
<td>.315</td>
<td>.044</td>
<td>-1.25</td>
<td>-0.02</td>
</tr>
<tr>
<td>Physical and neglect</td>
<td>No maltreatment</td>
<td>-.436</td>
<td>.243</td>
<td>.073</td>
<td>-0.91</td>
<td>0.04</td>
</tr>
<tr>
<td>Sexual</td>
<td>Sexual</td>
<td>-.400</td>
<td>.289</td>
<td>.167</td>
<td>-0.97</td>
<td>0.17</td>
</tr>
<tr>
<td>Sexual and other</td>
<td>Sexual and other</td>
<td>.160</td>
<td>.171</td>
<td>.349</td>
<td>-0.18</td>
<td>0.50</td>
</tr>
<tr>
<td>Physical only</td>
<td>Physical only</td>
<td>.012</td>
<td>.245</td>
<td>.677</td>
<td>-0.38</td>
<td>0.58</td>
</tr>
<tr>
<td>Neglect only</td>
<td>Neglect only</td>
<td>.129</td>
<td>.211</td>
<td>.540</td>
<td>-0.28</td>
<td>0.54</td>
</tr>
<tr>
<td>Emotional</td>
<td>Emotional</td>
<td>-.505</td>
<td>.310</td>
<td>.104</td>
<td>-1.11</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Note. * The mean difference is significant at the .05 level.

There was a significant difference in years of education between “no maltreatment” and “sexual and other” maltreatment. There was a significant difference in years of education between “no maltreatment” and “neglect only.” There was a significant difference in years of education between “sexual” and “sexual and other” maltreatment. There was a significant difference in years of education between “sexual and other” and “emotional” maltreatment. There was a significant difference in years of education between “neglect only” and “emotional” maltreatment. Note that these differences should be viewed with caution as no statistical adjustments for multiple comparisons were employed.
Hypothesis 7: Number of School Transfers

There will be a significant difference in educational achievement of foster-care alumni relative to the number of different school transfers while in care categorized as low (6 or less), medium (7 to 9), and high (10 or more), with alumni experiencing multiple school transfers having lower levels of educational achievement than those with fewer transfers.

A one-way ANOVA revealed that foster-care alumni with 10 or more school transfers had significantly lower educational achievement than alumni with fewer transfers, $F(2, 1065) = 5.27, p = .005$. Therefore, $H_7$ is supported. This relationship is nonlinear. Figure 4-5 illustrates this disparity.

![Figure 4-5. Number of school transfers and educational achievement.](image-url)
Table 4-13 provides LSD Post Hoc Comparisons for number of school changes. There was a significant difference in years of education between alumni with medium (7 to 9) and high (10 or more) numbers of school changes.

Table 4-13

<table>
<thead>
<tr>
<th>(I) Number of school changes, trichotomized</th>
<th>(J) Number of school changes, trichotomized</th>
<th>Mean difference (I-J)</th>
<th>Std. error</th>
<th>Sig.</th>
<th>95% Confidence interval</th>
<th>Upper bound</th>
<th>Lower bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (6 or less)</td>
<td>Medium (7 to 9)</td>
<td>-.234</td>
<td>.139</td>
<td>.091</td>
<td>-.51</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>High (10 or more)</td>
<td></td>
<td>.262</td>
<td>.146</td>
<td>.073</td>
<td>-.02</td>
<td>.55</td>
<td></td>
</tr>
<tr>
<td>Medium (7 to 9)</td>
<td>Low (6 or less)</td>
<td>.234</td>
<td>.139</td>
<td>.091</td>
<td>-.04</td>
<td>.51</td>
<td></td>
</tr>
<tr>
<td>High (10 or more)</td>
<td></td>
<td>.497*</td>
<td>.153</td>
<td>.001</td>
<td>.20</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td>High (10 or more)</td>
<td>Low (6 or less)</td>
<td>-.262</td>
<td>.146</td>
<td>.073</td>
<td>-.55</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Medium (7 to 9)</td>
<td></td>
<td>-.497*</td>
<td>.153</td>
<td>.001</td>
<td>-.80</td>
<td>-.20</td>
<td></td>
</tr>
</tbody>
</table>

Note: * The mean difference is significant at the .05 level.

Ancillary Analysis: Ethnicity

Is there a significant difference in educational attainment among all ethnic groups interviewed for the CNFCAS data set?

A one-way ANOVA indicated that there was no significant difference in the educational achievement of alumni relative to ethnicity as defined by Hispanic or Latino, Non-Hispanic Black, Non-Hispanic Other, and Non-Hispanic White, \( F(3, 1064) = 2.47, p = .061 \).

Ancillary Analysis: High School Diploma vs. GED

According to Table 4-14, of the 916 alumni who received a high school diploma or GED, 73.6% \( (N = 674) \) received it in foster care compared to 26.4% \( (N = 242) \) who received it after leaving foster care. Furthermore, 33% \( (N = 65) \) of alumni who obtained
their GED obtained it while in foster care compared to 67% (N = 132) of alumni who obtained their GED after leaving care. These differences were statistically significant, \( \chi^2 (1, N = 916) = 212.67, p = .000 \).

Table 4-14

*Crosstabulation of Obtained HS Diploma or GED and Received HS Diploma While in Care*

<table>
<thead>
<tr>
<th>Received HS diploma or GED while in care?</th>
<th>No</th>
<th>Yes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>110</td>
<td>609</td>
<td>719</td>
</tr>
<tr>
<td>Percent within DV</td>
<td>15.3%</td>
<td>84.7%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Percent of total</td>
<td>12.0%</td>
<td>66.5%</td>
<td>78.5%</td>
</tr>
<tr>
<td>GED</td>
<td>132</td>
<td>65</td>
<td>197</td>
</tr>
<tr>
<td>Percent within DV</td>
<td>67.0%</td>
<td>33.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Percent of total</td>
<td>14.4%</td>
<td>7.1%</td>
<td>21.5%</td>
</tr>
<tr>
<td>Total</td>
<td>242</td>
<td>674</td>
<td>916</td>
</tr>
<tr>
<td>Percent within DV</td>
<td>26.4%</td>
<td>73.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Percent of total</td>
<td>26.4%</td>
<td>73.6%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

*Note.* DV = dependent variable; GED = general education diploma; HS = high school.

Multiple Regression Analyses

Regression is the prediction of one variable from knowledge of one or more (multiple) other variables. When variables are correlated, differences in one or multiple predictor variables relate to differences in the outcome variable and this relationship can be presented in the form of an equation. By understanding the predictive relationships between variables, it may be possible to manipulate or control those predictors in order to increase the likelihood of obtaining a specific desired outcome. For instance, having the knowledge that receipt of a high school diploma or GED while in foster care is a significant predictor of subsequent educational achievement suggests that more resources can be directed toward getting children in foster care to obtain their high school...
diplomas/GEDs while in foster care rather than directing resources toward variables that have little or no influence on postsecondary educational achievement.

In the current study, there were seven potential predictors: (a) gender, (b) high school completion prior to emancipation, (c) ethnicity, (d) age entering child welfare, (e) number of foster-care placements, (f) number of school changes, and (g) maltreatment. The continuous outcome variable was educational achievement operationalized as years of education. Multiple regression analysis examined the predictive relationships between the variables. Regression coefficients are presented in Table 4-15.

All seven predictors were entered into the model. However, only two variables were significant predictors of educational achievement. The overall model was significant, $F(7, 688) = 29.19, p = .000, R^2 = .23$, accounting for 23% of the variance in educational achievement. Gender was not a significant predictor of educational achievement; $\beta = -.077, p = .568$. Receipt of a high school diploma or GED while in care was a significant, positive predictor of educational achievement; $\beta = 1.82, p = .000$. Ethnicity was not a significant predictor of educational achievement; $\beta = -.080, p = .648$. Age entering child welfare was not a significant predictor of educational achievement; $\beta = .067, p = .442$. Therefore, these specific demographic attributes were not significant predictors of educational achievement.

However, the number of foster-care placements was a significant, negative predictor of educational achievement, $\beta = -.379, p = .000$. This is an inverse relationship suggesting that as the number of foster-care placements increase, educational achievement decreases. Similarly, as the number of foster-care placements decrease, educational achievement increases. The number of school transfers was not a significant
predictor of educational achievement; \( \beta = 0.075, p = 0.371 \). Child maltreatment before or during foster care was not a significant predictor of educational achievement; \( \beta = -0.017, p = 0.682 \).

Table 4-15

**Regression Coefficients for Predicting Years of Education**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>12.241</td>
<td>37.600</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Gender in case record</td>
<td>-0.077</td>
<td>-0.020</td>
<td>-0.571</td>
<td>.568</td>
</tr>
<tr>
<td>Received HS diploma or GED while in care?</td>
<td>1.824</td>
<td>13.115</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-0.080</td>
<td>-0.016</td>
<td>-0.457</td>
<td>.648</td>
</tr>
<tr>
<td>Age entered child welfare</td>
<td>0.067</td>
<td>0.027</td>
<td>0.769</td>
<td>.442</td>
</tr>
<tr>
<td>Number of foster care placements</td>
<td>-0.379</td>
<td>-0.151</td>
<td>-4.216</td>
<td>.000</td>
</tr>
<tr>
<td>Number of school changes, trichotomized</td>
<td>0.075</td>
<td>0.032</td>
<td>0.896</td>
<td>.371</td>
</tr>
<tr>
<td>Maltreatment</td>
<td>-0.017</td>
<td>-0.014</td>
<td>-0.410</td>
<td>.682</td>
</tr>
</tbody>
</table>

*Note.* GED = general education diploma; HS = high school.

**Regression Equation**

According to the regression model, the receipt of a high school diploma/GED while in foster care and the number of foster-care placements were significant predictors of educational achievement. Furthermore, alumni ethnicity as ascertained through self-disclosure, and in this study defined as White alumni and alumni of color, was not a significant predictor of educational achievement. Similarly, age entering child welfare, number of school changes, and child maltreatment were not significant predictors of educational achievement.
A sample equation for the regression model is as follows:

Predicted educational achievement = 12.24 + (Received high school diploma or GED while in care) * (1.82) + (Number of foster care placements) * (-.379).

In the preceding equation, the presence of a high school diploma/GED while in care would be coded as “1” for “yes” or zero for “no.” This would be multiplied by the regression coefficient for this variable (1.82). The number of foster-care placements would be coded as 1 for low (4 or less), 2 for medium (5 to 8), or 3 for high (9 or more). The result would be multiplied by its regression coefficient (-.379) and added to the constant of 12.24 to obtain the predicted educational achievement as defined by years of education.

For example, an individual who obtained a high school diploma/GED while in foster care and had 9 or more foster-care placements would have a predicted educational achievement of 12.92 years (educational achievement = 12.24 + (1)(1.82) + 3(-.379)). An individual who obtained a high school diploma/GED while in care and had four or fewer foster-care placements would have a predicted educational achievement of 13.68 years [educational achievement = 12.24 + (1)(1.82) + 1(-.379)].

Ancillary Analyses: Other Explanatory Variables for Educational Achievement

Based on the review of literature there were other explanatory variables for educational achievement in the CNFCAS data set.

Nineteen additional variables (e.g. ADD/ADHD, physical or learning disability, and other impairments (e.g., drug exposed and hearing impairment) were examined to determine their potential for explaining the variance in educational achievement. Table 4-16 provides a list of the explanatory variables and examples of related literature.
### Table 4-16

**Predictors of Educational Achievement and Related Literature**

<table>
<thead>
<tr>
<th>Additional predictors for educational achievement</th>
<th>Examples of related literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at the time of interview</td>
<td>Babbie (2001)</td>
</tr>
<tr>
<td>Mother employment</td>
<td>Engle et al. (1996)</td>
</tr>
<tr>
<td>Father employment</td>
<td>Engle et al. (1996)</td>
</tr>
<tr>
<td>Mother had substance abuse problems</td>
<td>Epstein (2001)</td>
</tr>
<tr>
<td>Mother had bad mental health</td>
<td>Ferguson (2001)</td>
</tr>
<tr>
<td>Father had substance abuse problems</td>
<td>Pecora et al. (2006)</td>
</tr>
<tr>
<td>Father had bad mental health</td>
<td>Rutter (1987a)</td>
</tr>
<tr>
<td>Number of kinship care placements</td>
<td>Dubowitz et al. (1993)</td>
</tr>
<tr>
<td>Educational services &amp; experience: enrolled in special-education classes</td>
<td>Emerson &amp; Lovitt (2003)</td>
</tr>
<tr>
<td>Educational services &amp; experience: repeated a grade</td>
<td>McMillen et al. (2003)</td>
</tr>
<tr>
<td>Participated in independent living training groups or workshops</td>
<td>Georgiades (2003)</td>
</tr>
<tr>
<td>Degree of preparation for leaving care</td>
<td>Fostering Connections to Success and Increasing Adoptions Act (H.R. 6893, 2008)</td>
</tr>
<tr>
<td>Since leaving care, has never been on public assistance</td>
<td>Jones-Harden (2000)</td>
</tr>
<tr>
<td>Had a close relationship with an adult while growing up</td>
<td>Bowlby (1969)</td>
</tr>
<tr>
<td>ADD/ADHD</td>
<td>Pecora et al. (2006)</td>
</tr>
<tr>
<td>Physical or learning disability</td>
<td>O’Neill Murray &amp; Gesiriech (2005)</td>
</tr>
<tr>
<td>Other impairments</td>
<td>Perry (2001)</td>
</tr>
</tbody>
</table>

*Note: ADD = attention deficit disorder; ADHD = attention deficit hyperactivity disorder.*

Because 23% of the variance in educational achievement has been accounted for by receipt of high school diploma/GED while in foster care and the number of foster-care placements, those same variables were reentered into the model along with the variables from Table 4-16. Regression coefficients are presented in Table 4-17.
The overall regression model was significant, $F(20, 782) = 18.45, p = .000$, $R^2 = .32$, accounting for 32% of the variance in educational achievement. Seven variables in the regression model were significant predictors of educational achievement. As previously determined, receipt of a high school diploma or GED while in foster care was positively significantly related to educational achievement, $\beta = 1.50, p = .000$. Number of foster-care placements was significantly negatively related to educational achievement, $\beta = -.191, p = .011$. Age at time of interview was a significant, positive predictor of educational achievement, $\beta = .303, p = .000$. Enrollment in special-education classes was a significant, negative predictor of educational achievement, $\beta = -.309, p = .022$. Repeating a grade was a significant, negative predictor of educational achievement, $\beta = .404, p = .001$. Degree of preparation for leaving care was a significant positive predictor of educational achievement, $\beta = .524, p = .000$. Never being on public assistance since leaving care was a significant positive predictor of educational achievement, $\beta = .621, p = .000$.

Collinearity Statistics

Due to the numerous significant variables in the model, multicollinearity statistics were generated and provided in Table 4-18. One of the key statistics to test is whether the impact of a particular variable is influenced by others, called a “tolerance statistic.” The “tolerance” is the percentage of the variance in a given predictor that cannot be explained by the other predictors (Babbie, 2001). If a variable such as “Since leaving care, has never been on public assistance,” has a tolerance value of .92, this means that 92% of the variance in this variable cannot be explained by the other variables in the model.
Table 4-17

Regression Coefficients: Other Explanatory Variables for Educational Achievement

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized coefficients</th>
<th>Standardized coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>B 9.636</td>
<td>Std. error .616</td>
<td>Beta .364</td>
<td>B 15.655</td>
</tr>
<tr>
<td>Received HS diploma or GED while in care?</td>
<td>B 1.498</td>
<td>Std. error .128</td>
<td>Beta .364</td>
<td>B 11.691</td>
</tr>
<tr>
<td>Number of placements</td>
<td>B -.191</td>
<td>Std. error .075</td>
<td>Beta -.078</td>
<td>B -2.555</td>
</tr>
<tr>
<td>Age at the time of interview</td>
<td>B .303</td>
<td>Std. error .085</td>
<td>Beta .173</td>
<td>B 3.567</td>
</tr>
<tr>
<td>Mother employment</td>
<td>B .017</td>
<td>Std. error .070</td>
<td>Beta .008</td>
<td>B .243</td>
</tr>
<tr>
<td>Father employment</td>
<td>B .120</td>
<td>Std. error .071</td>
<td>Beta .060</td>
<td>B 1.699</td>
</tr>
<tr>
<td>Mother had substance-abuse problems</td>
<td>B .194</td>
<td>Std. error .132</td>
<td>Beta .050</td>
<td>B 1.467</td>
</tr>
<tr>
<td>Mother had bad mental health</td>
<td>B .258</td>
<td>Std. error .161</td>
<td>Beta .052</td>
<td>B 1.603</td>
</tr>
<tr>
<td>Father had substance-abuse problems</td>
<td>B -.166</td>
<td>Std. error .152</td>
<td>Beta -.042</td>
<td>B -1.088</td>
</tr>
<tr>
<td>Father had bad mental health</td>
<td>B .210</td>
<td>Std. error .189</td>
<td>Beta .037</td>
<td>B 1.110</td>
</tr>
<tr>
<td>Number of kinship care placements</td>
<td>B .052</td>
<td>Std. error .093</td>
<td>Beta .018</td>
<td>B .566</td>
</tr>
<tr>
<td>Educational services &amp; experience: enrolled in special-education classes</td>
<td>B -.309</td>
<td>Std. error .135</td>
<td>Beta -.077</td>
<td>B -2.288</td>
</tr>
<tr>
<td>Educational services &amp; experience: repeated a grade</td>
<td>B -.404</td>
<td>Std. error .127</td>
<td>Beta -.099</td>
<td>B -3.192</td>
</tr>
<tr>
<td>Participated in independent living training groups or workshops</td>
<td>B .224</td>
<td>Std. error .122</td>
<td>Beta .057</td>
<td>B 1.847</td>
</tr>
<tr>
<td>Degree of preparation for leaving care</td>
<td>B .524</td>
<td>Std. error .131</td>
<td>Beta .124</td>
<td>B 3.992</td>
</tr>
<tr>
<td>Since leaving care, has never been on public assistance</td>
<td>B .621</td>
<td>Std. error .120</td>
<td>Beta .159</td>
<td>B 5.174</td>
</tr>
<tr>
<td>Decade entered care</td>
<td>B .036</td>
<td>Std. error .148</td>
<td>Beta .012</td>
<td>B .244</td>
</tr>
<tr>
<td>Model</td>
<td>Unstandardized coefficients</td>
<td>Standardized coefficients</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>-------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Std. error</td>
<td>Beta</td>
<td>B</td>
</tr>
<tr>
<td>Had a close relationship with an adult while growing up</td>
<td>-.194</td>
<td>.122</td>
<td>-.049</td>
<td>-1.590</td>
</tr>
<tr>
<td>Medical and psychological history: ADD/ADHD</td>
<td>-.049</td>
<td>.200</td>
<td>-.008</td>
<td>-.245</td>
</tr>
<tr>
<td>Impairment: physical or learning disability</td>
<td>-.010</td>
<td>.160</td>
<td>-.002</td>
<td>-.064</td>
</tr>
<tr>
<td>Impairment: other impairment</td>
<td>-.308</td>
<td>.220</td>
<td>-.042</td>
<td>-1.397</td>
</tr>
</tbody>
</table>

Table 4-18

Collinearity Statistics for Significant Predictors

<table>
<thead>
<tr>
<th>Significant predictors of educational achievement</th>
<th>Collinearity statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>Received HS diploma or GED while in care</td>
<td>0.895</td>
</tr>
<tr>
<td>Number of placements</td>
<td>0.924</td>
</tr>
<tr>
<td>Age at the time of interview</td>
<td>0.367</td>
</tr>
<tr>
<td>Educational services &amp; experience: enrolled in special-education classes</td>
<td>0.763</td>
</tr>
<tr>
<td>Educational services &amp; experience: repeated a grade</td>
<td>0.895</td>
</tr>
<tr>
<td>Degree of preparation for leaving care</td>
<td>0.9</td>
</tr>
<tr>
<td>Since leaving care, has never been on public assistance</td>
<td>0.917</td>
</tr>
</tbody>
</table>

Note. GED = general education diploma; HS = high school; VIF = variance-inflation factor.

Tolerance values for significant predictors of educational achievement ranged from .37 to .92 indicating that 37% to 92% of the variance in a given significant predictor variable cannot be explained by the other predictors. When the tolerances are close to
zero, there is high multicollinearity and the standard error of the regression coefficients will be inflated, which decreases predictive value. The significant predictors have high tolerance values, which suggest that multicollinearity is not problematic. Furthermore, the variance inflation factor (VIF) ranges between 1.091 to 2.722 for the significant predictors. A VIF greater than 2 is usually considered problematic. Among all the variables in the regression model, only two variables have inflation factors greater than 2; age at time of interview (VIF = 2.77) and decade entered child welfare (VIF = 2.68).

Because only one of the variables (age at time of interview) was a significant predictor of educational achievement, the fact that it has a VIF of 2.77 is not considered to be problematic. It does imply, however, that the variables of age at time of interview and decade entered child welfare may share similar characteristics.

Table 4-19 provides a summary of all hypotheses tested.

Summary of Findings

Multiple regression analysis determined that receipt of a high school diploma/GED while in foster care and number of foster-care placements were significant predictors of educational achievement, and contributed to 23% of the shared variance with educational achievement. These two variables were examined with 19 additional explanatory variables for their predictive values on educational achievement in a second regression model as an ancillary analysis, which accounted for 32% of the variance in educational achievement. Seven significant predictors of educational achievement were observed: (a) receipt of high school diploma/GED while in foster care, (b) number of foster-care placements, (c) age entering child welfare, (d) enrollment in special-education
classes, (e) repeating a grade, (f) degree of preparation for leaving care, and (g) never being on public assistance since leaving care.

Table 4-19

Summary of All Hypotheses

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Sig.</th>
<th>Null</th>
<th>Statistical test</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$: High school completion prior to emancipation</td>
<td>&lt;.001</td>
<td>Supported</td>
<td>Independent samples $t$-test</td>
</tr>
<tr>
<td>$H_2$: Ethnicity</td>
<td>0.21</td>
<td>Rejected</td>
<td>Independent samples $t$-test</td>
</tr>
<tr>
<td>$H_3$: Gender</td>
<td>0.03</td>
<td>Supported</td>
<td>Independent samples $t$-test</td>
</tr>
<tr>
<td>$H_4$: Age entered foster care</td>
<td>&lt;.001</td>
<td>Rejected</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>$H_5$: Number of foster care placements</td>
<td>&lt;.001</td>
<td>Supported</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>$H_6$: Maltreatment</td>
<td>0.02</td>
<td>Supported</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>$H_7$: Number of school transfers</td>
<td>0.005</td>
<td>Supported</td>
<td>One-way ANOVA</td>
</tr>
</tbody>
</table>

A $t$-test for independent samples determined that foster-care alumni who obtained a high school diploma or GED prior to emancipation had significantly higher educational achievement than alumni who did not complete high school or obtain a GED prior to emancipation. A $t$-test for independent samples determined that there was no significant difference between the educational achievement of White foster-care alumni and alumni of color. In a supplementary analysis, a one-way ANOVA determined that there was no significant difference in educational achievement relative to alumni self-identified classifications of ethnicity. A $t$-test for independent samples determined that female foster-care alumni had significantly higher educational achievement than male alumni. A one-way ANOVA found that foster-care alumni, who were older (age 12 and older) when they entered child welfare, had significantly higher educational achievement than alumni who were younger when they entered child welfare. A one-way ANOVA determined that
foster-care alumni who had a low number of placements (4 or less) had significantly higher educational achievement than foster-care alumni who had medium (5 to 8) or high (9 or more) number of placements. Foster-care alumni who experienced multiple abuses by their birth families before or during care had significantly lower educational achievement than alumni with no maltreatment.

A one-way ANOVA revealed that if the maltreatment was categorized as “sexual only,” this did not appear to adversely impact educational achievement. Maltreatment categorized as “physical only,” impacted educational achievement to the same degree as multiple abuses. Foster-care alumni who experienced neglect had significantly lower educational achievement than alumni who experienced emotional abuse or no maltreatment. Finally, a one-way ANOVA determined that foster-care alumni with high number (10 or more) of school transfers had significantly lower educational achievement than alumni with fewer transfers.
Overview of Research Findings

Few research studies have rigorously examined the association between psychosocial risk factors experienced by foster-care alumni and their life-course outcomes such as high school/GED completion while in care and subsequent educational achievement, controlling for (a) demographics: gender, ethnicity, and age; (b) the number of different placements while in foster care; and (c) type of child maltreatment suffered prior to foster-care placement (as one categorical variable that features five variables—no child maltreatment, sexual abuse only, physical only, neglect only, or emotional abuse only, and multiple abuse patterns). The professional literature does not adequately address the lower rates of secondary and postsecondary schooling outcomes among the 12 million adult foster-care alumni.

Four specific research questions were posed: (a) Does graduating with a high school diploma or obtaining a GED prior to emancipation from foster care negatively impact the subsequent educational achievement of foster-care alumni? (b) How do basic demographic attributes (gender, ethnicity, and age) influence foster-care-alumni adult educational-achievement outcomes? (c) How do child maltreatment and number of foster-care placements influence adult educational achievement of foster-care alumni? (d) How do the number of secondary-school transfers influence adult educational achievement of foster-care alumni? It was anticipated that this study would determine if a set of factors is predictive of positive academic achievement for alumni of foster care. Also this investigation aimed to add to the knowledge base already produced by the CNFCAS, the database from which the study data were drawn. Finally, as a result of this
investigation, child-welfare public-agency providers would be able to develop specific client/student-focused resilience interventions and programs to address the academic deficits of children placed in foster care.

There were seven hypotheses examined in this study. The general hypothesis of the study is that youth in foster care attain significantly lower levels of educational-achievement outcomes after emancipation, but that completion of high school prior to emancipation may have a significant positive impact on subsequent academic-achievement outcomes. The first hypothesis was supported by the data: foster-care alumni who completed high school prior to emancipation had higher postsecondary educational-achievement outcomes than alumni who completed high school requirements after emancipation. The second hypothesis was not supported by the data in that there was no significant difference in educational achievement relative to ethnicity among foster-care alumni, with White foster-care alumni having similar educational-achievement outcomes to alumni of color. The third hypothesis was supported by the data: there was a significant difference in educational achievement based on gender, as predicted, with female foster-care alumni having higher educational-achievement outcomes than male alumni. The fourth hypothesis, was not supported by the data: foster-care alumni who entered foster care before the age of 11 did not have significantly higher educational achievement than those who entered foster care at age 12 or older. In fact, the reverse was true. The fifth hypothesis was supported by the data in that alumni who experienced multiple placements had lower levels of educational achievement that those with fewer placements. The sixth hypothesis was supported by the data: alumni who experienced child maltreatment before or during foster care had lower educational
achievement than alumni who were not abused. However this result was confounded because alumni who experienced certain forms of maltreatment had higher educational achievement than alumni who were not abused. The seventh hypothesis was supported by the data: there is a significant relationship between number of different school transfers while in foster care and adult-achievement outcomes, with alumni experiencing multiple school transfers having lower levels of educational achievement than those with fewer transfers (see Table 4-19 for a summary).

Furthermore, all seven predictors were entered into the model for an supplementary analysis. However, only five variables were significant predictors of educational achievement. The overall model accounted for 23% of the variance in educational achievement. There were seven original predictors: (a) gender, (b) high school completion prior to emancipation, (c) ethnicity, (d) age entering child welfare, (e) number of foster care placements, (f) number of school changes, and (g) maltreatment, which were entered into the regression model. Only two of the variables were significant predictors. As discussed earlier, the regression coefficients are shown in Table 4-13. To further explore this area 20 supplementary variables were entered into the regression model as an ancillary analysis (Table 4-15). This accounted for 32% of the variance in educational achievement. However, only 7 of them were significant predictors. Lastly, it is important to note that while many predictors were significant, the actual differences in values were relativity small. Large samples have enough power to detect very small effects, which are sometimes statistically though not substantively significant. This is known as a type 1 error, or a false positive. The next section describes Casey Family
Program’s uniqueness as a private child welfare agency, and discusses the results of each of the seven significant predictors of educational achievement.

Casey Family Programs: A Private Child Welfare Agency

During the late 1950s and 1960s, there was a major shift in public interest about child-welfare issues that prompted Jim Casey, the founder of United Parcel Service, to establish Casey Family Programs in 1966. Private-child welfare programs have played a major role in protecting and nourishing maltreated children who are placed in states’ custodial care. The children who entered Casey Family Programs were those who did not want to be adopted and were those judged to have a low chance of being reunited with their biological families; therefore, most of them remained in foster-care placements until age 18 or older.

After examining 40 years of costly federal mandates specifically implemented to improve the foster-care system and enhance the lives of maltreated children, it is clear that public child-welfare and educational systems are not well-structured. These two interconnected systems had failed to establish Interagency Agreements that would mediate positive educational achievement among youth in foster care. The current federal mandates appear to lack specific empirical accountability measures to improve the service-delivery models in child-welfare systems with respect to education and mental health. What separates Casey Family Programs private foster-care services and therapeutic models, from the public foster-care system services and therapeutic models? The Casey Family Programs employs an ecological vision and framework that can assist public state and local welfare systems to provide a more comprehensive delivery-service model that will increase foster children’s educational-achievement outcomes. In 2002,
Casey provided care to over 17,000 youth through 23 major field offices, with a variety of programs including permanency planning (planned long-term foster care, guardianship, adoption, and kinship care), and transition services for youth emancipating from foster care. More than 32,000 youth and their caregivers participated in life-skills planning by completing the online Ansell Casey Life Skills Assessment (Casey Family Programs, 2005)

Over the past 5 years, Casey Family Programs has entered into several collaborations and partnerships with state departments of children, youth, and family services to provide stable placements and reduce the burden of state-operated foster care. Casey Family Programs is very fortunate to have a different funding scheme from most public child-welfare and foster-care agencies. As of 1998 Casey programs’ expenditure per child was 60% higher than that of the public programs ($82 per child per day in 1998 compared with $49 in Oregon and $51 in Washington). This higher allocation allows the Casey program to include features and services not available in many public child-welfare programs. For example, Casey caseworkers have higher education levels than public foster-care caseworkers (98% with masters’ degrees versus only 36%–42% in Oregon and Washington), lower caseloads (15–17 versus 25–31 cases in Oregon and Washington), higher salaries, and access to a wider range of ancillary services for youth in their care such as mental-health counseling, tutoring, and summer camps (Kessler et al., 2008).

In addition, during most of the study period Casey foster parents were paid a $100 per month retainer not available to public-program foster parents, were given more financial resources to provide for the foster child, and had access to more case-manager
assistance. Turnover of foster parents and caseworkers was substantially lower in the Casey program than in many public programs, resulting in more stable placements. Possibly one of the most significant features of the Casey program is that it is one of the few foster-care programs in the country to offer postsecondary job training or college scholarships (tuition, room, and board) at any college in the country where the foster child is accepted and, once admitted, maintains an acceptable grade-point average. With some limitations imposed by Casey on the total number of students supported each year, these benefits are available to all children served by the Casey program and are considered a linchpin of the Casey system. Such benefits are designed to encourage foster children to strive to achieve their optimal education goals without undue financial burdens (Kessler et al., 2008). With the exception of the Chafee Act funds and some state tuition waiver programs, many state public programs, in contrast, terminate youth services at 18 years of age, and provide little or no assistance with the costs of higher education (National Foster Care Awareness Project, 2005).

Multiple Maltreatment and Educational Achievement Outcomes among Casey Alumni

Most Casey alumni were maltreated by their birth family before entering care: 9.2% \((N = 141)\) experienced no maltreatment; 5.0% \((N = 79)\) experienced only sexual abuse, 37% \((N = 593)\) experienced only physical abuse, 9.4% \((N = 148)\) experienced only neglect, 15.0% \((N = 238)\) experienced only neglect, 19.2% \((N = 303)\) of the alumni in this study experienced physical abuse and neglect, and 4.8% \((N = 76)\) experienced emotional abuse. Most of the alumni in this study had substantiated childhood maltreatment; as a consequence, children were removed from the custody of their parents or caregivers and placed in Casey Family Programs Long Term Foster Care Program between 1966 and
1998. In recent years many state and county child welfare systems have turned to privatization specifically for foster care services. Therefore, many private foster-care agencies such as Casey Family Programs have assumed responsibility for managing child welfare services from the state and county legislature.

The next sections of this chapter discuss each of the major study findings. Where available, comparative data from other foster care studies and young adults in the general population are provided.

High School Completion Among Casey Alumni

The findings in this study suggest that receipt of high school diploma/GED while in care, and fewer foster-care placements, were important predictive factors for higher educational achievement. The majority of participants (58.6%, N = 926) received their high school diplomas or GEDs while in foster care and 655 (41.4%) did not receive their high school diplomas or GEDs while in care. It is notable to mention that many of the main differences in education between alumni educational-achievement outcomes (high school graduation before and after emancipation) were relatively small, approximately 6 months of additional education between the two groups. Multiple school transfers however, did appear to predict lower overall educational achievement.

Casey alumni educational-achievement outcomes contrast with previous foster-care studies and caution must be exercised because the studies used for comparison included varying lengths of follow-up time periods. Also, a confounding factor is that high school completion rates do increase slightly after age 22. A useful comparison group would be children who were from chaotic, poor, and socially disorganized families but who were not placed in foster care. For example, as cited in chapter II and at the
beginning of chapter V, Cook’s (1992) seminal study remains one of the few retrospective longitudinal examinations of foster care in postsecondary educational-achievement outcomes. In a national foster-care study, Cook (1992) interviewed 810 foster-care alumni adults between the ages of 18 and 24 who emancipated from care in 1997 and 1998. According to Cook, 66% of alumni in this study had obtained a high school degree as compared to 78% of 18 to 24-year-old adults in the general population, and 53% of adults received welfare benefits in order to maintain self-sufficiency.

In another study that used a representative sample of youth from the general population, some of whom who had been placed in foster care, Blome’s (1997) 6-year national longitudinal survey study compared the educational-achievement outcomes of 347 foster-care alumni with nonfoster-care students. In this study approximately 63% of foster-care alumni completed high school, compared to 84% of the nonfoster-care students. In services, 15% foster-care youth alumni received remedial and intensive academic support as compared with 32% of nonfoster-care students. Furthermore, 45% of foster-care students enrolled in postsecondary educational programs, however a significantly higher number of nonfoster-care students completed a degree program. Lastly, more foster-care alumni enrolled in employment training programs than nonfoster-care students.

Presently, approximately 70% of all American high school students complete their diploma requirements in 4 years or less (USGAO, 2004). In this study educational achievement was measured by years of schooling prior to 1992. The U.S. Census Bureau currently asks for educational attainment by the highest grade or degree completed. For adults aged 30–34 in the general population, 87.6% have completed high school or
additional years of education (U.S. Census Bureau, 2004). Similarly, 87.6% of alumni in this study had obtained a high school diploma, a GED credential, or additional years of schooling. One of the remaining deficiencies is a longitudinal examination of alumni who complete postsecondary education.

As discussed elsewhere in this chapter, caution should be exercised in interpreting these findings. Casey’s final sample did not represent U.S. youth in the foster-care system nationally because of their longer lengths of stay in homes. In addition, youth served in public foster-care agencies can do well when quality therapeutic services are rendered. This supposition was recently confirmed by a group of public-agency alumni who averaged 24 years old when they were interviewed (Pecora et al., 2005). Success was apparent in the positive educational-achievement outcomes for alumni in this study. However some difficulties are noted about the Casey national findings: In spite of their relatively high school-completion rates, Casey alumni obtained a GED rather than a high school diploma 18.5% of the time, over three times the rate of the general population (5%). While having a GED is more beneficial than not completing high school, research supports that individuals who obtain diplomas rather than GEDs are more financially stable; they are 1.7 times more likely to complete an associates degree, 3.9 times more likely to complete a bachelor’s degree, and have higher incomes than those with GEDs (Orfield, 2004).

College Enrollment and Completion of a Bachelor’s Degree or Higher Among Casey Alumni

The college-completion rates were fairly low among Casey alumni. For example, only 8.2% (N = 88) of alumni obtained a bachelor’s degree or higher. In comparison, the leaders of one small study of high-quality foster-care services using a slightly younger
group of alumni found that 3% of alumni of foster care obtained a 4-year college degree (Kerman et al., 2002). Consequently, the Casey alumni postsecondary-college enrollment rate is higher than other previous research in that almost half of the Casey alumni (49.3%) had at least some college or more compared with 51.7% for the general population (U.S. Census Bureau, 2000b, Table DP-2, p. 1). But both college completion rates were modest. Existing studies show that only a small percentage of foster-care alumni, enroll in postsecondary education institutions; however, nearly 70% have aspirations to do so. Researchers affirm that approximately 100,000 college-age foster-care alumni are missing out on higher education opportunities (Courtney, Dworsky & Peters, 2009).

In contrast, one recent National Center on Education Statistics report showed that 63% of students in the general population beginning a 4-year college complete it there or elsewhere within 6 years (using 1995–1996 entry cohort data; 2003, p. 12). Prudence should be exercised because this national percentage includes only graduating high school seniors in the statistic. Continued support of alumni to complete more years of schooling will have important benefits. For example, Courtney, Dworsky and Peters (2009) conducted a recent study on the benefits of extending foster-care services to young adults until the age of 21 years rather than the age of 18. The purpose of this extension is to specifically increase the number of alumni completing postsecondary 4-year degree programs while maintaining stable residences.

The U.S. Census Bureau data confirms that completion of a bachelor’s degree has the potential to give an individual the lifespan earning power of approximately $2.1 million as compared to those who only obtain a high school diploma and can expect to
earn approximately $1.2 million (Day & Newburger, 2002). Thus, an individual with only a high school diploma will earn nearly $1 million less. The rate of postsecondary completion is one of the foremost indicators of economical stability among adults in American society. Past studies have shown that approximately 50% of 18-year-old young adults who emancipate from the foster-care system experienced high rates of unemployment, social-welfare dependency, homelessness, criminology, and higher rates of incarceration. These issues make it very difficult for these young adults in transition to adulthood. As a result, expanding foster-care services until age 21 could significantly increase the number completing a Bachelor’s degree.

Ethnicity and Educational Achievement Among Casey Alumni

Casey’s alumni of color obtained more positive educational-achievement outcomes than has been reported in the general literature on foster-care education. This surprising finding regarding Casey’s alumni of color positive educational outcomes may be due to the fact that intensive academic remedial supports were provided. In addition, at Casey, youth attend a yearly luncheon or dinner to celebrate educational achievements, attended by case managers, foster parents, tutors, and school personnel. Another key factor for mediating positive academic achievement and educational-achievement outcomes is that tutoring services are made available. Lastly, a small percentage of children are given the opportunity to enroll in K–12 private schools.

Gender and Educational Achievement Among Casey Alumni

In this study, high school-completion rates differ sharply across gender groups. The findings showed that female foster-care alumni (n = 757) had significantly higher educational achievement than male alumni (n = 825). Females overwhelmingly have
outperformed males nationally in academic institutions from different and same racial ethnic groups for decades (Orfield, 2004). For example, nationwide in the general population, females obtain a high school diploma at the rate of 72%, compared to 64% for males, comprising an 8% gender gap. A more significant gender gap exists among Hispanic and Black students, with females at rates 11% to 13% higher than males in these ethnicity categories (Orfield). Research also found that females earned significantly less pay than males, even after having obtained a higher college degree. Yet the females in this foster-care population generally have had higher educational achievement and earnings than their male counterparts.

Child Maltreatment and Educational Achievement

There are substantial gaps in the foster-care literature regarding whether maltreatment specifically impedes educational achievement. This study was able to shed new light on highly reported bleak educational-achievement outcomes. Foster-care alumni who have experienced multiple abuses by their birth families before or during care have significantly lower educational achievement than alumni with no maltreatment. However, alumni in this study who were victims of sexual abuse achieved the same level of educational-achievement outcomes as those alumni who were placed in the foster-care system for other types of substantiated maltreatment. The findings indicate that alumni who were placed in foster care because of emotional forms of maltreatment obtained the highest level of educational achievement in comparison with other groups of alumni.

Stability of the Foster Placement and Casey Alumni Educational Achievement

The statistical data revealed that foster-care alumni who received services from Casey Family Programs had fewer placement changes than those in the general foster-
care population; while in the Casey system, they were nearly twice as likely to obtain a high school diploma before emancipating from foster care. Instability of placement in foster care did not negatively impact Casey foster-care alumni educational achievement and is consistent with previous research.

The success of the alumni with fewer placement changes in this study is consistent with literature discussing the academic benefits when children and adolescents remain in care for at least the entire school term after they entered, and were placed in a family unit (Burley and Halpern, 2001). Foster-care placement stability can augment academic performance in school (Conger & Rebeck, 2001). Factors such as school absences, tardiness, and running away from placement significantly impact overall attendance rate, which is a contributory factor that reduces secondary educational-achievement outcomes among the foster-care population. Independent of these psychosocial risk factors, age of first placement is also associated with poor attendance.

It appears that there may be a clear distinction in the service-delivery models between public and private foster-care agencies and the services rendered to children placed in protective custody with respect to placement stability. For example children residing in the public-agency foster-care system are likely to have at least six placement changes during their high school experience (Conger & Rebeck, 2001). Prior research found that these children are more frequently pulled out of school for court appearances, therapy sessions, and medical appointments when compared to foster-care students who reside in stable placements; these continuous interruptions significantly impact educational-achievement outcomes (Conger & Rebeck). The general belief is that when children and adolescents have a stable long-term residence, they are more likely to be
securely attached to their caregivers, develop support networks and friendships, and receive coaching to help them transition into the community with the appropriate self-sufficiency and life skills to participate in the workforce.

Accordingly, the placement stability of alumni in the Casey group is noteworthy. In comparison to other national studies of educational-achievement outcomes among foster-care alumni adults, Casey's therapeutic models and services may have encouraged a significant number of alumni to obtain secondary educational credentials before emancipating, an extraordinary discovery in the field of foster care that could have significant importance in the reconstruction of the public child-welfare system, the K–12 educational system, and policy development.

Reexamining America's Child Welfare and Foster Care Systems: Transformational Policy Recommendations Based on the Study Findings

Policymakers and child-welfare practitioners are rightly concerned with the educational progress of the 30,000 children who leave foster care annually through emancipation. At any point of the year in the United States nearly 500,000 children receive services through the public child-welfare system (USDHHS, 2008). However, conclusive empirical evidence reveals that child-welfare and foster-care systems have failed to implement appropriate polices and track alumni outcomes after leaving care. According to The Annie Casey Foundation (2005) report, "child welfare practitioners and researchers continue their struggle to improve the likelihood that we can accurately identify dangerous situations and intervene to protect children when, if not before they are in danger" (p. 3). Child-welfare and foster-care agencies are supposed to be interconnected subsystems that are collectively responsible for providing a safe environment for maltreated children, and for providing a continuum of services for
adolescents in transition to adulthood. As a result of the findings of this study, this researcher suggests that policymakers adopt and amend current legislation to improve the educational-achievement outcomes for the 496,000 children and adolescents currently placed in the foster-care system.

Most researchers contend that collegiate preparation begins at the onset of middle school (Cabrera & La Nasa, 2000; Hossler, Braxton, & Coopersmith, 1989). In the past 30 years Tierney, Colyar, and Corwin, (2003, p. 3) suggested that “numerous programs have been created, revised, dissolved, and recreated but programmatic success is still a mystery.” In contrast, an investigation of the nature of the relationship between individual resilience attributes, disorganized attachment type, developmental trauma, and educational achievement of youth in foster care would contribute greatly to the professional literature. Policymakers enact effective polices and child-welfare practitioners and researchers must implement specific accountability standards for all federal- and state-mandated foster-care and educational services and programs. Agency service providers and child-welfare experts should be required to develop specific outcomes to measure the effectiveness of TILPs.

Based on the empirical findings of this study, the Educational Achievement Predictive Model was developed as an index and pathway that will lead to postsecondary attainment for youth in foster care. As a result, while the overall variance explained in the regression equations was modest, these are most powerful predictors of educational achievement among the subpopulation of emancipated foster-care young adults. The findings indicate that the seven significant predictors of educational achievement that may improve the academic achievement for the current foster-care population are
(a) receipt of high school diploma/GED while in foster care, (b) number of foster-care placements, (c) an engaged foster-care system, (d) enrollment in special-education classes, (e) repeating a grade, (f) degree of preparation for leaving care, and (g) never being on public assistance since leaving care. The following recommendations were based on the findings and were informed by theory and policy. They should be systematically implemented to ensure that youth in foster-care are given ample opportunities to complete secondary and postsecondary schooling and acquire the necessary employable skills to enter the global workforce upon emancipation.

1. Receipt of a high school diploma/GED while in foster care is a significant predictor of subsequent adulthood educational achievement, and has been cited in the foster-care literature. The child-welfare, foster-care, and K–12 educational systems should promote and support foster-care students’ quest to obtain a high school diploma. Procedural safeguards and systematic changes should focus on enhanced training and supportive networks in the school setting. Also children in the foster-care system need to be educated about the importance of obtaining a high school diploma rather than a GED credential systems need to provide more extensive preparation and support for entrance into postsecondary 4-year degree programs such as the Upward Bound and Gaining Early Awareness and Readiness for Undergraduate (GEAR UP) programs, and assisting in obtaining financial aid for tuition and room and board. Specifically, Gaining Early Awareness and Readiness for Undergraduate Programs offer after-school activities, intensive tutorial support in selected subjects,
mentoring, graduation involvement, college-preparatory workshops, outreach, and financial-aid consultations. Furthermore, child-welfare practitioners should implement a comprehensive case-management paradigm to provide individualized academic tutorial support and collaboration with school personnel to ensure this ongoing support is practically implemented for foster-care college students.

2. The number of foster-care placements is a significant predictor of subsequent adult educational achievement. As discussed earlier, placement instability results in repeatedly adjusting to new teachers, schools, curriculum, and behavioral expectations, which impede bonding and attachments with peers and school personnel as well as adversely impacting academic performance of children who are already developmentally fragmented. The child-welfare system needs to make consistent its service-delivery apparatus to ensure the safety and well-being of children residing in the continuum of foster-care placement. In lieu of the current policy quandaries, the placement-instability crisis in the foster-care system will require innovative and efficient management, as well as multiagency collaboration.

In particular, goals should be to diminish placement instability by reexamining all mandates, polices, and procedures, and establish specific behavior-modification programs (i.e., conducting functional behavior assessments and developing behavior-intervention plans) to reduce the behavior deficits among youth in foster care that may contribute to
multiple-placement interpretations. This will require that foster caregivers are adequately trained in clinical behavior-modification techniques. Therefore, foster-care agencies should continue to implement Concurrent Planning to specifically reduce the number of placements. Concurrent planning seeks to eradicate delays in securing permanent family units for children residing in the foster-care system and considers all pragmatic options for permanency at the onset of the initial placement into foster care and concomitantly pursuing those that will serve the child’s paramount needs (Katz, 1999; Lutz, 2000).

The developmental literature clearly denotes that kinship is an important strategy; children who reside with relatives have far better psychological gains from having a biological-family identity. Lastly, there is a 30-year-old permanency-planning mandate that was supposed to be implemented in all states following the enactment of the Adoption Assistance and Child Welfare Act of 1980. Permanency planning, developed in the 1970s, refers to either returning foster children to their biological homes or terminating parental rights and placing the child for adoption. This program was developed for older children who were placed in foster care and remained in the system until they "aged-out" at 18 years old. As a consequence, to date, on average a child in foster care will experience 4 to 6 placement changes while residing in the foster-care system, which impacts academic performance in secondary and postsecondary schooling.
3. Age entering foster care is a significant predictor of subsequent adulthood educational achievement. The majority of children in foster care lack affectionate long-term bonding, which erodes their secure base for continued emotional and developmental progress. Attachment is something children and caregivers develop collectively (physiologically, emotionally, cognitively, and socially) in an enduring reciprocal relationship (Bowlby, 1969). Therefore, child-welfare, foster-care, and K–12 educational systems must establish interagency collaborative agreements that are specifically designed to service the unique mental health and developmental needs of children at the onset of their foster-care placement.

The majority of children in foster care attend public schools; few interagency instruments are able to facilitate successful remediation effects between child-welfare practitioners and school personnel. This interagency collaboration is of importance because currently a significant number of infants and school-aged children are entering the foster-care system, and a significant number will never be reunited with their biological families. Specifically, 71% of the current foster-care population is between the ages of 6 and 18, and the mean length of placement is 33 months (USDHHS, 2006). Hence, it is prudent that these children are placed in homes that will enable them to flourish developmentally, socially, and academically.
Enrollment in special-education classes and repeating a grade are significant predictors of subsequent adulthood educational underachievement. Foster-care agencies and school divisions should work together to provide timely intensive remedial and academic support to enable youth in foster care to pass state proficiency, psychosocial, and academic assessments and to obtain a standard or modified high school diploma. At present, 40% of adolescents in foster care have been diagnosed with cognitive, behavioral, physical, psychological, and medical disabilities that impede their academic-achievement outcomes; a figure significantly higher than their nondisabled peers (USDHHS, 2005). Further, according to Burley and Halpern (2001) students in foster care scored 16 to 20 percentile points below nonfoster students in statewide standardized tests. Therefore, it is recommended that school divisions offer the Advancement Via Individual Determination program to foster-care students, a program that has emerged as one of the foremost structured programs mediating underachievement of students who are economically struggling and/or first-generation college attendees who need additional tutorial support to complete a postsecondary degree program. Coneway (2006) found that the Advancement Via Individual Determination programs had a profound impact on student academic performance, which specifically increased the number of economically disadvantaged students completing a 4-year postsecondary degree program. Recently extensive literature (United Way of Broward County,
2004) supported that Interagency Agreement is a specific policy device that can have a significant impact on the educational achievement of youth in foster care. Foster-care agency directors along with the Director of Special Education at the school division should develop and implement a mechanism that will identify and track the needs of special-education students in foster care, one that will identify these special-education students who are older and will most likely emancipate from care or whose family-court judges have terminated parental rights. Lastly, findings indicate that foster-care alumni who are nonhigh school completers are significantly less likely to complete a postsecondary degree program.

5. Degree of preparation for leaving care is a significant predictor of subsequent adulthood educational achievement. The U.S. Government Accountability Office (1999a, 1999b, 2002, 2004) as well as numerous longitudinal studies (Children Now, 1998; Conger & Rebeck, 2001; McMillan, Rideout, Fisher, & Tucker, 1997; Pecora et al., 2000; Shin, 2003) cited specific disparities in accountability outcome measures in state-operated TILPs, and noted that availability of critical services in the area of mental health, supportive services, housing, and eligibility criteria for participation in independent-living programs vary nationally, especially in urban and rural localities. In addition, findings show the lack of empirical research on the effectiveness of public-agency TILP after-care services rendered to foster-care youth in their transition to adulthood.
These barriers contribute lower educational-achievement outcomes in adulthood. Therefore, it is recommended that independent-living programs nationwide employ the same curricular and participation criterion. U.S. congressional and state-legislature fiscal appropriators should only approve Chafee expenditures for empirically based practices and integrated therapeutic modalities, immediately implemented into independent-living programs and providing older youth with realistic transition plans that will lead to self-sufficiency. Additionally, the Federal Individual Disabilities Education Act mandates a TILP at the age of 14, embedded in the Individualized Education Program. TILPs must be fully implemented at the age of 16 for each student enrolled in the continuum of special-education services. More than 50% of youth in foster care are currently enrolled in the continuum of special-education services. Therefore, a serious commitment among the child-welfare, foster-care, and K–16 educational systems will ensure plans are transparent in the foster-home placement (i.e., kinship care, foster home, juvenile, correctional facilities, hospitals, groups homes, and residential-treatment programs) and will mandate that accountability standards are implemented. These struggling young adults need to be provided fundamental life skills as well as sufficient financial aid to interface with society upon emancipation from the foster-care system.

6. The degree of preparation for leaving care is a significant predictor of subsequent adulthood educational achievement and should result in never
being on public assistance since leaving care. Thus it was not surprising that not receiving public assistance since leaving foster care was associated with greater educational achievement. Securing a safe, affordable living arrangement is one of the most significant barriers for emancipated youth who were in foster care (Nixon & Jones, 2000). After emancipating from the foster-care system many young adults rent or share apartments with roommates, frequently other foster-care alumni (Courtney & Piliavin, 1998; Festinger, 1983). Approximately 10% (Cook, 1992, 1994) to 32% (Courtney & Piliavin) remain with foster parents or in group homes after turning 18 years old. Iglehart and Becerra’s (2002) reported about 46% of their sample were participating in Transitional Independent Living Programs, receiving stipends to secure housing. A number of seminal studies have documented that foster-care alumni experience a higher rate of mobility and change living arrangements more often compared to their peers in the general population who were not placed. Festinger reported that young adults moved three to four times in a 5-year period after emancipation from the foster-care system. Additionally, one-third of Cook’s (1990) seminal sample lived in five to eight different living arrangements after exiting the foster-care system. Reilly (2003) found a positive correlation between the incidences of placements during care and the chances of a higher unstable housing-mobility rate, which leads to a greater probability of being homeless after emancipation, compared with peers in the general population.
Furthermore, Reilly found that 36% of foster-care alumni reported that after emancipation they did not have the financial resources or functional relationships to secure a safe living arrangement. This often resulted in them becoming homeless young adults who sought welfare benefits, and in turn continued to be dependent, negatively influencing their subsequent educational-achievement outcomes. Therefore, it is recommended that foster-care agencies provide sufficient resources for young adults as they emancipate (e.g., $500 in cash for apartment furnishings) and make sure alumni have obtained a driver’s license or state identification card, social security card, and birth certificate that will enable them to seek employment (Pecora et al., 2005). Providing housing initiatives and other programs will prevent homelessness and ensure that alumni have supportive networks and emotionality to maintain healthy adult relationships. Alumni must have access to affordable housing before pursing any subsequent educational endeavor.

Summary of Transformational Evidence Based Policy Recommendations

The goal was to acknowledge the strengths of the interconnected subsystems and build on them to effectuate more comprehensive administrative decisions and public polices that will be significant to the very vulnerable foster-care population. There is a need to support emancipated youth beyond the comprehensive federal and state legislative mandates, policies, and procedures intended to improve services and programs to current youth in foster care and alumni. The current foster-care system where some youth stay in care too long must be overhauled to include theoretical models with
empirically tested competency programming to ensure that young adults who emancipate will have the necessary skills to become self-reliant. Numerous studies have found that each year, 30,000 18-year-old young adults are forcibly emancipated from the foster-care system and face an array of barriers to complete high school if they did not do so prior to emancipation. These young adults need and deserve to enter and graduate from a postsecondary institution.

The implications drawn from the aforementioned recommendations is that future scholarly research is warranted to focus on the relationship between academic performance of youth in foster care and the specific mandated services that are rendered to mediate positive educational-achievement outcomes. Policymakers must enact astute legislation; child-welfare practitioners and researchers must develop outcome measures of the effectiveness of transitional independent living (including measures of educational attainment, employment, avoidance of dependency, homelessness, nonmarital childbirth, incarceration, and substance abuse) that can be used to assess the performance of states that operate independent-living programs. The TILP criteria nationwide are dissimilar and there is a lack of case review and use of secondary data analysis, to assess what works in this program area.

Research Implications

This study found that a lower incidence of maltreatment, certain types of maltreatment, fewer placements, and fewer school transfers, were found to be significant predictors of alumni academic achievement. The primary working hypotheses that generated the research inquiry was supported by the data: attainment of a high school...
degree (graduation or GED) while still in foster care was also found to be positively correlated with adult levels of academic achievement.

Furthermore, the Casey population of adult foster-care alumni reflected the general societal trend of higher academic achievement for females in disadvantaged populations, perhaps reflecting greater maturity of female foster-care alumni at the age of emancipation, better job-market and employment prospects for young women entering the work force or applying for college, or superior academic skills and discipline being applied by young women entering higher education programs. On the other hand, of the seven primary hypotheses regarding factors influencing educational achievement, the only hypothesis not supported was that ethnicity would be a significant predictor of adult academic-achievement levels in this population. After confounding variables and influencing factors were weighted and accounted for, Casey Program alumni educational outcomes did not significantly differ by ethnicity: Hispanic, African American, and Other alumni performed as well as their White Non-Hispanic counterparts. This is a finding that may well be unique to the Casey program and its foster-care population.

Foremost, theoretical models that are implemented consistently will influence the educational achievement and self-sufficiency outcomes of foster-care youth. Various theoretical models can be combined to explain the life-span vulnerabilities and complexity to obtain positive educational-achievement outcomes. The first paradigm is a causal relationship between child abuse and neglect, consequential to the constructs in Bowly’s (1968) attachment theory. Bowly contended that problems in infant–caretaker relationships prevent developmental growth and impact long-term resilience competence in children and hinder other adulthood relationships (Fraser, 1998). The second paradigm
resulting from a developmental psychopathology framework are social learning and cognitive constructs (Fraser). Most studies in childhood psychopathology and correlated issues have investigated risk factors such as adverse health, education, and mental-health outcomes in cases of maltreatment. However, recent research has begun to focus on identifying factors that differentiate those who fail to develop adverse outcomes in spite of predisposed environmental factors (Fraser). Thus, the complexity of defining resilience remains; researchers' have collectively identified factors that seem to promote resilience in the face of adversity (Fraser). These factors include child aptitude and problem solving, gender, external interests, social supports, parental and caregiver attachment, temperament, and positive peer networks (Fraser).

This perspective suggests that children develop aggressive behaviors and experience cognitive impairments because of abuse. Maltreated children learn to be apprehensive of and antagonistic toward other children and adults, especially strangers (Fraser, 1988). They also develop negative self-concepts and low self-confidence. Additionally, there is a lack of evidence that correlates the experience of maltreatment leading children to develop resilience attributes to allow them to acquire positive economic self-sufficiency outcomes in their adulthood (Fraser, 1988). As a consequence, many maltreated children view the world as hostile, because their inability to solve problems and develop secure attachments places them at risk for predisposed intergenerational manifestation of parental behaviors such as academic failure, incarceration, and other pragmatic issues that impact their long-term self-sufficiency outcomes (Fraser, 1988).
The scope to which individual resilience attributes in the face of difficulties is correlated to developmental progression or a combination of these factors is inconclusive. It is may be possible that factors such as aptitude, temperament, and resilience may reflect causal inherited predispositions that increase resilience attributes in youth in foster care in the face of adversity.

Two areas of literature on children with developmental deficits are identified and explored. One postulates a correlation between developmental delays and maltreatment. The other finds an association between children with developmental delays and insecure attachments. The purpose is to investigate the correlates that influence a child with a developmental delay, attachment history, and risk of being maltreated in a transaction between both parental and child factors. In the case of children with certain types of developmental delays, poor parental attachment and extreme environmental factors predispose them to multiple forms of child maltreatment.

Particularly, the foster-care and adoptive populations suffer from attachment deficits because of the excessive maltreatment inflicted on them in their childhood (Weir, 2006). Bowlby, (1969; 1980) found that foster care and adoptive children display various attachment-related behaviors when they fail to develop parental or caregiver attachments. In fact, Bowlby (1969, 1980) stated that children in out-of-homecare placements progress to the various stages of dissent, despondency, and then detachment. This led to (Bowlby 1969, 1980) stating that children who fail to develop a secure attachment in their childhood will display anxious/ambivalent and anxious/avoidant attachment types in their adulthood, thus impairing economic self-sufficiency. Another issue impacting attachment type of youth in foster care is the frequent placement changes and aggressive behaviors
that affects their attachment with adoptive or foster-care parents. Hughes’ (1997) study found that foster-care and adoptive children display the following behavioral problems, which stem from unsecured attachment types at a higher rate compared to youth who are no in foster care: poor response to discipline, violent or aggressive oppositional-defiant deportment, ineffective communication, refusal to accept personal responsibility, poor planning/problem-solving abilities.

It is evident the exceeding theoretical paradigms offer conclusive evidence to support the need for therapeutic services and programs to be redesigned with measurable accountability in public child-welfare and foster-care agencies nationwide. Collins (2001) contended that evidenced-base modalities can mediate positive academic performance thereby increasing positive educational-achievement outcomes for at-risk children such as youth in foster care. Therefore, environmental factors such as race, gender, motivation, self-esteem, intellectual capacity, parental involvement, locality, and poverty can lead to academic underachievement. Often these derailments are not controlled by the children and if they are not corrected early most likely will have a devastating impact on adulthood developmental milestones. It is of essence that all TILPs employ integrated therapeutic theoretical models along with remedial intensive-educational components to help improve the secondary and postsecondary educational achievement outcomes for the nearly 30,000 young adults who are emancipated each year from the foster-care system.

Additional Recommendations Based on the Research and Practice Literature

This section will identify the most significant of these implications, propose various legislative or procedural changes in the current foster-care system, and explain possible ways to achieve these proposals.
New Legislation is Needed

This study found that youth in foster care suffer significant educational deficits resulting from current policies mandating complete emancipation at or shortly after they attain the age of 18 years. One practical implication of the study results is that foster-care advocates can support the changes in the foster-care emancipation law promulgated in the congressional legislation entitled Fostering Connections to Success Act (P.L. 110–351). These reforms for continuation of life-transition support for foster-care alumni after emancipation can only be enacted and implemented at the state legislative level. Also the study found that some key aspects of a private program such as Casey Family Programs are associated with improved educational outcomes for youth in foster care. The foremost question is, How can Casey Family Programs and others advocates help transform the public child-welfare system to enhance educational services and therapeutic models?

To achieve this, child welfare needs to adopt a broader framework to protect children from maltreatment. Historically there has been a major shift in public interest about child-welfare issues. Private child-welfare programs have played a major role in protecting and nourishing maltreated children who are placed in states’ custodial care. These agencies can contribute to this reform.

More Youth Counseling and Support are Needed

The findings of this study infer that childhood maltreatment, multiple foster-care placements, multiple school transfers, and failure to complete high school while in foster care are the most influential factors in lower adult academic achievement. Thus, foster-care programs and policymakers should consider whether more focused counseling, support, and educational services (tutoring, after-school programs, and special education)
should be made available to these subgroups in foster care during their critical years of development. These programs and services should be modeled after the Casey Family Program and other foster-care models that have been proven to work over the years.

Policymakers must also ensure that foster-care placement decisions will increase secure attachments for children, thus reducing continued trauma and invigorate permanent planning mandates. This will also reduce the number of foster-care placements, thereby reducing the number of school transfers and affording continuity in the schooling milieu.

Alternative Programs do Exist and Should be Implemented More Widely

Finally, the multiplicity of influencing factors in this study, and the long list of additional factors impacting educational achievement (see Table 4-16), all suggest that the overall problem of foster-care alumni educational deficits may not admit to a simple solution. Although it may not be possible to legislate child abuse, domestic violence, and child abandonment out of existence, policymakers should consider possible alternatives to foster care for children who have not suffered overt trauma or egregious harm from their parent(s) (Freundlich & Wright, 2003).

As public-agency foster care is overburdened and some state child-welfare agencies are rapidly moving toward privatization of their foster-care systems, states are looking at alternative ways to prevent disturbance of the innate 9-month bonding being mother and child. Because the state of California has the most youth in foster care, more than 100,000 children residing in foster care currently, the Casey Family Services, Chamberlain’s Multi-dimensional Treatment Foster Care, Pressley Ridge Schools, and Casey Family Programs’ therapeutic modalities and services should be implemented
more widely to ensure that children receive cultural and after-care services that will increase their achievement. For example, in the state of California, which has more than 100,000 mothers of minor children incarcerated in the penal system, a novel program allowing some nonviolent offenders to live with their younger children (age 6 and under) in facilities designed for this purpose has been implemented. Similar programs are now found in Nebraska, Massachusetts, and Ohio (Women, Children, and Prison, 2007). The United States is one of the few countries in the world where female nonviolent offenders are separated from their young children and children are routinely transferred to the foster-care system (Women, Children, and Prison, 2007). Together with increased efforts to place foster children with relatives and kin, such alternatives to foster care can relieve the burden of unwanted children, improper placement in foster care, and the attachment disorders resulting from loss of contact with kin and community.

These reforms seem to be occurring slowly, in a few domains and selected programs. At the same time, there are some bright spots in the overall foster-care picture that suggest the system itself is not inherently defective. Indeed, the Casey Program and its superior placement policies and standards appear to result in higher than average educational achievement and overall life outcomes, a positive example of the role that private foster-care programs can play in salvaging the lives of children who meet with trauma or abandonment early in life. Such foster-care examples may well offer constructive alternatives for supporting mothers upon release from incarceration.

Casey Family Programs have begun to support various system reforms in the public child-welfare system in several states to improve the training and performance of child-welfare and educational personnel, as well as help restructure therapeutic and
transitional services. Over the years, Casey Family Programs also has developed specialized after-care programs for older youth who have previously displayed a range of challenging behaviors (Casey Family Programs, 2003).

The next section provides a specific plan as to how the public child-welfare and educational systems can collaborate to improve academic achievement among children of color prior before emancipation. In this study 58.6% of the Casey alumni received a high school diploma or GED while residing in Casey Family Programs private-agency foster-care placements. Additionally, there was no significant difference in the educational achievement of White foster-care alumni and alumni of color. Furthermore, there was no significant difference in educational achievement relative to self-identified classifications of ethnicity.

The child-welfare and public-foster-care systems have failed to provide specific remedies to facilitate positive educational achievement for children of color. There are no recent national foster-care data on educational-achievement outcomes by ethnicity. The most recent national examination with respect to ethnicity and foster-care educational achievement and can be found in the Westat study in 1992. Current research suggests that children of color in foster care are more likely than those in the general population to have lower educational-achievement outcomes and to repeat grade level.

Research has uncovered a number of factors that account for these educational-achievement disparities, specifically among African American males (Murrell, 2002). For example, Murrell (2004) contended that ethnically germane pedagogy is considered necessary in closing the “black achievement gap.” It is evident that a significant number of educators lack cultural competence especially when teaching African American males
in the public educational system. I conclude after working for 10 years in 10 urban schools districts that most educators do not understand the associations among environmental psychosocial risk factors that foster-care students bring to the building in the daily impact their academic performance and subsequent educational-achievement outcomes. It has become widely accepted in the K–12 educational system for students of color, especially African American males, to display academic underachievement and fail state proficiency exams. Additionally a significant amount of research has speculated that African American student's lower academic performance is related to preexisting genetic cognitive disabilities, thereby postulating learning incapability despite protective factors implemented in the educational milieu. I argue that this perceived learning incapability of African American Students ‘blames the victim’ and supports a pervasive and longstanding institutional racism that has been pervasive and has contributed to lower educational-achievement outcomes of too many children of color (Murrell, 2002 Orfield, 2004).

Murrell (2002) introduced the teaching and learning of African-centered pedagogy. Clinicians and school personnel can recognize the trajectory of schools developing theoretical modalities as they move to bond with students of color. This pedagogy’s premise is to facilitate educational achievement, and its underpinnings are rooted in various educational theoretical frameworks (e.g., constructivist teaching, responsive teaching, child-centered learning, and cognitively guided instruction), and innovation (e.g., project-based learning and cooperative learning). According to Murrell the following six concepts are offered to facilitate evidenced-based African-centered
pedagogy that will augment positive educational-achievement outcomes among students of color in the K–12 educational system:

1. Accomplished teachers of African American/Black children create an academic milieu and cultural community in their classrooms that methodically provides the collective scholarly and cultural tools for inclusive and worthwhile instructional activities.

2. Accomplished teachers of African American/Black children create an instructional framework of learning, inquiry, and achievement, able to access and conceptualize the deep structure of ethnicities and culture, histories, languages, and life well enough to appropriate it in the structuring of the classroom academic milieu.

3. Accomplished teachers and counselors of African American/Black children postulate thematic ecological perspectives as broader processes than schooling—as a total process to promote cognitive, religious, moral, and social development competence among children of color, stewarding them to compete as competitive members of the global workforce.

4. Accomplished teachers and counselors of African American/Black children are critical consumers of contemporary programs, educational policies, and instructional practice, and interrogate them as a matter of daily preparation by asking “How does this practice or policy effect the underachievement of African American learners?”

5. Accomplished teachers and counselors of African-American children recognize that their instructional practices need to be innovative to address
specific growth areas of children of color and employ evidenced-based remedial strategies to augment educational-achievement outcomes and deconstruct the ways traditional pedagogy and existing instructional methodologies perpetuate underachievement of children of color.

6. Accomplished teachers and counselors of African American children routinely provide evidenced-based instructional activities that are culturally competent; they understand the struggle of past injustices, discrimination, and prejudices encountered by African Americans for centuries. They recognize human development as a process occurring concurrently in three domains: psychosomatic or intrapersonal, the social interpersonal, and the cultural.

Lastly, each of the constructs above reinterprets and adapts an existing paradigm in the framework of the African American historical, theoretical, educational, and linguistic tradition (Murrell, 2002).

Recommendations for Future Study

This research study offers the following recommendations for future inquiry, to improve the adult educational-achievement outcomes for children who are placed in foster care. Researchers, theorists, scholars, and policymakers should investigate factors related to areas of the underlying theoretical framework of attachment theory, to consider how different children in foster care may be impacted:

1. Examine and identify education-resiliency protective factors associated with child-maltreatment and determine how they both may impact educational-achievement outcomes of foster-care alumni adults.
2. Examine and identify protective-resiliency factors associated with foster-care alumni college and other postsecondary-education and training-completion rates compared with nonfoster-care graduates.

3. Examine and identify specific reasons why a substantial number of the foster-care population obtain GED credentials compared with nonfoster-care peers and develop an educational program that will increase high school completion rates.

4. Employ longitudinal studies or designs that include multivariate variables that provide more conclusive evidence of postsecondary completion among foster-care alumni adults.

5. Examine protective factors that increase foster-care alumni resiliency and interventions that could help reduce the impact of psychosocial risk factors, and that will lead to better informed decisions at all levels of the child-welfare system.

6. Examine the impact of the legislation and implementation of foster-care alumni-support services, to assist foster-care programs and support public policies that will help foster-care alumni make the difficult transition from high school graduation to adulthood, and improve educational achievement and employment.

Limitations

This research study is constrained by the following limitations and findings. The study was limited to the investigation of the correlations among the independent variables (status at emancipation, gender, ethnicity, age, number of placements, length of stay, and
the hierarchical variable, *type of abuse*) and the dependent variable of adult educational achievement. However, it is recognized that foster-care alumni educational achievement may also be influenced by factors not measured, such as the socioeconomic status of the birth family, racial discrimination, alumni resilience, key adult mentors or advisors, and the quality of foster-care placements. Thus, it is possible that the study subjects’ educational achievement has been adversely impacted by other intervening variables, and that these associated relationships should not be attributed to individual cases of adult educational achievement.

Some items in the Casey Family Programs data set provided to the author after IRB approval were constructed as categorical variables, for example the number of placements and school transfers. While a data set with continuous variables might have been preferable, the classification of the variables was already set; hence these data are not amenable to recoding to obtain a continuous-variable format. Thus the categorical coding of the data should have been continuous for number of school transfers, number of foster-care placements, and age entered child welfare, but because they are not continuous, a less accurate linear relationship may have resulted. The categories used for education are not specific enough to ascertain specific degree completion rates among alumni. This also is problematic for the finding of percentage of alumni who obtained an associate’s degree or higher because this was grouped in one distinct category. This researcher cannot ascertain which specific degree was earned by 88 alumni (e.g., bachelor’s, master of arts, master of science, master of education, master of business administration, doctor of law, medical doctor, doctor of social work, or doctor of business administration). The data set given to this researcher by the principal investigators of the
CNFCAS was coded specifically for logistical regression analysis. Therefore, if this particular set of educational outcomes analyses were replicated, variables should be recoded as continuous to facilitate a more accurate statistical analysis.

Data analyzed in this study were a subset of the Casey data and are not randomized or sampled in a manner so as to be closely representative of the entire United States foster-care population. The study relies upon a single set of existing secondary data; it is subject to all the limitations of reliability and validity of that type of data set. The Casey data are indeed unrepresentative in many respects, including those noted below.

To the extent that the study used interview responses and self-reported information for certain variables, its findings are not quantitatively verifiable and are subject to selective interviewee recall or interviewee bias and other common limitations inherent in qualitative research. Recognizing these limitations, the researcher does not represent the research design or data outputs of the study to be universally valid or generalizable to larger populations.

The response rate from the data-producing sample was not 100%, but 73.4%. Using the standards of the American Association for Public Opinion Research (2000), the minimum response rate was calculated by first removing the ineligible subjects, including alumni deceased (61), incarcerated (55), and institutionalized (11), from the 1,582 alumni finally meeting the study criteria. Therefore, the response rate was the ratio of the alumni interviewed (1,068) to alumni eligible and actually contacted (1,582), or 73.4%.

Comparisons between Casey and the larger population of children served in foster care in state agencies should be interpreted with caution. Casey field offices were not
operating under the workload pressures of achieving a permanent placement in the same way that public-agency staffs were. Youth in foster care referred to Casey were those that the state agency and juvenile court determined were unable or unwilling to be adopted or reunified with their parents. Casey staff had the goal of stabilizing and preserving the placement. However, it is important to mention the implication of services that alumni received from Casey's private-foster-care homes. These therapeutic services are more intensive compared to the services rendered to alumni by various nationwide public child-welfare agencies. Accordingly, the practice modalities that were employed by Casey Family Programs may have contributed to alumni's admirable self-sufficiency and academic-achievement outcomes (see Fanshel et al., 1990; Kessler et al., 2008).

The CNFCAS focal point was on foster-care alumni who had spent 1 year or more in out-of-home placement as adolescents between 1966 and 1988. Many of these youth tended to stay in care for longer periods of time, or enter care as adolescents (e.g., at age 16), and to emancipate from foster care in both public and private systems. This was a study of a group of alumni who spent a year or more in care as adolescents; as a result, participants do not represent the full spectrum of children served in foster care.

Educational achievement is an ongoing process and there is the possibility that some of the data concerning the educational achievements of some participants may be unavailable. Some alumni may have returned to school in later adulthood, for example, or dropped out before completion of a higher educational program and not mentioned that fact to an interviewer.
Having acknowledged all of these limitations to the methodology and study sample, however, it can be argued that any rigorous study of a large, diverse group of youth in foster care producing useful data on educational outcomes is worth undertaking.

There is a need to support emancipated youth beyond the comprehensive federal and state legislative mandates, policies, and procedures intended to improve services and programs to current and former foster care youth. The current permanent foster-care subsystem must be overhauled to include theoretical models with empirically tested competency programming to ensure that young adults who emancipate will have the necessary skills to become self-reliant. At present, the limitations of scope and format for any retrospective longitudinal data of youth in foster care are not a truly universal study of the problem; most foster-care data are compiled at the state level and subject to variations in demographics, definitions, and type of data collected. As such, private programs like the Casey foundation offer the advantages of a single, coherent, and consistent database.

Within the limitations described above, the author of this study maintains that the study and its findings are valid and reliable, and represent a potentially significant contribution to this field of study and the underlying social problems it examines. These findings may not be generalizable to the entire population of children in foster care in the United States, or even to the current generation of youth in foster care and recent alumni who are the persons of most concern to the research. This study demonstrates that outcomes are improved with specific types of programming and services. Nonetheless, any rigorous study of longstanding service-delivery patterns and factors influencing postsecondary completion among youth in foster care is potentially useful for insights
into how we might change policies and reorganize programs to improve academic-achievement performance and secondary and postsecondary outcomes in this at-risk population.

Conclusion

The foster-care system is tasked by American society both to educate and to protect children from maltreatment. Children who reside in foster care face extreme hardships in obtaining a high school diploma. The findings of this study shed new light on the need to continue foster-care support at least until high school graduation, rather than using age 18 as an arbitrary cutoff. Fortunately the new federal law that was passed in 2008—Foster Connections to Success (P.L. 110-351)—enables states to draw on federal funds to assist in this effort. The effect of age extension can be significant in increasing educational-achievement outcomes. Furthermore, this study found that the majority of the alumni received therapeutic foster-care service from a private agency that developed specific programs that offered higher quality services, lower caseloads, and higher salaries made a significant difference with regard to the transitory nature of this subgroup of emancipated young adults between 1966 and 1998. The 18-year-old young adults are often forced to emancipate without sufficient resources and support networks. The aforementioned policy prescriptions target developing an ecological client/student-focused child-welfare and educational delivery system; to work together, coordinate, and deliver supports that address the unique needs of children placed in foster care, as well as ensure that older youth are adequately trained for self-sufficiency prior to emancipation and afforded opportunities to complete postsecondary-training programs.
Federal and state public foster-care programs will continue to be unsuccessful and alumni will not be afforded an opportunity to succeed if criteria and accountability measures are not revised. In contrast, 58.6% of the Casey alumni received a high school diploma or GED while residing in Casey Family Programs private-agency foster-care placements. Chafee provides states with flexible funding that can be used for programs that assist youth in obtaining an education and high school diploma; and most recently, it targets additional fiscal expenditures for states to offer postsecondary education and training vouchers. Employing preventative polices rather than reactive polices and programs helps youth in foster care transition to adulthood and educational-achievement outcomes that will enhance their ability to become productive members of the global workforce and reduce state and federal fiscal incarceration expenditures. Some experts and policymakers may say that these additional years in foster-care custody will not make much of a difference. This study is counter to that perspective and it is supported by a new set of cost-benefit calculations based on the Midwest study using projections if youth were allowed to stay in foster care beyond age 18 in California (Courtney, Dworksey, & Peters, 2009). It is evident that this proposal will increase fiscal expenditures at the federal, state, and local child-welfare levels. Nevertheless, if youth in foster care are not given the opportunity to acquire self-sufficiency skills and educational-achievement outcomes before emancipation, they are likely to continue to be incarcerated at troubling numbers. Incarceration increases state and federal fiscal expenditures. Employing preventative polices rather than reactive polices and programs helps foster-care alumni transition to adulthood and obtain secondary and postsecondary educational-
achievement outcomes that will enhance their ability to become productive members of the global workforce.
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APPENDIX A:
ALUMNI OUTCOMES AND RESPONSE RATES, BY SAMPLE
Table A1

**Alumni Outcomes and Response Rates, By Sample**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Casey national</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample size</td>
<td>1,582</td>
</tr>
<tr>
<td>Deceased by the time the study location effort began</td>
<td>61 (3.9%)</td>
</tr>
<tr>
<td>In prison at the time of contact for an interview</td>
<td>55 (3.5%)</td>
</tr>
<tr>
<td>In a psychiatric or other institution at the time of contact for an interview</td>
<td>11 (0.7%)</td>
</tr>
<tr>
<td>Number of eligible alumni</td>
<td>1,455</td>
</tr>
<tr>
<td>Not located by the end of the field period</td>
<td>324 (20.5%)</td>
</tr>
<tr>
<td>Refusals</td>
<td>63 (4.0%)</td>
</tr>
<tr>
<td>Interviews</td>
<td>1,068 (67.5%)</td>
</tr>
<tr>
<td>Response rate (after removing deceased, in prison, and in institution: 1068/1455)</td>
<td>73.4%</td>
</tr>
</tbody>
</table>

*Note.* People in correctional or mental health institutions could not be interviewed. This “traditional” response rate subtracts those in prison, those in psychiatric institutions, and the deceased from the sample size: interviews + (sample – deceased – in prison – in institution; Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys, American Association of Public Opinion Research, 2005, Ann Arbor, MI: Author.*
APPENDIX B
VARIABLE CODING LIST
<table>
<thead>
<tr>
<th>Variable</th>
<th>Type</th>
<th>Measurements</th>
<th>Coding</th>
<th>IV or DV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational level achieved</td>
<td>Categorical</td>
<td>NO grad</td>
<td>0</td>
<td>DV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GED</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HS grad w/diploma</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>vocational</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>bachelors</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>graduate</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>HS completion prior to</td>
<td>Categorical</td>
<td>No</td>
<td>0</td>
<td>IV</td>
</tr>
<tr>
<td>emancipation</td>
<td></td>
<td>Yes</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Categorical</td>
<td>Male</td>
<td>1</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>Continuous</td>
<td>Years old at interview</td>
<td></td>
<td>IV</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Categorical</td>
<td>Black</td>
<td>1</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Native/other</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hispanic</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asian</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>White</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Foster care placements</td>
<td>Categorical</td>
<td>Number of different FC placements</td>
<td>1</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 or more</td>
<td></td>
</tr>
<tr>
<td>Maltreatment-type of abuse</td>
<td>Categorical</td>
<td>None</td>
<td>0</td>
<td>IV</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Neglect or emotional abuse</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Physical only</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sexual only</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multiple abuses</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C
SUPPLEMENTAL METHODS MATERIAL
Agency Description

The focus of this study was a model of long-term family foster care that was delivered by Casey Family Programs (Casey) from 1966 to 1998. Casey, headquartered in Seattle, is a national operating foundation that supports families, youth, and children through direct services and through collaborations with other organizations and agencies.

In 2002, Casey served over 17,000 youth through 23 major field offices by providing a variety of permanency planning (planned long-term foster care, guardianship, adoption, kinship care), prevention (services to families with mental health and substance-abuse treatment needs), and transition services for youth emancipating from foster care, and over 32,000 youth and their caregivers participated in life-skills planning by completing the on-line Ansell Casey Life Skills Assessment (ACLSA). Casey was established in 1966 by Jim Casey, the founder of United Parcel Service. Planned long-term foster care for children for whom adoption and family reunification were not viable alternatives was the primary mission of the program (with increasing use of kinship care and guardianship). The fundamental outcomes of the program emphasized equipping “young people with the skills to form and sustain significant positive relationships, to effectively parent their own children, to participate responsibly in their communities, and to sustain themselves economically.” In 1998, Casey served over 1,500 children in 23 communities in 13 states, with virtually all of the youth served through participation

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1 See www.caseylifeskills.org.
2 Casey Family Programs (2005), p. 4.
agreements with public child-welfare agencies. Over 90% of the social work staff had M.S.W. degrees, and caseloads (approximately 16 cases per worker) were slightly lower than most public agencies but higher than treatment foster-care caseloads.

A range of counseling and other services were provided to foster families and children over a long period of time, depending on the unique needs of the child. Worker turnover was 6% or lower per year rising to about 10% in 1998. This is low, compared to public child-welfare agencies, which averaged 18% according to one study. Foster parents were paid room and board and clothing allowances that generally provided for what children in foster care need for their upbringing.

In contrast to many public foster-care programs, youth placed with Casey were supported financially to participate in a variety of special activities such as the arts, sports, and other hobbies. Each youth was eligible to apply for special postsecondary-educational or vocational-training scholarships. Each year over 100 youth received this support as full-time students, with other young adults receiving part-time educational support. Attention was paid to helping youth reach major developmental milestones, including developing social skills through participation in various community groups and events such as scouting, summer camps, church groups, and employment experience.

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3 Casey changed its name in 2000 from “The Casey Family Program” to “Casey Family Programs.” In 2003, Casey began a process of restructuring that will reduce the number of offices by about half, raise worker caseloads to Council of Accreditation (COA) standards of about 18 children per worker, increase the ratio of BSWs to MSWs, lower service cost, and expand its programs in kinship care, transition services, and systems improvement, including prevention and family support.

4 Treatment foster care is generally a more intensive approach to foster-care services with smaller worker caseloads and greater foster-parent training requirements. See for example, Meadoweroff, Thomlinson & Chamberlain (1994.)

5 See Ezell et al. (2002).

Foster-parent training was frequent, and there was at least monthly child-social worker contact. Foster-parent satisfaction was relatively high, and turnover was fairly low.7

Participants

Participants in this study were a subpopulation of the Casey National Alumni Study, an examination of alumni served by Casey. Included in the study were alumni who had been served by one of the 23 Casey field offices between 1966 and 1998.

The study included adults who received services from the field offices in these states and cities:

<table>
<thead>
<tr>
<th>Arizona (Phoenix, Tucson)</th>
<th>Oklahoma (Oklahoma City)</th>
</tr>
</thead>
<tbody>
<tr>
<td>California (Walnut Creek/Bay Area, San Diego)</td>
<td>Oregon (Portland)</td>
</tr>
<tr>
<td>Hawaii (Hilo, Honolulu)</td>
<td>South Dakota (Pine Ridge, Rapid City, Rosebud)</td>
</tr>
<tr>
<td>Idaho (Boise)</td>
<td>Texas (Austin, San Antonio)</td>
</tr>
<tr>
<td>Louisiana (Baton Rouge)</td>
<td>Washington (Seattle, Tacoma, Yakima)</td>
</tr>
<tr>
<td>Montana (Helena, Missoula)</td>
<td>Wyoming (Cheyenne)</td>
</tr>
<tr>
<td>North Dakota (Bismarck, Fort Berthold)</td>
<td></td>
</tr>
</tbody>
</table>

Measures

Data were collected by two means: case records and interviews.

*Case records.* Case records provided demographics, risk factors (information that placed alumni at risk for long-term problems e.g., child maltreatment by the birth family, the reason for initial placement), and foster-care experiences (e.g., number of placements and length of time in care). Child-maltreatment data were recorded using operational definitions of abuse and neglect variables defined by the Barnett Coding System for type and severity of child maltreatment, and modified for use by the LONGSCAN project (Modified Maltreatment Classification System; Barnett, Manly, & Cicchetti, 1993;

7 See Doucette, Tarnowski, & Baum (2001); Le Prohn, Barenblat, Godinet, Nicoll, & Pecora (1996); Le Prohn & Pecora (1994); Vaughn (2002).
Trained reviewers used a structured form and were required to achieve a high level of agreement with their trainers. To maintain reliability of reviews, approximately 10% of all records were randomly selected for a second reading by a gold-standard rater (a highly trained staff member involved with data management, coding, and training for the reviews). Only case-record variables with acceptable interrater reliability (as determined by Cohen’s Kappa or by interrater correlations) were retained.

Foster Care Placements.

Definitions of living situations and placements vary based on federal rules, perspectives (e.g., youth, agency, or researcher), and frameworks. For this study, a child’s living situation was defined as the place where the child lived, and what was viewed by the caseworker as the child’s “home”—temporary or not. Following the Federal and the Child Welfare League of America National Data Analysis System work-group definitions (Woodruff, 2004), the study considered the following living situations to be distinct placements: initial shelter care, foster care, kinship care, treatment foster care, group homes, residential treatment, independent living placements, adoptions, and juvenile-justice placements once the youth is under child-welfare-agency supervision (not juvenile justice as an initial placement).

Interviews

In addition to providing additional demographics (i.e., ethnicity, gender, and age) and data on risk factors, interviews provided information on foster-care experiences such as number of school changes, access to therapeutic services and supports, having a close and confiding relationship with an adult while growing up, feeling loved while in foster
care, and child maltreatment by the foster family or other caregiver. Much of the interview assessed mental health outcomes, which were measured by the Composite International Diagnostic Interview (CIDI), a structured psychiatric interview with high reliability and validity (World Health Organization, 1996); these outcomes are not reported in the current paper (for a summary of mental health findings, see Pecora et al., 2003).

Outcomes assessed during the interview and reported in the current paper included, among other topics, completion of high school, completion of college, employment, and receipt of public assistance. On average, interviews took 2.5 hours to administer. The full interview schedule can be accessed on an extranet site at http://research.casey.org (username: researchguest; password: caseyguest).

A random set of interviews was audiotaped and reviewed by study coordinators for adherence to the interview protocol. As an additional quality-assurance check, some respondents were telephoned by study coordinators after they had completed the interview, to verify their responses.

Procedures

Prior to data collection, the University of Michigan’s IRB approved the study protocol. Case records were reviewed for alumni. For case records, trained raters with no knowledge of the hypotheses of the study individually read and recorded the information from case records. Only variables that had acceptable interrater reliability (as determined by Cohen’s Kappa or by interrater correlations) were retained. Starting with the basic information obtained in case-record reviews, a variety of methods were employed to locate and interview alumni, including database searches, phone calls, multiple letters,
and other techniques (Williams et al., 2006). Interviews were completed for alumni between September 2000 and January 2002. Professionally trained staff from the University of Michigan Survey Research Center (SRC) administered the interview. Prior to interviewing, alumni were asked to sign or provide informed consent verbally, stating they were aware of the benefits and risks of participation.

How Representative of Other Foster Care Alumni is the Casey Sample?

Despite efforts to quickly secure permanent homes, over the past 3 decades many youth have spent multiple years in care. For example, in 2001, 51% of the youth who were placed in out-of-home care in America spent 1 year or more in placement; over 27,000 spent 5 years or more in care in 2001.\(^8\) Alumni in the current study spent an average of 10 years in foster care. The considerable lengths of stay of the long-term youth is not typical of foster youth today, although about 10% of youth leaving foster care in the United States continue to have such extended placement histories. A sizable group of Casey alumni (25.5%) were youth who stayed between 1 and 4 years in foster care. The lengths of stay for these youth are much more like the current national foster-care population. Both of these groups include children for whom society invests a substantial amount of money because of their length of stay in foster care and the services provided. Knowing what factors are linked with successful developmental outcomes and independent functioning would also help agencies and their communities’ better plan and prioritize services for emancipation.
