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Adaptive Behavior Assessment of Ethnically Different Children Referred for Special Education Services

Kelly C. Moynahan
Walden University

Walden University

College of Social and Behavioral Sciences

This is to certify that the doctoral dissertation by

Kelly Moynahan

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Eric Riedel, Ph.D.

Walden University
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MS, Walden University, 2014

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

According to the Centers for Disease Control and Prevention, approximately 1 in 6 children are diagnosed with a developmental disability or with developmental delays, which are associated with impairments in physical, language, cognitive, and/or adaptive behaviors. To fill a gap in the literature, the adaptive profile of young children initially served as developmentally delayed (DD) were analyzed to explore adaptive differences between different ethnicities and placement settings of children at the time of the initial referral prior to DD assessment. Archival data included 333 preschool aged children. The independent variables of eligibility status (DD or not DD eligible), ethnicity (White, Black, or Hispanic), and placement setting prior to testing (home, daycare, or school) and the dependent variable of Adaptive Behavior Assessment Scale-II Parent/Primary Caregiver Form General Adaptive Composite (GAC) standard scores were used. Three 1-way ANOVAs indicated a significant difference between the 2 levels of eligibility status. There was no difference for the 3 levels of ethnicity. There was a significant difference in GAC scores between public school setting versus home setting but not between daycare setting versus public school and home settings. To effect positive social change, knowledge from this study highlights the need to increase professional and public awareness of early identification of DD children; the importance in mandating competent care by highly trained individuals; and the impact of educating parents, daycare professionals, educators, and other providers about the role of social learning on development and mastery of functional life skills for all young children.

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Chapter 1: Introduction to the Study

Early developmental concerns can manifest into lifelong, neurologically-based conditions resulting in the need for numerous services to address identified developmentally-based delays (Zablotsky, Black, Maenner, Scheive, & Blumberg, 2015). Understanding the adaptive profile of young children initially served as developmentally delayed (DD) can help provide a guideline for educators, parents, and daycare providers involved in the daily functioning of children. The current practice of identification for special education services among young children aged 2-years 10-months and older falls under the Federal Guidelines of Child Find; therefore, it is the public school system's responsibility to conduct evaluations (North Carolina Department of Public Instruction [NCDPI], 2010).

Adaptive behavior assessment is a required evaluation component for determining whether or not a young child is eligible for special education services as DD. In the literature associated with young children, previous research findings address adaptive behavior in the context of profiling an intellectual disability (ID; Papazoglou, Jacobson, McCabe, Kaufmann, & Zabel, 2014), Traumatic brain injury (TBI; Ganesalingam et al., 2011), fetal alcohol syndrome (FAS; Motz et al., 2012), and autism (AU; Lopata et al., 2012). Upon investigation, I was unable to locate any studies addressing adaptive behavior profiling as a tool in understanding the differences between the DD eligible and the nonDD eligible children.

Regarding young children in the ID and AU populations, previous research reviewed and examined differences in the adaptive behavior reported by parents and

teachers (Hundert, Morrison, Mahoney, & Vernon, 1997; Szatmari, Archer, Fisman, & Streiner, 1994) as a predictor of special education success (Daley & Carlson, 2009) and as a measurement tool to address the effectiveness of toddler-based programs (Booth-LaForce & Kelly, 2004; Shin et al., 2009). However, I located no studies that reported parent adaptive behavior assessments of DD across different ethnicities and adaptive behavior across different placement settings— home, community daycare, and public school program—prior to testing.

Background of the Study

Adaptive functioning data has always been an integral part of diagnosing and/or classifying a child with DDs (Meikamp & Suppa, 2005). This practice dates back to the late 1800s and early 1900s, a time when information regarding an individual's moral behavior, basic academics, vocational skills, and social proficiency was considered when determining if an individual was intellectually disabled (National Research Council, 2002). The more modern-day description emerged in the mid-1900s, a time when information regarding a child's performance abilities of daily life functioning skills was emphasized.

One of the earliest definitions of adaptive behavior was introduced by Herber in 1961 (as cited by Mealor & Richmond, 1980). Herber believed intellectual deficits automatically assumed impairments in adaptive behavior. For Herber, a deficit in adaptive behavior functioning meant individuals had little or no ability to independently and effectively maintain themselves in a manner consistent with ethnic and social expectations, including individual personal care demands (Mealor & Richmond, 1980).

In 1973, Grossman, a member of the American Association of Mental Deficiency**,** deemed that any individual with an intellectual deficit must have a coexisting impairment in adaptive functioning to meet diagnoses and/or eligibility status (as cited by Mealor & Richmond, 1980). Today the definition of adaptive behavior is influenced by two residing bodies: The American Association on Intellectual and Developmental Disabilities (AAIDD) and *The Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*).

The AAIDD (2012) indicates adaptive behavior refers to how effectively an individual can traverse each day with common tasks as well as meet the challenges in the conceptual, practical, and social constructs as compared to same aged typical peers (Parritz & Troy, 2014, p. 99). The *DSM-5* (2013) adopted and integrated the AAIDD definition, recognizing the need of adaptive assessment across these contextual domains when assessing a child for an intellectual deficit. The *DSM-5* specifically states adaptive assessment should be conducted with data supporting an underlying adaptive behavioral condition (Parritz & Troy, 2014, p. 110). The AAIDD places emphasis on a holistic approach to adaptive behavior focusing on the extent of needed support. The *DSM-5* quantifies the approach to include data-based results with severity of functioning based on adaptive abilities.

Describing the development of adaptive behavior in children requires a marginal understanding of Bandura's social learning theory. As an underlining methodology associated with the development of adaptive skills, social learning theory posits that children learn behaviors from adults through observations, imitation, and modeling.

Learning requires the use of cognitive functioning on the part of the child, such as, memory, attention, rehearsal, and motivation (Bandura, 1986, pp. 47-51). Combined with observation and cognitive functioning, the presence of a reinforcement or consequence influences the child's motivation to perform or not perform a particular adaptive behavior or skill; as well as determines the emotional reaction to a task and whether the child displays a certain posture or attitude (Bandura, 1986, p. 68).

Problem Statement

U.S. federal and state guidelines support the assessment of adaptive behavior skills for children being referred for DD evaluation. Researchers have noted the importance of understanding the dynamics surrounding assessment outcomes for ID (Papazoglou et al., 2014), TBI (Ganesalingam et al., 2011), FAS (Motz et al., 2012), and AU (Lopata et al., 2012) populations. The empirical literature lacks information regarding the importance of those assessment outcomes as they relate to the DD population. An initial review of the literature highlights both a gap in information regarding the DD population profile and whether adaptive behavior skills differ between children of different ethnicities. In addition, there is a gap in information regarding the role placement setting prior to testing plays in adaptive behavior ability. Therefore, the problem is, while psychologists know the importance of understanding the adaptive profile for some childhood disabilities, they do not know how the adaptive profile relates to the most common school-based disorder, which is, DD. If this information were known, it might provide psychologists with the evidence they need to engage in a deeper level of scale analysis, to identify those differences that are unique to the DD population

as reflected in a specific ethnic dynamic, and to gain insight into how the differences relate to a child's physical placement setting prior to testing.

Purpose of the Study

The purpose of this quantitative study was to investigate whether there were differences in adaptive behavior characteristics associated with DD eligible children, children from different ethnicities, and different placement settings prior to assessment. The independent variables were eligibility status (DD or not DD eligible), ethnicity (White, Black, Hispanic), and placement setting prior to testing (home, daycare, school). The dependent variable was the General Adaptive Composite (GAC) standard scores on the Adaptive Behavior Assessment System (2nd ed.; ABAS-II) Parent/Primary Caregiver Form which is described in greater detail in Chapter 3. Understanding these differences could aid the Individualized Education Program team (IEP team) as it makes decisions associated with eligibility, placement, services, goals, program modifications, and individual accommodations. Overall results were focused on determining any significant differences between ABAS-II Parent/Primary Caregiver GAC standard score across DD versus nonDD eligible children, children from different ethnic groups (White, Black, Hispanic), and children attending different placement setting prior to testing (home, daycare, school). Ultimately, results provide greater insight into the gap in DD adaptive skills knowledge.

Nature of the Study

The archival data included adaptive behavior of 333 young, rural children, aged 2 years, 10 months to 5 years, 8 months, referred for DD evaluation according to Child

Find laws. Adaptive behaviors were assessed using the ABAS-II Infant and Preschool Forms (aged birth to 5 years), specifically, the Parent/Primary Caregiver Form. Spanish versions were utilized as needed. The ABAS-II is a comprehensive, norm-referenced measure that assesses a child's level of adaptive functioning in nine areas and is a helpful tool in identifying adaptive skill strengths and limitations across settings. In addition to GAC, the ABAS-II provides scores in the conceptual domain (receptive and expressive language, reading and writing, money concepts, self-direction, etc.), social domain (interpersonal relationships, responsibility, following rules, obeying laws, etc.), and practical domain (basic maintenance activities of daily living, housekeeping, money management, etc.). The Parent/Primary Caregiver Form GAC standard score comprises the three domain scores for the Parent/Primary Caregiver Form.

The ABAS-II Parent/Primary Caregiver Form GAC standard score was the dependent variable for this study. Because of a deficiency in true random assignment, I implemented a quasi-experimental, quantitative design in the study to examine the differences between the dependent variable, Parent/Primary Caregiver Form GAC standard score on the ABAS-II, and the independent variables which are eligibility status (DD or not DD eligible), ethnicity (White, Black, Hispanic), and placement setting prior to testing (home, daycare, school). All data was collected during the school years 2006-2007 to 2015-2016 as part of a comprehensive evaluation referred to a licensed psychological associate and school psychologist II working for Psychological and School Services of Eastern Carolina, PLLC (PASSEC) by a public school system located in a rural, highly agricultural area within the Southeast demographic of the United States. All

ABAS-II protocols were previously administered by a third party and scored using approved the ABAS-II Scoring Assistant (Harrison & Oakland, 2003b) program prior to being interpreted by the licensed psychological associate and school psychologist II.

Research Questions and Hypotheses

The research questions explored the differences between GAC standard score on the ABAS-II Parent/Primary Caregiver Form and different levels of the independent variables, namely, DD eligibility status (DD eligible and noneligible), three ethnicities (White, Black, Hispanic), and three different placement settings prior to testing (home, daycare, school). Data was archival.

RQ1: Are there significant differences in GAC standard score between children eligible for special education services as DD and those not eligible for services based upon ABAS-II Parent/Primary Caregiver Form?

$H_0$1: There are no significant differences in GAC standard score between children eligible for special education services as DD and those not eligible for services.

$H_1$1: There are significant differences in GAC standard score between children eligible for special education services as DD and those not eligible for services.

RQ2: Are there significant differences in GAC standard score between children from different ethnicities (White, Black, Hispanic) based upon ABAS-II Parent/Primary Caregiver Form?

$H_0$2: There are no significant differences in GAC standard score between children from different ethnicities (White, Black, Hispanic).

$H_1$2: There no significant differences in GAC standard score between children from different ethnicities (White, Black, Hispanic).

RQ3: Are there significant differences in GAC standard score between children placed in different placement settings prior to testing (home, daycare, school) based upon ABAS-II Parent/Primary Caregiver Form?

$H_0$3: There are no significant differences in GAC standard score between children placed in different placement setting prior to testing (home, daycare, school).

$H_1$3: There are significant differences in GAC standard score between children placed in different placement setting prior to testing (home, daycare, school).

Theoretical Base

Adaptive behavior describes a set of abilities associated with daily functioning and the extent to which an individual independently performs age-appropriate skills, typically meets developmental milestones, functions academically, acts responsibly in a myriad of situations, and assumes social responsibility and adjustment. Bandura's social learning theory is an underlying theoretical perspective associated with the development of adaptive skills in children. Social learning theory posits that children learn behaviors from adults and one another through observations, imitation, and modeling (Bandura, 1986, p. 47). The basis for utilizing adaptive assessment as part of the DD protocol is

based on federal legal proceedings translated, transformed, and interpreted by the local education agency (LEA) into policy and procedure (Ditterline & Oakland, 2009).

From a principled perspective, it is important that the use of adaptive behavior assessment for diagnostic purposes be driven by ethical principles. Diagnosis based on data collected from rating measures should be viewed and interpreted in light of an individual's ethnic identity, ethnic expectations, and community customs (Ditterline & Oakland, 2009; Luckasson, Schalock, Snell, & Spitalnik, 1996). Therefore, if a group of children from the same ethnicity and region display a relative weakness, the possibility of bias should be considered and reviewed. While adaptive functioning is commonly utilized to determine a diagnosis, the ultimate benefit of evaluating it is to provide practical and functional data to caretakers and teachers as they formulate treatments and interventions (Ditterline & Oakland, 2009).

Operational Definitions

This study used the following terms when describing background, variables, methods, and findings in this study.

Adaptive behavior: Adaptive behavior refers to how effectively an individual can every day traverse common tasks as well as meet the challenges within the conceptual, practical, and social constructs as compared to same aged typical peers (Parritz & Troy, 2014, p. 99).

Child Find: Each LEA must establish policies and procedures that ensure all children aged three to 21 who have disabilities and reside in the LEA district are identified, located, and evaluated. This includes children who are homeless or wards of

the state who are in need of special education and/or related services and all disabled children regardless of the severity of their disability. It also includes all children who are homeschooled or whose parents have placed them in a private school, daycare, or charter program located in the LEA district. Child Find must also include those children who are suspected of being disabled and in need of special education even though they are advancing from grade to grade and children who are highly mobile or transient, including migrants and immigrants (NCDPI, 2010).

Department of Public Instruction (DPI): The State Department of Public Instruction administers the policies adopted by the State Board of Education which is guided by the Federal Department of Education. DPI offers personal support, financial funding, technological assistance, and instructional guidelines to all public school systems in the state (NCDPI, 2010).

Developmentally delayed (DD): A child may be defined as having delayed patterns of development in one or more of the following five skill areas: physical, cognitive, communication, social/emotional, and/or adaptive. The criteria for determining delayed development for children aged three through seven are test performance of 2 standard deviations below the mean on standardized tests in one area of development or test performance of 1.5 standard deviations below the mean on standardized tests in two areas of development. Percentage-of-age delays are also appropriate when determining DD: 30% delay in one area of development or 15% delay in two areas of development. Identification of these children for eligibility as DD must be based on informed educational or clinical opinion and appropriate assessment measures (NDPI, 2010).

Individualized Education Program (IEP): The IEP is a written statement that is developed, reviewed, and revised at least once a school year in accordance with state law detailing an individualized plan for each child with a disability (NCDPI, 2010).

Individualized Education Program team (IEP team): The IEP team comprises individuals consisting minimally of an LEA representative, a parent of a child with a disability, a regular education teacher of the child, and a special education teacher of the child. The team is responsible for developing, reviewing, and revising an IEP for a child with an identified disability (NCDPI, 2010).

Local education agency (LEA) representative: The LEA representative is a school employee who, if all state law criteria are satisfied, is designated by an LEA to be a member of the IEP team and to serve as the LEA's representative on that team (NCDPI, 2010).

Assumptions

In this study, I assumed that when the archival data was originally collected, the responders answered the questions truthfully and accurately based on their experiences and direct observations of the child to the best of their individual abilities and knowledge. I assumed the raters had accurate knowledge of the child's behavior. It should be noted that, during the original collection, a reader or an interpreter was provided to those individuals who could not read the ABAS-II Form and a staff diagnostician was available for clarification of directions and questions that any rater perceived to be confusing.

Limitations

Because of a deficit in true random assignment, I used a quasi-experimental design rather than a classic experimental design (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008). Utilizing three one-way ANOVAs, I examined results for group differences followed by conclusions on generalizations regarding the population being studied. Information from quasi-experimental design allowed me to gather additional information that was relevant in this current study (Frankfort-Nachmias & Nachmias, 2008). This information included understanding the relevance of natural setting, identifying genuine responses not influenced by an artificial research setting, and reviewing general trends in adaptive behavior skills of preschool aged children (Campbell & Stanley, 1963).

Positive aspects of quasi-experimental design include a low threat to external validity, the generalization of research to other environments and natural settings, and the manipulation of independent variables (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008). Though these positive aspects are identified by Creswell (2009) and Franfort-Nachmias and Nacmias (2008), researchers should utilize caution when generalizing the results of this current study to other populations because the targeted population in this study consists of participants from a rural, highly agricultural area within the Southeast demographic of the United States.

Negative aspects of the quasi-experimental design include the following: challenges to internal stability: hidden variables, confounding or extraneous variables, situational variables; response and belief of the participant; and assumptions about causal

relationships (Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008). To address internal validity, a researcher can use statistical techniques if confounding variables can be identified; therefore, conclusions of the quasi-experimental design are more accurate (Frankfort-Nachmias & Nachmias, 2008).

In terms of the ABAS-II, limitations were not presented by test reviewers Burns (2005) and Meikamp and Suppa (2005). Researcher reviewers noted that the ABAS-II was well researched and developed, outperforming the typical level of test development. Validity and reliability coefficients were strong and comparable to other adaptive behavior measures (Burns, 2005; Meikamp & Suppa, 2005). Scores can be interpreted and utilized with confidence and assurance (Burns, 2005). Test measure validity and reliability are reviewed in more detail in Chapter 3.

Scope and Delimitations

A respondent completing an adaptive measure for a particular child is influenced by some degree of self-bias (Bloom & Zelko, 1994; Szatmari et al., 1994). Some respondents may view the behaviors of a child as markedly different than typical expectations when developmental status is in question. Literature has shown that teachers have a lower threshold than parents when deciding whether or not a particular adaptive behavior item is present or not (Szatmari et al., 1994). Parents may also have a secondary gain bias. Because the adaptive behavior assessment is an integral part of the evaluation for DD eligibility, parents may have completed the checklist in a manner that they believe will increase the chance of obtaining eligibility for education and related services for their child.

Bias may also be associated with placement. Placement context and perceived outcomes may also influence whether and how respondents observe and assess targeted behaviors (Szatmari et al., 1994). Furthermore, negative environmental issues can impact and even mask a valid representation of actual adaptive functioning abilities (Bloom & Zelko, 1994). Finally, while not investigated in this study, bias can also be associated with mental health conditions. As a moderating factor, a family history of depression accounts for differences in adaptive scores among high functioning autism spectrum disorder (HFA) children and has a direct impact on overall social skill functioning (Mazefsky, Williams, & Minshew, 2008). For this study, this type of bias was not reviewed during the school referral process.

A delimitation of this study was that the original collected study participants were all referred through Child Find. Therefore, all of the children were suspected of having a DD and no children without a suspicion of DD were included in this study. When the original archival data was collected, all children were referred for possible delays in development so results may not be consistent with potential findings in nonreferred children. Furthermore, the original archival data collection was conducted in a rural, highly agricultural area within the Southeast demographic of United States. Therefore, this population may not generalize to populations of dissimilar geographic locations.

Significance of the Study

Current empirical research in the area of adaptive behavior specifically associated with DD population is minimal. Several studies have identified the adaptive profiles of other childhood disorders while other studies have added to the interrater correlation

body of literature. I did not find adaptive behavior profiling as a tool in understanding the differences between the DD eligible child and the nonDD eligible child in the current empirical data. In addition, I found no studies addressing parent and teacher agreement in the adaptive behavior assessment of DD across different ethnicities. Finally, adaptive behavior across different ethnicities of DD children (White, Black, and Hispanic) is absent in the current empirical literature.

I sought to address this gap in the literature. If differences exist between DD and nonDD eligible children, different ethnicities (White, Black, Hispanic), and different placement setting prior to testing (home, daycare, school), the results of this study could provide important data for the interpretation of adaptive skills, more accurate identification of strengths and weaknesses among different ethnicities and individuals in a single ethnicity, improvements in the level of analysis, and more directed and individualized goals and programing. This study could enhance an understanding of a special needs population and give educators, parents, psychologists, health care providers, and policy makers a broader perspective of the special needs of this population than they would otherwise have. The results are presented in Chapter 4.

Positive social change, including a perception shift in the need for and emphasis on early intervention for children with adaptive deficits that are specific to an individual, to an ethnicity, or as related to placement, is likely to emerge from this study. It is important to understand this gap in knowledge to better help children catch up with typically developing peers while the children are still young. The information gathered from this research may further curriculum development, enhance instruction programs,

strengthen the need for highly qualified school based preschool programs, and positively impact the lifetime successes of children who are diagnosed early as DD. The information presented in this study may also lessen symptoms, improve deficits, and aid children to reenter a regular curriculum setting with no identifiable disability.

Summary

This quantitative study examined the adaptive profiles of children referred for DD assessment. Descriptive statistics for age, sex, race, and gender were collected and analyzed for information. I conducted three one-way analyses of variance (ANOVA) to answer research questions and to compare the dependent variable ABAS-II Parent/Primary Caregiver Form GAC standard score to determine if there were differences in the independent variables, eligibility status (DD eligible or not DD eligible), ethnicity (White, Black, Hispanic), and placement setting prior to testing (home, daycare, school).

This research study provides an opportunity to make better eligibility decisions, to improve educators' and parents' understanding of the characteristics of the DD child, to give support for placement in specific settings, to offer an understanding of those adaptive skills that are more likely viewed differently among respondents, and to supply data about adaptive based skills that are more or less prevalent in a specific ethnicity. The results of this study impact the education of the DD child; the development of multi-ethnic treatment goals, plans, and curricula for the DD child; and the determination of the most appropriate placement setting, one that will enable the DD child to function independently while addressing the child's developmental needs.

In Chapter 2, I (a) review the existing literature, (b) discuss the role of adaptive behavior in determining disabilities, (c) provide definitions of adaptive behavior as defined by the AAIDD, *DSM-5* and DPI, (d) present an underlying theory of the development of adaptive behavior in children, (e) explore data related to the use of ABAS-II measures in assessing adaptive behavior, and (f) cite recent studies examining the efficacy of adaptive behavior assessment among children with disabilities.

In Chapter 3, I present more detail as to methodology, focusing on the study data and details, participant descriptive data, validity and reliability of the ABAS-II, data collection, and analysis of the data. In Chapter 4, I describe and explain the outcomes of the data collected and research findings. Chapter 5 presents conclusions and recommendations for further research.

Chapter 2: Literature Review

Introduction

Adaptive behavior, historically and currently, has always been closely linked to intellectual deficits and has been viewed by diagnosing professionals as an important dynamic when classifying a child with an intellectual disability. The leading and guiding body in all matters related to intellectual disabilities is the American Association of Mental Retardation (AAMR), which is currently known as AAIDD. The AAMR has always been considered a highly reliable source in issues and matters pertaining to intellectual deficits (Ditterline & Oakland, 2009). The AAMR states, as a standard for diagnosing, that individuals classified as intellectually disabled must have limited functioning in cognitive skills as well as delays in conceptual, practical, and/or social adaptive skills (AAIDD, 2012, p. 2). The deficit must (a) be viewed as significant within the constructs of the individual's living and learning environment, age and ethnicity; (b) take into account language differences; and (c) must not be better explained by communication, behavioral, sensory, and motor disabilities. When describing a disability, adaptive functioning strengths and limitations should be presented, and development of a profile should be completed. This profile should include warranted personal support and the explanation that life functioning can improve over time (AAIDD, 2012, p. 43).

Strategy for Literature Review

I conducted the search for applicable literature in many scholarly databases. These databases included association manuals, data documents, government agency documents and websites, primary author books, professional journals, and testing manuals. Journal

literature was obtained from a number of databases including ERIC, Education Source, PROQuest Central, PROQuest Criminal Justice, Mental Measurements Yearbook, PsychARTICLES, PsychBOOKS, PsychINFO, SAGE Premier, Springer Link, and Taylor & Francis Online. The research literature was generally less than 10 years old, though some that presented historical information or were highly specific and/or targeted valuable information important for defining this current study were older. Search terms included the following terms and variations in combinations of the following terms: *adaptive behavior, adaptive functioning, developmental disabilities, ABAS-II, daycare versus home placement, assessment, cultural bias, daily life skills, early childhood intervention, education law, interrater respondents, preschool children,* and *rural versus urban.*

The goal for this research was to fill a gap in knowledge as it related to understanding the adaptive behavior profiles of preschool children across respondents, ethnicities, and placement, and to gain insight into specific characteristics of those children identified as DD in a rural setting. My hypothesis was that the research would conclude there are differentiating and distinct adaptive profiles between DD and nonDD children, between children from different ethnicities, and between children placed in different settings.

The literature I reviewed for this chapter identifies general education practices as well as those used in clinical settings, mandated policy, and procedures and guidelines set forth by various well-respected associations in the field of intellectual disabilities. It also provides a full review of adaptive behavior and the most current research associated with

adaptive behavior functioning between and among different childhood disability populations. The theoretical basis for this research includes theories and standards in the development of adaptive skills in children, informing parties associated with diagnosis, classification as DD in the public school setting, Bandura's social learning theory, and background related to the role of adaptive behavior assessment.

Adaptive Behavior

Adaptive behavior evaluation is useful in determining possible delays, impairments, deficits, and dysfunction commonly associated with intellectual or neurodevelopmental disabilities. Adaptive behavior is the ability of an individual to perform age-appropriate skills independently, daily life skills effectively, and activities safely while assuming personal responsibility given social and ethnic expectations (Ditterline & Oakland, 2009, p. 38). To determine a person's adaptive behavior level, assessment is conducted within the conceptual, practical, and social domains (American Psychiatric Association [APA], 2013). Assessment is measured against typically aged peers and ethnicity norms with respondents being highly familiar with the individual being assessed and able to provide accurate information regarding the individual's daily life abilities (Harrison & Oakland, 2008a, p. 3). Outcomes from adaptive behavior assessment allow caretakers and educators to determine the level of support and assistance a child requires to engage actively in the context of school, home, and community. Disabilities associated with adaptive behavioral dysfunction can be mild, moderate, or severe and may display a particular profile associated with specific features of deficits related to a disorder (APA, 2013; DiStefano et al., 2016; Tremblay, Richer,

Lachance, & Côté, 2009; Viezel, Lowell, Davis, & Castillo, 2014). Often, the greater the level of disability, the greater the severity of intellectual deficit and the higher the incidence of behavioral or adaptive issues, resulting in a greater incidence of displayed problems across settings (Howard, Sparkman, Cohen, Green, & Stanislaw, 2005, p. 376). Profiling adaptive behavior weaknesses and problematic behaviors leads to the effective development and application of teaching direction, appropriate level of instruction, beneficial modifications, and focused accommodations in order to ensure improvements in the individual's quality of life. The concept of adaptive behavior assessment developed over time and, while there is an overall consensus as to the broader definition of adaptive behavior, there are more narrow meanings based on which type of discipline is applied or referenced.

Guidelines for Assessing Adaptive Functioning

The AAIDD defines adaptive behavior as a compilation of learned behaviors and a set of everyday daily functioning skills within the conceptual, practical, and social areas (AAIDD, 2012, p. 1). To further explain, there are 10 adaptive skill sets that compose the umbrella meaning of adaptive behavior. These skills are communication, community use, functional academics, home and school living, health and safety, leisure, self-care, self-direction, social, and work. Each of these skills falls into one of three areas: conceptual, practical, or social (AAIDD, 2012). The conceptual domain consists of communication, functional academics, health and safety, and self-direction skills. The practical domain comprises community use, health and safety, home and school living, self-care, and work

skills. Leisure and social skills make up the social area (AAIDD, 2012, p. 15). The social domain includes leisure activities and person-to-person activities.

Narrowing the terminology further, the AAIDD defines each skill area. Communication refers to a person's ability to speak and listen, communicate, utilize vocabulary**,** respond, and converse (AAIDD, 2012). Community use incorporates those skills needed to function in a community, use of resources, and the ability to shop and travel. Functional academics integrates basic reading, writing, and math skills and includes the academic skills necessary to function independently, measurement skills, and the ability to understand time and employ note taking, and letter aptitude (AAIDD, 2012). Home and school living skills involve similar features but in different settings. These features include the skills needed for basic care of an environment: cleaning and organizing materials within the setting, maintaining and repairing property and possessions, performing chores, and preparing meals. Health and safety skills are defined as a person's ability to respond to illness, injury, and emergencies; utilize cautionary measures; and follow safety regulations (AAIDD, 2012). Leisure skills incorporate planning and engaging in recreational activities and following game rules. Self-care skills integrate dressing, hygiene, toileting, and other personal care activities. Self-direction skills integrate independence, responsibility, impulse control, scheduling, following directions, and making choices (AAIDD, 2012). Social skills involve a person's ability to interact and get along with others, showing and recognizing emotion in oneself and others, and utilizing manners. Work skills include retaining a job, completing work

related activities and tasks, working productively with colleagues and supervisors, and following a schedule (AAIDD, 2012).

The *DSM-5* (APA, 2013) provides guidelines to assess adaptive functioning when diagnosing neurodevelopmental disorders. Neurodevelopmental disorders are deficits in developmental functioning including impairments and/or delays in personal, social, academic, and occupational functioning (APA, 2013, p. 38). Intellectual deficits occur as a typical feature with overall global impairments appearing prior to formal education. These deficits must affect adaptive functioning (APA, 2013, p. 33). The individual must display a significant deficit in personal independence and social responsibility in at least one of the following areas: daily life functioning, communication, participation, achievement, or occupational skills. These deficits must be evident across home and community settings (APA, 2013). Thus, deficits in adaptive functioning are considered crucial criteria when diagnosing an intellectual deficit.

The *DSM-5* (APA, 2013) defines an intellectual disability as associated with early cognition deficits during the developmental stages of life causing significant problems with adaptive functioning in conceptual, practical, and social domains. The deficits in adaptive functioning must be severe enough to warrant supportive assistance across different environments (APA, 2013). When determining a disability, the psychologist must include a psychometrically sound clinical evaluation in adaptive skills that is individualized and ethnic appropriate (APA, 2013, p. 37). This definition is similar to the one described by the DPI.

An adaptive behavior evaluation addresses the effectiveness with which a person meets personal independence and social responsibility standards in peer and ethnic groups (NCDPI, 2010, p. 7). Adaptive behavior evaluation includes two factors: the extent to which the child can independently function and the extent to which the child meets ethnically imposed demands. It is imperative that the IEP team reviews the total environment where the child lives. When appropriate and available, the IEP team must request two different rater sources for all preschool aged children as part of the psychoeducational evaluation (NCDPI, 2010, p. 7). DPI also indicates that the adaptive evaluation must be conducted by a trained individual proficient in both assessment and interpretation. When developmental delay assessment is conducted for children aged 2 years, 10 months through 7 years, 11 months, adaptive behavior is a required evaluation component (NCDPI, 2010, p. 65).

According to the policies governing exceptional children programs, a child may be eligible as DD if there is a 30% delay in physical development or cognitive, communication, social/emotional, or adaptive behavior or a 25% delay in two of these same areas (NCDPI, 2010, p. 66). To be identified as having an ID under these policies, the child must also have adaptive behavior deficits at or below 2 standard deviations below the mean in one domain area or 1.5 standard deviations below the mean in a minimum of two domain areas in addition to significant cognitive deficits (NCDPI, 2010, p. 68). For both the DD and ID eligibility areas, the data must conclude significant impairment in adaptive functioning.

Legal Mandates

Enforced by the U.S. Department of Education through various federal, state, and local agencies, the following acts provide legally based guidelines for conducting assessment: Individuals with Disabilities Education Improvement Act (IDEA; U.S. Code Service, 2007), Health Insurance Portability and Accountability Act of 1996 (U.S. Department of Health and Human Services, 1996), Americans with Disabilities Act of 1990 (ADA), Family Educational Rights and Privacy Act of 1974 (FERPA, 20 U.S.C. § 1232g; 34 CFR Part 99, 1974), and Rehabilitation Act of 1973, Section 504 (Office for Civil Rights, 1973).

Psychologists are obligated to follow all statutes while keeping in mind ethical principles based on philosophical ideas and professional standards (Sattler, 2008, p. 56). A psychologist must adhere to policies and be committed to the welfare of children, families, and society. Laws are imposed by legal bodies and reflect specific case law resolved in a court of law. When making assessment decisions, a psychologist must abide by federal and state regulations and uphold state licensure board standards (Ditterline & Oakland, 2009). The psychologist must acknowledge the validity of all utilized assessment instrumentations and avoid misusing such measures, data, and testing instrumentation (Sattler, 2008, p. 163). Psychologists are legally and ethically bound to select endorsed measures, monitor their own use of instrumentation, make sure the data collected is used in an appropriate manner, and select measures that effectively answer the referral question. The guidelines when assessing children for developmental delays and intellectual disabilities are clear: Fair adaptive functioning assessment must be

determined prior to determining the presence of a disability (APA, 2013; NCDPI, 2010; Sattler, 2008).

Reviewing public laws and legal mandates in a united manner provides a clear understanding of the important role the psychologist plays in the assessment and evaluation of children. While Section 504 and ADA are based on civil rights law, FERPA (20 U.S.C. § 1232g; 34 CFR Part 99, 1974) and IDEA 2004 are statues based on educational law. Children with disabilities under Section 504 and IDEA 2004 are entitled to accommodations (U.S. Code Service, 2007; Office for Civil Rights, 1973). Under educational law, which mandates IDEA 2004, children with disabilities are entitled to receive special educational services and instruction provided by a highly trained teacher as presented in a developed IEP (U.S. Code Service, 2007). According to FERPA (20 U.S.C. § 1232g; 34 CFR Part 99, 1974), children with a disability are entitled to confidentiality rights and, if those rights are violated, the federal government can withdraw specific school-based funding (FERPA, 20 U.S.C. § 1232g; 34 CFR Part 99, 1974). Health Insurance Portability and Accountability Act of 1996 is similar; however, it is associated with compliance by health care providers (U.S. Department of Health and Human Services,1996). It is important that the psychologist, whose responsibility it is to select a measure, assess, interpret, report, and share critical and highly confidential results, understands public laws and legal mandates.

The federal cases important for this discussion are *Crawford et al. v. Honig et al., 1994* (37 F.3d 485, 1994) and *Parents in Action on Special Education v. Joseph P. Hannon 1980* (506 F. Supp. 831,1980). These cases set the stage in how professionals

evaluate children referred for DD and ID assessment. These cases conclude that, while intellectual measures were found unbiased with no specific evidence of misassessment by evaluators, there must be a shift in the way psychologists assess for intellectual impairments (Sattler, 2008, p. 168). Ultimately, it was legislated that one assessment is not enough to deem a child as ID (Sattler, 2008). Therefore, only a comprehensive, individual psychological assessment should be used and only after a child has been performing poorly in achievement (Sattler, 2008). Overall, the research literature supports the fact that intelligence measures are not biased (Lynn, 1977; Koh, Abbatiello, & Mcloughlin, 1984; Sattler, 2008). However, certain stipulations should be included when deeming an intellectual measure is nonbiased.

From 1970 to 1985 legal mandates supported the use of measures but only when not misused; the measure must be valid when applied to the individual's specific ethnicity. While intelligence measures are inherently nonbiased, psychologists today select measures that do not proportionally place black and minority children, especially English as Second Language (ESL) children, in a separate special education setting when compared to other races (Sattler, 2008, p 157). Overrepresentation of such minorities in settings that were considered, at that time, to be inferior to regular education settings resulted in lower standard scores on intellectual assessment measures administered by psychologists and lower expectancies among educators serving those children (Sattler, 2008). As a result of these cases, only a full range of assessment techniques appropriate for a child's primary language ability and normed among different ethnic groups should be utilized by psychologists when results are attained and are used for determining

disability eligibility and/or making placement decisions in an educational setting (Sattler, 2008).

Development of Adaptive Measures

The development of adaptive measures to address an individual's limitations and impairments should be guided by four specific association guideline standards (Ditterline & Oakland, 2009). These guideline standards are the Standards for Education and Psychological Testing, universal excepted standards, federal standards, and professional association standards.

First, when developing an appropriate adaptive instrument, the test developers must address those industry standard rules developed by the Standards for Education and Psychological Testing (American Educational Research Association [AERA] et al., 2014).

The AERA upholds assessment practices that include test construction, documentation, evaluation techniques, level of fairness and impartiality, and applications for the instrument developed. According to AERA (2014), a measure must meet certain specificity. It must be considered a test when a particular behavior(s) in a precise domain is evaluated and scored using standardized procedures. The test developers incorporate a comprehensive evaluation approach when discussing current behavior and/or when predicating future behaviors (AERA et al., 2014, p. 76). Test validity and reliability must be ascertained with coefficients falling within an acceptable range.

The second specific association guideline standard involves those that inform diagnosis and classify impairment. These associations include the *DSM-5,* Worldwide

Health Organization, *International Classification of Functioning and Disability (ICIDH)* and *International Classification of Diseases and Related Health Problems, Tenth Edition (ICD-10)*.

The *DSM-5* promotes an assessment that follows a dimensional approach to diagnosing (APA, 2013, p. 12). Based on the concept of heterogeneity in grouping disorders and the sharing diagnostic data and profiles, the *DSM-5* supports combining information generated from a multitude of sources in order to diagnostically simplify definitions of disorders, especially as it pertains to coexisting diagnoses (APA, 2013). The *DSM-5* supports the understanding of disease commonality, re-analyzing data, researching, and ongoing assessing of validity for different populations (APA, 2013).

Within the aspect of diagnosing, the *DSM-5* specifies the improvement in exploring and acknowledging ethnicity differences as a crucial and important factor when making accurate diagnoses across different populations (APA, 2013, p. 14). Individual difficulties must be reviewed in context of socio/ethnic norms and be represented with measures of significant differences associated with adaption of ethnicity of origin norms rather than the norms of the majority of society at large (APA, 2013). Ethnical expectations must be reviewed, reflected in interpretation, and discussed before determining any psychopathological conditions (APA, 2013). APA's (2013) *DSM-5* includes in the definition of mental disorders the association with "significant distress or disability in social, occupational, and or important activities" (p. 20). To make the diagnostic process more uniform, *DSM-5* encourages the assessment of adaptive functioning.

The *DSM-5* specifically addresses global adaptive behavior and recommends the utilization of the World Health Organization Disability Assessment Scale (WHODAS, Üstün, 2010) by health care workers (World Health Organization [WHO], 1992a). The WHODAS is an internationally recognized standardized measure commonly utilized by medical and health care workers under the consortium of *International Classification of Functioning, Disability, and Health* (*ICF*; APA, 2013). The WHODAS is a questionnaire measure that asks an individual about adaptive behavior skills and the level of difficulty one has had in adaptive functioning in the preceding 30 days (Üstün, 2010). Adaptive behavior skills fall into six domains: understanding and communicating; getting around; self-care; getting along with people; life activities (household, work, and/or school activities); and participation in society (Üstün, 2012, p. 4).

According to WHO (1999a), the concepts of activities and participation are key to the understanding of adaptive behavior. Activities refer to an individual's ability to perform certain daily functioning tasks and participation has to do with an individual's ability to integrate activities into daily life (Ditterline & Oakland, 2009). For children, WHO (1999a) describes nine specific domains of adaptive functioning: learning and applying knowledge, general tasks and demands, communication, mobility, self-care, domestic life, interpersonal interactions with relationships, major life skills, and community/civic/social. Many of the ABAS-II subtest areas reflect those domains provided by WHO. WHODAS and a child's corresponding questionnaire are measures that can be used in monitoring strengths and limitations in adaptive behavior functioning as well as problematic social, occupational, and important activity behaviors over time

(APA, 2013; Üstün, 2010). This definition of adaptive behavior is similar to the definition provided by AAMR (2002) and *DSM-5* (APA, 2013).

The WHO's *ICF* is interested in providing physiological, physical, and psychological frameworks that provide a broad, universal perspective of mental disorders. *ICF* is interested in defining aspects of a disorder by determining the extent to which one is involved in daily life activities and one's ability, add quantity and quality of social skills participation, and functioning (WHO, 1999a). The *ICF* addresses the accurate description of the symptoms, behaviors, and features of a disorder without diagnosing one and emphasizes adaptive behavior as a critical role in understanding an individual's impairments (Ditterline & Oakland, 2009). The WHO's *ICF* model addresses performance deficits separate from skill deficits. One can describe these deficits in adaptive behavior functioning as related to impairment or as strengths and limitations associated with the environment (Ditterline & Oakland, 2009). When adaptive skills are significantly impaired and diagnosis is needed to provide services, the WHO *International Classification of Diseases and Related Health Problems, Tenth Edition* (*ICD-10*, WHO, 1992b) is employed to classify a disability.

Combined, the WHO's *ICF* framework and *ICD-10* coding system provide a way to identify conditions across dimensional areas; describe those physiological, physical and psychological factors influencing those conditions to be present; state what is needed to lessen those conditions; and implement services that will alleviate the problems (Ditterline & Oakland, 2009; WHO, 1992b).

The third guideline informs a test developer about established and legally binding case law as it relates to policies and practices (Ditterline & Oakland, 2009). This is of particular importance when assessing adaptive behavior at the public school level. The U.S. Department of Education relies on federal case law to guide school-based practices and policies. Each state board of education DPI must incorporate federal guidelines, practices, and policies when determining special education eligibility. While *DSM-5* plays a role in criteria classification, diagnostic criteria and procedure protocol(s), eligibility for special education services as DD or ID is ultimately determined by each state (Goldstein & Nagleria, 2009). Important legal documentation underpinning federal guidelines, practices, and procedures include IDEA 2004 (U.S. Code Service, 2007) and *Atkins v. Virginia* (536 U.S. 304, 2002) U.S. Supreme Court Ruling (Goldstein & Nagleria, 2009; Sattler, 2008, p. 168).

IDEA governs all matters associated with toddler children aged 2 years 10 months through young adults aged 21 years 11 months. Requirements addressed in IDEA are related to special education, early intervention, and any disabled individuals in the state and LEA (IDEA; U.S. Code Service, 2007). In terms of toddlers, Part C of IDEA requires states and LEAs provide services and programs for young children identified with having a disability. Eligibility as DD requires that adaptive behavior assessment be conducted with data to help confirm eligibility (Ditterline & Oakland, 2009). Regarding school aged children, Part B of IDEA indicates that adaptive behavior data as one of the diagnostic features when determining eligibility for Autism Spectrum Disorder, Deaf-Blindness, DD, ID, and Multiple Disability (Ditterline & Oakland, 2009; DPI, 2010). Goldstein and

Naglieri (2009) support the use of adaptive behavior assessment to determine a strengths and weaknesses profile for a child with, or even suspected of having, a disability in the public education system. Overall, IDEA indicates that multiple assessment tools be used in conjunction with information provided by teachers, parents, and other relevant sources. The data collected should be used to determine eligibility, create programming goals, develop data for improving practical skills, address transition needs, and be used as a baseline for reevaluation (Ditterline & Oakland, 2009).

The 2002 Supreme Court Ruling *Atkins v. Virginia* (536 U.S. 304, 2002) prohibits the execution of death row inmates with an ID classification. This ruling is important as it further confirms the necessity of early adaptive functioning assessment as a highly influential component when assessing a person suspected of being ID. A life-and-death determination is not left exclusively to data supplied by a current psychological evaluation of the inmate. Rather, there must be evidence of significant impairments in adaptive behavior prior to the age of 18 (Ditterline & Oakland, 2009; Ellis, 2003). The court ruling influences the definition of ID to include deficits in adaptive behavior. Thus, in a forensic setting, a person cannot be determined ID without also displaying proportional delays in specific areas of adaptive functioning (Ditterline & Oakland, 2009: Ellis, 2003).

The fourth guideline addresses ethical values involved in the administration of any adaptive measure (Ditterline & Oakland, 2009). Most notable are the American Psychological Association's *Ethical Principles of Psychologists and Code of Conduct* (Ethics Code; American Psychological Association, 2010) and the National Association

of School Psychologists (NASP) *Principles for Professional Ethics* (Principles; NASP, 2010). The utilization or administration of adaptive behavior measures are guided by ethical values and codes. Psychologists must only utilize measures that are valid, reliable, and appropriate for the referral question being answered (NASP, 2010, Principle II.3. Responsible Assessment and Intervention Practices, Standard II.3.2). When utilizing a standardized measure such as the ABAS-II, the school psychologist adheres to procedures with any modification identified and reviewed in the body of the psychoeducational report (NASP, 2010*,* Standard II.3.2*).* The primary language of the individual being assessed as well as the guardian is always respected and considered when choosing assessment techniques and measures (NASP, 2010, I. Respecting the Dignities and Rights of all Persons, Standard I.1.3) NASP *Principles* (2010) indicates a psychological evaluation should be based on a variety of different types of information from different sources or raters or settings (NASP, 2010, Standard II.3.3).

Within the *Ethics Code* (American Psychological Association, 2010), state-licensed psychologists strive to follow the Standard 9.02 Use of Assessments, administer a variation of assessment techniques including test instrumentation for the purposes appropriate according to manner, research literature, usefulness, and with proper technique. Similar to the *Ethics Code* (American Psychological Association, 2010), NASP *Principles*, assessment instrumentation must be valid, reliable, and documented as effective in the referred individual's population (NASP, 2010, Principle II.3. Responsible Assessment and Intervention Practices). In addition, *Principles* (NASP, 2010) expresses the need to address strengths and limitations as they can affect results. One's individual

identified strengths and limitations should be interpreted and discussed in the formal report. Finally, Standard 9.02 Use of Assessment specifically notes that language preference and competence should be considered in light of the question being explored (American Psychological Association, 2010).

Overall, when developing an appropriate adaptive instrument, the test makers are guided by specific association guideline standards. The AERA provides guidance about assessment practices that include test construct, documentation, evaluation techniques, level of fairness and impartiality, and applications for the instrument developed. The *DSM-5* promotes an instrument that follows a dimensional and global approach to diagnosing and specifically recommends the utilization of the WHODAS (Üstün, 2010). The WHO's *ICD* is interested in providing physiological, physical, and psychological frameworks that provide a broad, universal perspective of mental disorders.

Adaptive behavior test developers must also be mindful of established and legally binding case law as it relates to policies and practices (Ditterline & Oakland, 2009). For example, IDEA governs all matters associated with toddler children aged 2 years 10 months through young adults aged 21 years 11 months and addresses specific adaptive behavior criteria for placement as DD. As previously mentioned, another important ruling involves the 2002 Supreme Court Ruling *Atkins v. Virginia* (536 U.S. 304, 2002) which prohibits the execution of death row inmates with an ID classification and also influences the definition of ID to include deficits in adaptive behavior. Finally, developing an adaptive behavior instrument, the developers should be attentive to association guidelines

(*Ethics Code* and *Principles)* which address ethical values involved in the administration of any adaptive measure.

Underlying Theory Related to Adaptive Behavior Development

Bandura's social learning theory is an underlining methodology associated with the development of adaptive skills in children. Social learning theory posits that children learn behaviors from adults and one another through observations, imitation, and modeling (Bandura, 1986, p. 47). Social learning also requires the use of cognitive functioning on the part of the observer, such as, memory, attention, rehearsal, and motivation (Bandura, 1986, p. 51).

From the observation of the adults in their lives, children form a concept of how novel behaviors, emotional reactions, attitudes, and interactions are performed (Bandura, 1986, p. 312). Later on, during similar occasions, the child recalls the information collected via observation and imitates the performed behavior, emotional reaction, attitude, and/or interaction. Modeling of the adult serves as the main guide for action and reaction (Bandura, 1986, p. 312).

While this seems uncomplicated, there is another factor that plays a role in whether or not the child will reproduce an observed action. Motivation is the general desire or willingness to perform something. There is usually a reason behind whether a child does or does not act, which is reinforcement (Bandura, 1986, p. 54). Combined with observation, the presence of a reinforcement or consequence influences the child's motivation to perform or not perform a particular behavior, skill, act, or task; to

emotionally react to a stimulus; or to display a certain posture or attitude (Bandura, 1986, p. 68).

Through multiple research studies, Bandura found the consequence of the observed behavior of others often determines whether children imitate and adopt the behavior themselves (Bandura, 1986, p. 69). For example, children who observed adults attacking a bounce-up, inflated, Bobo doll imitated the exact actions set by the adult. However, when the children observed the adult being reprimanded with a negative consequence, the children were far less likely to imitate the aggressive behavior of the adult (Bandura, 1986, p. 68).

Social learning theory is rooted in the belief that constructive feedback regarding one's actions encourages a sense of self-efficacy and builds confidence, self-reliance, and assurance (Bandura, 1986, p. 414). It describes human behavior in terms of continuous, limitless, broad, and narrow reciprocal interactions between a parent and his child with internal interactions and decision making between cognitive, behavioral, and environmental influences. Bandura (1986) stressed that a child learns how to perform adaptive behavior skills and tasks by viewing others, retaining the observations, and then replaying or reproducing what was viewed in real life situations (p. 412). Those behaviors that are positively reinforced develop in the child and are imitated repeatedly, creating a sense of independence and worth. Those behaviors the child perceives as resulting in a negative consequence are less likely to develop and be repeated (p. 69).

In this study, Bandura's social learning theory describes how and why a child performs certain adaptive skills and why other adaptive skills elude the child. For a child

to perform an act there must be the opportunity to view the skill performed by another individual, as well as the child must have the cognitive fortitude to retain and recall the observation for later use. The likelihood of the behavior being implemented in life situations is related to the observed outcome; specifically, a positive consequence versus a negative one. As an adaptive behavior is positively reinforced, it is more likely that a child will reuse the skill later under similar circumstances. With each reinforcement, the child is more likely to master the skill and develop new ones.

Research Related to Application of Adaptive Behavior

As previously stated, adaptive behavior describes a set of abilities associated with daily functioning and the extent to which an individual independently performs age-appropriate skills, typically meets developmental milestones, functions academically, acts responsibly in a myriad of situations, and assumes social responsibility and adjustment. Adaptive behavior assessment is a required evaluation component for determining whether or not a child meets the eligibility criteria as DD and is equally important for identifying a child as has having an ID, autism spectrum disorder (ASD), and Behavioral and/or Emotional Disorder. In addition, adaptive behavior research is conducted on children with learning disorders and academic problems.

From a theoretical perspective, it is important that the use of adaptive behavior assessment and interpretation be driven by a disability profile supported by the research literature. Data collected from such measures should also be viewed in light of an individual's ethnic identity, ethnic expectations, and community norms (Ditterline & Oakland, 2009; Luckasson et al., 1996) and should take into consideration what the data

reveals about respondents across different settings. While adaptive functioning is commonly utilized to determine a diagnosis, the ultimate benefit of evaluating adaptive functioning is to provide practical and functional data to caretakers and teachers as they formulate treatment plans and interventions (Ditterline & Oakland, 2009). The research related to adaptive behavior reflects information associated with profiles seen in different disability populations, adaptive functioning profiles associated with specific ethnicities, and interrater research that documents analytical information across respondents from different settings.

Adaptive Profiles Among Disability Populations

Individuals with intellectual deficits display below average scores in global adaptive composite scores on the ABAS-II (Harrison & Oakland, 2008, p. 140). In addition to global deficits, the ID adaptive profile indicates weaknesses in the social and practical domains with subtest areas showing the greatest weaknesses in communication, functional academics, and self-direction skills (Harrison & Outland, 2008a; Papazoglou et al., 2014, p. 169). In one study, the researchers found the ABAS-II areas most frequently impaired in children with an ID are home living and social areas (Papazoglou et al., 2014). Specific to the adaptive profile of ID children, impairment in leisure skills is unlikely (Papazoglou et al., 2014). Research conducted using the Vineland Adaptive Behavior Scales, Second Edition (VABS-II), indicates the ID population has significantly lower scores than same aged, nondisabled peers in communication, daily living, and socialization (Sparrow et al., 2005). Motor skills, while not considered adaptive in nature, are also identified as significantly lower than in typical peers (Hundert et al., 1997;

Sparrow, Cicchetti, & Balla, 2005). There are some differences among adaptive profiles when the level of severity is examined.

The adaptive profile of the ID population displays an increase in the level of impaired adaptive functioning as intellectual severity decreases (Hundert et al., 1997, p. p. 427). Regardless of the severity of intellectual disability, motor subscale deficit, as assessed by the Vineland Adaptive Behavior Scales (VABS), is always present (Hundert et al., 1997, p. 425). Individuals with a mild to moderate level of intellectual disability are more likely to have normal developmental scores on self-help and social areas as rated on the Developmental Profile-II (Bloom & Zelko, 1994). On the Quebec Adaptive Behavior Scale, children with a mild to moderate level of intellectual functioning display significantly lower scores on the practical ability skill areas of autonomy and domestic abilities when compared to more severely, intellectually impaired children (Tremblay et al., 2010).

Overall the ID profile shows significant deficits in global adaptive functioning with severity of disability impacting on adaptive functioning. A child with ID will likely show deficits in communication, functional academics, self-direction skills, home living, and social areas. Impairment in leisure activity and motor skills is less probable.

Autism Spectrum Disorder

The most prevalent and current area of adaptive behavior research has been conducted within the autistic population. General conclusions support significant deficits in communication and social skills that correspond to diagnostic features (Ditterline, Banner, Oakland, & Becton, 2008; Harrison & Oakland, 2008: McDonald et al., 2015).

On the ABAS-II, autistic children show below average overall GAC scores and deficits in all three domains (Ditterline et al., 2008; Lopata et al, 2012; Harrison & Oakland, 2008, p. 157). Prominent impairments are noted in communication, health and safety, and social skills (Ditterline et al., 2008; Harrison & Oakland, 2008). Adaptive research utilizing the VABS-II also supports below average overall adaptive scores with significant and most impaired functioning deficits noted in socialization, expressiveness, and leisure subtest scale areas (Sparrow et al., 2005). As cognitive impairment severity worsens so does overall adaptive functioning (Chang, Yen, & Yanga, 2013). Without differentiating between the levels of autism, the adaptive profile for an autistic individual may reflect deficits in communication, socially related skills, health and safety, leisure activities, and general adaptive ability.

In other studies, autistic (AU) adaptive profiles note some relative strengths. Among 24 autistic children, functional academics and school living scores on the ABAS-II display as relative abilities compared to all other subtest skills (Ditterline et al., 2008). Still other studies find daily living skills (Bölte & Poustka, 2002; Perry, Flanagan, Geier, & Freeman, 2009; Schatz & Hamdan-Allen, 1995) and motor skills (Perry et al., 2009) as relative strengths among autistic individuals. Specific strengths are noted for children with high functioning autism (HFA). Individuals with HFA display relative strengths in functional academics and community use (Lopata et al, 2012) and their cognition and adaptive functioning show a positive relationship (Chang et al., 2013). Distinct profile differences and weaknesses are also determined according to autism severity levels.

While children with HFA also show deficits in all three domains on the ABAS-II, relative weaknesses are identified in many subtest areas. These deficits include home living, self-direction, and social abilities (Lopata et al, 2012). Even with typical intelligence scores, HFA children show overall impairments in adaptive functioning (Volker et al, 2010; Kanne et al., 201; McDonald et al., 2015; Perry et al., 2009). The greatest deficits in adaptive behavior are among HFA children who are highly verbal and have average or better-than-average cognitive ability (Bölte & Poutska, 2002; Fenton et al., 2001). As the HFA child ages, the differences from the norm group become increasingly pronounced. Significant weakness will be demonstrated in daily living and communication skills into adulthood (Fenton et al, 2003; Klin et al., 2007; Mazefsky et al., 2008).

Different adaptive profiles across different intellectual levels for the autistic population have been researched by Perry et al. (2009). The researchers conclude intelligence is significantly higher than adaptive scores for HFA individuals (McDonald et al., 2015) and intelligence is significantly lower than adaptive scores for low functioning autistic individuals. Children with a mild ID show adaptive scores comparative to their intellectual disability (Perry et al., 2009). Another study explores the social and communication profile of HFA children across cognitive severity levels.

Using the VABS-II and Autism Diagnostic Observation Scale, Revised (ADOS) module 3 or 4, researchers explored the profiles of 187 male children aged 7 through 18 (Klin et al., 2007). Klin et al. (2007) also reviewed these results in light of intelligence. Researchers found VABS-II scores are significantly lower than Verbal Intelligence scores

based on the Differential Ability Scales (DAS), correlations existed between age and VABS-II socialization and communication scores but not in daily living skills (the older the child, the more severe the impairment), higher intellectually functioning children show greater impairment in social and communication skills as they age, and a higher level of intellect correlates to higher communication scores as rated by the VABS but is unrelated to socialization scores as rated by the VABS (Klin et al., 2007). The profile across various severity levels suggests autistic individuals experience difficulties with everyday life functioning skills regardless of intellectual abilities or disabilities.

Overall, the AU adaptive behavior profile will likely show significant global deficits along with significant impairment in communication and social skills. Furthermore, research findings suggest lower ability in health and safety, socialization, expressiveness, and leisure subtest scale areas. Relative strengths in the AU adaptive behavior profile include; functional academics, school living, daily living, and motor skills. As with ID, severity of cognitive impairment effects overall adaptive functioning.

In terms of HFA, overall impairments in adaptive behavior**,** even among children with average intelligence, were noted in the research literature. Significant profile weaknesses include**;** home living, self-direction, and social abilities. As the HFA child ages into adulthood, the discrepancy grows between themselves and typically developing peers. These growing into deficits are most pronounced in daily living and communication skills.

Emotional and Behavioral Disorders

A third area of research involving adaptive profiling is children with an assortment of behavioral and/or emotional disabilities. Social skills deficits are associated with children displaying externalizing behaviors and among children with an emotional and/or behavioral disorder (Ditterline et al., 2008; Harrison & Oakland, 2008; Sparrow & Cicchetti, 1987). Among this population, self-direction, self-care, and daily living skills are prominent, significant weaknesses (Ditterline et al., 2008; Hunter & Oakland, 2003; Sparrow et al., 2005). Other weaknesses, as noted on the ABAS-II, include communication, community use, functional academics, home and school living, health and safety, and leisure skills (Harrison & Oakland, 2008, p. 162). The severity of emotional and/or behavioral problems increases the likelihood of severity in adaptive behavior functioning (Sparrow & Cicchetti, 1987) and the likelihood of a comorbid condition of a specific learning disorder (SLD; Ditterline et al., 2008, p. 203).

Adolescents with a diagnosis of oppositional defiant disorder (ODD), when compared to other behavior-based disorders, show the poorest social and the strongest communication skills ability (Clark, Prior, & Kinsella, 2002, p. 791). Children with attention-deficit hyperactivity disorder (ADHD) show the greatest impairment in self-direction skills as based on the ABAS-II (Harrison & Oakland, 2008, p.160) and adaptive communication and socialization behaviors as based on the VABS-II (Sparrow et al., 2005). Children with severe TBI also showed a profile of significant social weakness as rated by the ABAS-II (Ganesalingam et al., 2011, p. 4711). Along with social skills,

children with a behavioral and/or emotional condition secondary to maltreatment are highly susceptible to poorer adaptive functioning.

Children who were at one time neglected show significantly lower subtest scaled scores on the VABS communication, daily living skills, and socialization domains when compared to same aged peers (Viezel et al., 2014, p. 576). Children who were at one time abused show a significant difference when compared to the control group and display a relative weakness in socialization (Viezel et al., 2014). TBI in children negatively impact their social skills abilities as rated on the ABAS-II (Ganeslingham et al., 2011, p. 471). The greater the severity of the head injury the greater the impairment is in social skills (Ganeslingham et al., 2011, p. 471). Children diagnosed with FAS display lower scores on the practical domain and overall GAC on the ABAS-II when compared to other typically performing peers (Motz et al., 2013, p 137-138).

Overall, the adaptive behavior profiles of children with a behavioral and/or emotional disability display significant deficits in a number of areas. These adaptive areas include; social skills, externalizing behaviors, self-direction, self-care, daily living skills, communication, community use, functional academics, home and school living, health and safety, and leisure skills. Adaptive behavior profiles, that show significant deficits in communication and social skills, are specifically associated with children with ODD. Among the ADHD population, the adaptive behavior profiles indicate weaknesses in self-direction, adaptive communication, and socialization skills. Neglected children show a profile that encompasses lower subtest scores in communication, daily living skills, and socialization. Finally, children with a TBI will likely display adaptive behavior

profiles that reflect significant difficulties with social skills with the greater the severity of the TBI injury indicating a greater the degree of social skills deficit.

Specific Learning Disorders

The adaptive profile for children with a specific learning disorder (SLD) indicates a higher level of impairment in communication, functional academics, and self-direction skills as rated by the ABAS- II (Harrison & Oakland, 2008, p. 164) and below average scores on the conceptual domain (Ditterline et al., 2008; p. 196). For the SLD population, two specific subtest measures are noted as deficits on the VABS-II: adaptive communication and writing skills subtest areas (Sparrow et al., 2005). Relative strengths in adaptive functioning are identified in self-care skills (Ditterline & Oakland, 2009).

As the SLD child ages, demands increase. An SLD child has more adaptive behavior concerns as an adolescent than he did as a child (Ditterline & Oakland, 2009). Children with higher levels of cognitive-to-achievement-ability discrepancies have more deficits in adaptive behavior than SLD children with minor cognitive-to-achievement-ability discrepancies ratio or no discrepancies (Strawser & Weller, 1985). SLD students have more adaptive behavior functioning issues than mildly, intellectually disabled children as rated by the Adaptive Behavior Inventory (Leigh, 1987).

Overall, the child with an SLD will show an adaptive profile that indicates deficits in communication, functional academics, self-direction, and writing skills. The SLD profile suggests a relative strength in self-care skills. Children with an SLD with greater cognitive-to-achievement-ability discrepancies have more deficits in adaptive behavior than children who are academically performing more closely to their cognitive ability.

When diagnosing children and developing treatment plans, it is important to address the adaptive profile of a child in terms of strengths and weaknesses according to the disability population diagnosed; relative to one's own abilities; and as one's profile relates to same aged, typically developing peers. Whether one is diagnosing a medically based disorder or a school-based special education disorder, the standard in both cases when identifying a DD requires the assessment of cognitive ability and adaptive behavior functioning in the conceptual, practical, and social domains (AAIDD, 2012; NCDPI, 2010). When describing a disability, the psychologist should interpret and report adaptive functioning strengths and limitations and present and develop an appropriate adaptive profile. This profile should include identification of abilities and disabilities; necessary support; and a realistic, research-based description of life functioning over time (AAIDD, 2012).

Research Related to Placement and Respondent

Utilization of a standardized adaptive measure is an important and required component when addressing the needs of children with disabilities. Adaptive behavior assessment research shows disabled preschool children benefit from being placed in a specialized placement program, as evidenced by increased adaptive scores that are significantly greater than the scores of disabled preschool children being cared for at home (Booth-Laforce & Kelly, 2004). Specialized at-home intervention programs for disabled preschool children have also proven successful in increasing adaptive functioning and motor skills (Shin et al., 2009). Adaptive behavior evaluation is important at both the community level, to determine effectiveness of intervention-based

specialized programs, and at the individual level, to determine diagnosis and eligibility for special education programs.

The great demand for assessment has resulted in an abundance of evaluation methods. More than 200 different checklists and questionnaires are available to assist in the observation of adaptive functioning, four of which meet the diagnostic criteria deemed required by the DSM-5 (Damberga et al., 2014). One of these four instruments is the ABAS-II, which is the focus of this study. In order to correctly interpret results supplied by adaptive behavior evaluation, the psychologist must feel confident that the respondents are reliably and accurately reporting the behaviors exhibited by their student or child.

Reliability between respondents indicates agreement occurrence and nonoccurrence of a specific target behavior (Dinnebeil & Rule,1994). It is important that teachers, parents, and professionals, including psychologists and physicians, rate the behavior in a similar construct, context, terminology, and severity and within the same format or instrumentation (Dinnebeil & Rule, 1994). Researchers reviewing congruence studies in the empirical research report that parents typically perceive their young child's developmental abilities approximately 3.6 months and 15.8 points higher on standard measures than do professionals across a multitude of developmental areas, and they conclude that a positive correlation exists between parent and professional rating agreements (Dinnebeil & Rule, 1994, p. 12). When parents of preschool children complete a developed checklist, results are similar. In terms of answering questions related to language, memory, scholastic interest, visual perceptual-motor skills, and gross

motor developmental areas, parents' ratings are consistent with the findings of professionals and teachers (Meltzer et al., 1983). The VABS-II shows a similar profile as reported in previous studies. In general, parent ratings on the VABS-II are higher than teacher ratings (Sparrow et al., 2005) while other studies reported very high levels of agreement (Cicchetti & Sparrow, 1989; Voelker et al., 2011; Lane, Paynter, & Sharman, 2013).

Teacher-Parent Agreement on the ABAS-II

According to the test designers of the ABAS-II, Harrison and Oakland (2008a), interrater reliability coefficient for the GAC score on the Teacher/Daycare Provider Form is .83; however, domain scores range from a slightly lower coefficient of .74 for the social domain to a more acceptable coefficient of .87 for the practical domain (p.104). The interrater reliability coefficients for the subtest areas range from .53 for the self-direction subtest to .85 for the functional preacademic subtest (p. 104).

The interrater reliability coefficient for the GAC score on the Parent/Primary Caregiver Form is .82; however, domain scores range from a slightly lower coefficient of .72 for the social domain to a more acceptable coefficient of .86 for the conceptual domain. The interrater reliability coefficients for the subtest areas range from .59 for the community use subtest to .85 for the functional preacademic subtest (Harrison & Oakland, 2008a, p. 106). These scores are generally within the expected range when compared to other adaptive measures (Burns, 2005).

According to Harrison and Oakland (2008a), cross respondent consistency between the ratings of teacher/daycare providers and parents for the GAC is a relatively

low coefficient of .68. Domain scores range from a lower coefficient of .63 for the practical domain to a higher coefficient of .79 for the conceptual domain. The cross-respondent consistency coefficients for the subtest areas range from .39 between the health and safety subtest to .64 between the communication subtests (Harrison & Oakland, 2008a). Mean scores are higher when rated by a teacher or daycare provider than a parent for the following ABAS-II subtest areas: communication, school living, health and safety, leisure, self-direction, and motor (Harrison & Oakland, 2008a, p. 109).

Overall GAC score and conceptual, social, and practical domain scores are rated higher by a teacher or daycare provider than a parent. Parents rate their child higher than a teacher or daycare provider does on the functional preacademic subtest. Equivalent mean scores are noted on the self-care and social subtests (Harrison & Oakland, 2008a). In general, a teacher or a daycare provider rates a child higher in overall adaptive behavior functioning than a parent.

Adaptive Behavior Teacher-Parent Agreement Across Different Populations

The most researched population in adaptive behavior is children with an ID and/or an ASD (Bölte & Poustka, 2002; Fisch, Simensen, & Shroer, 2002; Lane et al., 2013). Research literature documents that disagreement exists between parents and teachers of children with an ID with or without AU regarding a child's adaptive behavior abilities. Mealor and Richmond (1980) discussed this concept decades ago and found that perceptions of an ID Autistic child's ability as viewed by the teacher and parent can greatly differ when using the Cain-Levine Social Competency Scale and Part I of the Adaptive Behavior Scale (ABS). Generally, parents rate their child higher than teachers

do in communication, self-help, and initiative skills on the Cain-Levine Social Competency Scale with a significant difference in self-help skills (Mealor & Richmond, 1980). On the ABS, parents rate their child higher than teachers do in all subtest areas. Significant differences are noted in the independent functioning, physical development, economic activity, domestic activity, and vocational activity subtest scale areas (Mealor & Richmond, 1980, p. 89).

Hundert et al. (1997) researched parent and teacher agreement on the VABS in a pre- and post-assessment of mild/moderate and severe ID children in a preschool setting. They found high positive correlations between both the pre- and post- assessment teacher and parent ratings of mild/moderate and severe ID children among all VABS domain scores and the Adaptive Behavior Composite (ABC) score. When compared to typically developing peers, pre- and post- assessment motor domain scores negatively correlate with teacher scores, being significantly higher than parent scores.

Reviewing the means of the standard scores for the prea-ssessment, parents rate their typically developing child as having higher scores than teachers do in the following domain areas: communication, daily living, and socialization. However, these mean differences are not significant (Hundert et al., 1997). In terms of ID children, teachers rate mild/moderate and severe ID children higher in the communication and motor domains and rate severe ID children higher in the socialization domain than parents do (Hundert et al., 1997). Differences between teacher and parent ratings are significant in the severe ID children in the following domains: communication domain, daily living,

and motor. Mean standard score differences are similar in the post-assessment to pre-assessment results.

Teachers rate the severe ID group significantly higher than parents do in the communication, daily living, and motor domains (Hundert et al., 1997). The difference in the socialization domain is not significant. Mild/moderate ID children and typically developing children are rated as having better communication and motor skills at school and better daily living and socializations skills at home (Hundert et al., 1997). When viewing teacher and parent ratings among Pervasive Developmentally Delayed (PDD), children aged 4 through 6 years show a distinct adaptive profile.

In their study, Szatmari et al., (1994) researched teacher and parent agreement on the VABS and Autism Behavior Checklist among the PDD population. They reported a significant difference between the standard score means for teacher and parent ratings on the VABS. Significant differences are noted between the communication, daily living, socialization, and motor domain scores and between GAC scores (Szatmari et al., 1994). There is a 11.64-point difference between the higher teacher GAC and the lower parent GAC. On average, teachers view PDD skills as more appropriate than parents do. Teacher point differences are higher than parents by approximately 7.9 points in communication, 13.0 points in daily living, 4.2 points in socialization, 8.7 points in motor, and 11.55 points in overall composite functioning (Szatmari et al., 1994, p. 712). On the Autism Behavior Checklist measure, the relating subtest mean score is significantly different, with teachers indicating a higher degree of problems than parents do (Szatmari et al., 1994). While both teachers and parents rate language skills as a

deficit, no other agreement is found among severity levels of Autistic features as rated by teachers and parents on the ABC (Szatmari et al., 1994). Similar findings are found when using other rating scales to measure autism.

Inconsistent findings are noted when teachers and parents complete the Social Responsiveness Scale (SRS) for children with different severity autism levels. For the severely Autistic population only, teachers and parents are in agreement with statistically significant correlations noted on the SRS (Azad, Reisinger, Xie, & Mandell, 2016, p. 372). The researchers note the need for improving assessments procedures to better reflect teacher-parent collaboration of realistic perception of features and characteristics associated with autism. Regarding children with ASD, teachers and parents are less likely to agree on social skills, with the score showing lower agreement than with either internalizing and/or externalizing behaviors (Stratis & Lecavalier, 2015, p. 1034).

Damberga et al. (2014) examined the differences in ABAS-II profiles as rated by teachers and parents regarding learning disabilities involving language and intellectual impairments. Within the learning disabilities group, teachers' and parents' ratings are highly similar in all subtests, domains, and GAC areas with one exception: Communication skills are rated significantly higher by parents than teachers (Damberga et al., 2014, p. 96). There are more area discrepancies in the language impaired group. Parents rate their child higher than teachers in communication, self-care, self-direction, and social skills subtest areas. Parents rate practical domain skills and GAC scores significantly higher than teachers do. Teachers tend to rate ID children higher in functional academic and leisure skills and in the conceptual and social domains than

parents do. In a congruence study with 96% of the participants were receiving speech-language services, teachers scored children approximately 4 points higher in social skills and approximately 4 points lower in problem behaviors as rated on the Social Skills Rating Scale (Dinnebeil et al., 2013, p. 149). Overall, teacher and parent agreement is better when rating a young child with a speech-language disability as compared to typically developing peers. Specifically related to the ABAS-II and language impaired children, teachers reported significantly lower scores when compared to parent scores on the conceptual, social, and practical domains, as well as the overall GAC score (Skreitule-Pikše et al., 2014).

Information collected across various respondents can enrich the overall child's adaptive profile and allow insight into how each respondent perceives, interprets, and understands behaviors demonstrated by the child. Data supplied by parents is no less or more important than that provided by teachers and differences between parents and teachers should be duly noted. Children with different disabilities display different profiles according to who is being questioned or asked to complete an adaptive behavior skills rating scale. Psychologists should be aware of these profiles when diagnosing, creating treatment plans, and/or formulating educational goals. Commonality in adaptive profiles can be seen in a specific population and differences can be viewed across different disability populations. This allows for special education settings to provide group goal work, highlight adaptive strengths, and improve group weaknesses. Understanding group differences and individual dynamics as related to adaptive

functioning can enrich the lives of disabled children across different settings, different providers, and different situations.

Research Related to Ethnic and Placement

In the United States, 18% of children from birth to 5 years are Mexican; 15%, Black; and 53%, White (Landale, Lanza, Hillemeier, & Oropesa, 2013, p. 1303). Children who are male, Black or Latino (in a nonEnglish speaking household), poor, and receiving more than 10 hours per week of care in a nonparent household are more likely to have developmental delays (Simon, Pastor, Avila, & Blumberg, 2013). Landale et al. (2013) found Latino and Black children are more likely than their White peers to be identified as ID and as displaying multiple developmental problems. Latino children display the highest rate of developmental risk factors at 17%; Black, 17%; and White, 7% (Child Trends, 2013). Research also indicates a longstanding pattern of more Blacks being identified as ID or Emotionally Disabled (ED) than other ethnic groups (Daley & Carlson, 2009, p. 413). Over representation of Black children in special education results in less exposure to mainstream, regular, or general curriculum classrooms and a higher likelihood of exposure to tougher forms of discipline (Allen-Meares, 2008, p. 307).

Other data is contradictory suggesting that minority children are less likely to be placed in special education programs (Hibel, Farkas, & Morgan, 2010). Latino children born of immigrant parents show the greatest need for DD special education placement, but they are the least likely to receive such services (Johnson-Motoyama, Moses, Conrad-Hieber, & Mariscal, 2016). Children from minority racial and ethnic groups, including Black and Latino, have more unrecognized therapy needs, as reported by parents, than

White children do (Magnusson et al., 2016, p. 151). In a 2014 parent-report prevalence study of DD, 3.57% of young children are identified as DD with the typical profile being a White male living in a two-parent household with one parent having more than a high school level of education (Zablotsky et al., 2015, p. 5). Female, Black, Latino, and Asian kindergarten children are less frequently identified as DD. (Hibel et al., 2010).

More urban preschoolers are more likely to exit programs by age 8 than rural children (Daley & Carlson, 2009). In addition, 35-68% of preschoolers who receive welfare support display developmental delays but very few receive special education services (Casanueva et al., 2008, p. 251). However, urban children are twice as likely to receive physical and occupational therapy services as their rural peers (McManus, Lindrooth, Richardson, & Rapport, 2016, p. 362). Rural children are more likely to exit a special education program within two years after being eligible for services than suburban and urban children (Daley & Carlson, 2009, p. 419). After being identified in preschool, White children are 27% more likely to be exited from special education as compared to 20% of Black and 17% of Latino children (Daley & Carlson, 2009). Among children who are declassified, 37% are declassified as speech impaired; 21%, DD; and 39%, ED. Once classified in preschool as eligible for a special education category, 70% of all preschoolers exit the Exceptional Children's Program. Better functioning or higher predictor scores are reported as the main reason for the exiting (Daley & Carlson, 2009, p. 419). A majority of parents of preschool children receiving an intervention service (82%) believe their family situation has been improved as a result of an early intervention program and they are optimistic about their child's future (Bailey et al., 2005).

Regarding this study, the ABAS-II has been normed for different ethnic groups (Allen-Meares, 2008) to include Whites, Blacks, and Latinos, as well as a group not specifically identifiable by the test designers (Harrison & Oakland, 2008a). Geographic regions was not specified according to urban, suburban, or rural. Rather, the infant-preschool forms data was collected in 184 United States cities and are identified in terms of region: Northeast, North Central, South, and West (Harrison & Oakland, 2008a, p.60).

Many disabilities are strongly influenced by an individual's ethnicity and values (Norbury & Sparks, 2013). Ethnicity impacts how one defines socially appropriate behaviors such as adaptive functioning. Behaviors, learning processes, and structure vary across different ethnicities and may affect assessment outcomes (Allen-Meares, 2008). Differences may be due to the parent's reason for completing an adaptive form and/or ethnic expectations as to what is appropriate behavior (Ratto et al., 2016). Parental knowledge, beliefs, and understanding regarding development may also play a role in how a parent responds on a rating scale (Ratto et al., 2016). A child's ethnic norms define appropriate behavior in a specific society or community and determine suitable and unsuitable behaviors (Norbury & Sparks, 2013).

Summary

Adaptive behavior describes an individual's ability to adjust and adapt to different experiences and life situations. Defined by the AAMR (2010) and adopted by *DSM-5* (APA, 2013) for diagnostic purposes, adaptive behavior is gauged across different areas of life functioning reflecting personal independence and community responsibility and is described in terms of conceptual, practical, and social skills. NCDPI (2010) requires an

adaptive behavior assessment when determining eligibility for special education services for a child being referred for a DD evaluation. The requirement of addressing and determining an individual's adaptive behavior functioning is also driven by various legally mandated federal policies and procedures and ethically grounded association principles and standards.

My review of the literature indicates adaptive behavior is not stagnant; rather, skills become enhanced, developed, and even impaired over time. At its foundation, appropriate adaptive behavior is imperative when forming interpersonal relationships and engaging in social happenings. It is equally important to understand both the typical profile and the maladaptive behavior of a child diagnosed with a disorder.

Adaptive profiles differ among children with AU, ID, emotional- and behavioral-based disorders, and SLD when compared to typical nondisabled peers. When developing treatment plans and goals for a disabled child, it is important to address relative and significant strengths and weaknesses and realistic expectations over time. It is also important to gain input across different respondents and across different settings. While research is inconsistent regarding agreement accordance across different placement settings, information collected can provide greater insight into the child's unique specifications in adaptive behavior.

When evaluating adaptive and maladaptive behavior, a child's cultural community and ethnicity must be considered. A child develops both adaptive and maladaptive behaviors in response to what is learned, how the behavior is acquired, and how the behavior serves the child. According to legal and ethical principles, in order to

provide a comprehensive description of a child's adaptive behavioral functioning, a psychologist must review all adaptive based data collected from different respondents across different settings and integrate this information with research literature as it relates to the child's specific disability, ethnicity, and ethnic experiences. Only then can one truly and fully understand a child's functioning level of adaptive behavior and impairment level of maladaptive behaviors.

In Chapter 3 of this study, I include (a) additional details regarding methodology, focusing on the study data and details, (b) participant descriptive data, (c) validity and reliability of the ABAS-II, (d) data collection, and (e) analysis of the data.

Chapter 3: Research Methods

Introduction

The process for identifying young children as DD falls under the federal guidelines of IDEA, Public Law 99-457. IDEA includes the Child Find decree requiring school districts to identify, locate, and evaluate all children with disabilities who may be in need of special education and to complete a formal assessment procedure to determine eligibility as defined by the DPI (Martin & Zirkel, 2012). According to the guidelines of Child Find (NCDPI, 2010), adaptive behavior assessment is a required testing element when the IEP team is formally deciding if a child meets the eligibly criteria of DD. Subjective evidence provided by parents, daycare providers, and/or teachers must be considered when a child is referred for evaluation under Child Find (Burns, 2005) Adaptive functioning is one of the required evaluations, and it must be completed by a person knowledgeable about a child's behaviors. Parental involvement is a critical aspect of the assessment process because parents have day-to-day-knowledge of their child's level of personal adaptive functioning; parental input is critical when creating an IEP.

Although there is extensive research related to understanding adaptive behavior involving students with ID (Papazoglou et al., 2014), AU (McDonald et al., 2015), emotional and behavioral disorders (Ditterline et al., 2008), TBI (Ganesalingam et al., 2011), and SLD (Ditterline & Oakland, 2009), little research examines the broader aspects of adaptive skills as they relate to preschool aged children (Booth-LaForce & Kelly, 2004; Daley & Carlson, 2009; Hundert et. al, 1997). These researchers reviewed issues associated to ID and AU preschool aged children (Hundert et al., 1997; Szatmari et

al., 1994) as a predictor of special education success (Daley & Carlson, 2009) and as a measurement tool to address the effectiveness of toddler based programs (Booth-LaForce & Kelly, 2004; Shin et al., 2009). There were no studies found that directly reviewed and specifically addressed the profiles of young children with DD.

In this study, I analyzed archival data from the Adaptive Behavior Assessment Scales (2nd ed.) and ABAS-II Infant and Preschool Forms, specifically the Parent/Primary Caregiver Form GAC standard score. I analyzed the data to determine if there are adaptive behavior differences between DD versus nonDD children, whether adaptive behavior skills differ between children from different ethnicities (White, Black, Hispanic), and to examine the role placement setting prior to testing plays in adaptive behavior ability. The findings provide knowledge about child development as it relates to growth, highlighting the need to reframe programming to include adaptive behavior goals that address weaknesses for both the eligible DD child and noneligible child.

The hypotheses that were tested in this study were whether there are significant differences in Parent/Primary Caregiver Form GAC standard score between DD and nonDD children, between children from different ethnicities (White, Black, Hispanic), and between children placed in different placement setting prior to testing (home, daycare, and school). This study aids in the advancement of DD knowledge.

To answer the research questions posed in Chapter 1, I include in Chapter 3 a description of the research design, methodology, data collection, instrumentation, data analysis methods, and threats to reliability and validity.

RQ1: Are there significant differences in GAC standard score between children eligible for special education services as DD and those not eligible for services based upon ABAS-II Parent/Primary Caregiver Form?

$H_0$1: There are no significant differences in GAC standard score between children eligible for special education services as DD and those not eligible for services.

$H_1$1: There are significant differences in GAC standard score between children eligible for special education services as DD and those not eligible for services.

RQ2: Are there significant differences in GAC standard score between children from different ethnicities (White, Black, Hispanic) based upon ABAS-II Parent/Primary Caregiver Form?

$H_0$2: There are no significant differences in GAC standard score between children from different ethnicities (White, Black, Hispanic).

$H_1$2: There are significant differences in GAC standard score between children from different ethnicities (White, Black, Hispanic).

RQ3: Are there significant differences in GAC standard score between children placed in different placement settings prior to testing (home, daycare, school) based upon ABAS-II Parent/Primary Caregiver Form?

$H_0$3: There are no significant differences in GAC standard score between children placed in different placement setting prior to testing (home, daycare, school).

$H_1$3: There are significant differences in GAC standard score between children placed in different placement setting prior to testing (home, daycare, school).

Research Design and Approach

The questions I addressed in this quasi-experimental quantitative study are whether there are differences in ABAS-II Parent/Primary Caregiver Form GAC standard score between eligibility status (DD eligible or not DD eligible), ethnicity (White, Black, Hispanic), and placement setting prior to testing (home, daycare, school). These hypotheses were analyzed using three one-way designs utilizing ANOVA (Field, 2013). The dependent variables used were the GAC standard score on the ABAS-II Infant and Preschool Forms, namely, the Parent/Primary Caregiver Form.

Prior to conducting an analysis, seven basic assumptions must be addressed when utilizing a one-way ANOVA. The first three assumptions address the data set being utilized.

The first assumption of a one-way design addresses the interval data of the dependent variable and the second assumption identifies at-minimal nominal data of the independent variables consisting of two or more categorical and independent groups. The one-way ANOVA requires the dependent variable to be either ratio or interval data; in this case, the data in this study was interval and met the assumption requirement. In addition, the independent variable must be expressed, at least as nominal with two or more categorical and independent groups (Trochim, 2006). The two types of eligibility (DD eligible and noneligible), three types of ethnicities (White, Black, Hispanic), and

three types of placement settings prior to testing (home, daycare, school) are all considered nominal data and independent; therefore, this assumption was met.

The third assumption indicates that each participant can only fall into one of the types of each dependent variable group (Trochim, 2006). For this study, this assumption was met as there were different participants in each group, in that each participant could only exclusively fit into either the DD eligible or noneligible dependent variable eligibility group; into either the White, Black, or Hispanic dependent variable ethnicity group; and into either the home, daycare, or public school dependent variable placement setting prior to testing group. The final four assumptions were addressed during analysis.

The fourth assumption of a one-way ANOVA design was the notion of no multicollinearity, which is a disturbance in the data where inter-associations among dependent variables cause unreliable interpretations (Laureate, 2009; Trochim, 2006; Wadsworth, 2005). For this study, there was only one dependent variable, ABAS-II GAC; thus, redundancy and correlation to any other predictor variable was impossible. The dependent variable was exclusive and did not overlap any independent variable (Field, 2013; Laureate, 2009; Trochim, 2006; Wadsworth, 2005). Statistical analysis was not necessary.

Since I was using a one-way ANOVA, there was a fifth assumption that the dependent variable reflects a multivariate normal distribution, which was univariate (Wadsworth, 2005). This was verified during analysis by using a graph or tested with a goodness of fit against a normal distribution, for example, chi-square.

The sixth assumption of the one-way ANOVA was homoscedasticity, which is that the relationship between the independent and dependent variables is similar across all values of the independent variables as determined by Levenes's Test of Equality of Error Variances (Laureate, 2009; Trochim, 2006; Wadsworth, 2005). The Levene's Test addresses the measurement error to make sure the dependent variable is consistent along the scale and does not change as it relates to larger values (Field, 2013; Trochim, 2006; Wadsworth, 2005).

The seventh and final assumption stressed that there were no significant outliers among the population that could be determined by creating a boxplot (Laureate, 2009; Trochim, 2006; Wadsworth, 2005). Levenes's Test of Equality of Error Variances and a boxplot were conducted during statistical analysis.

Setting and Sample

The data was archival and included ABAS-II Parent/Primary Caregiver Form scores for 333 children being referred for DD only for school years 2006 through 2016. The research setting was a rural Southeastern U.S. school district that assessed preschool aged children according to Child Find law. Children were referred to the preschool coordinator by medical professionals, health care providers, educators, daycare workers, parents, and any other individual suggesting a child needed services and educational-based supports.

According to NCDPI procedures, referral/prior notice forms were completed along with a consent for evaluation/prior notice form, including permission to complete an evaluation in order to gain information regarding their child's adaptive behavior.

According to the evaluation/prior notice paperwork and as it related to this study, adaptive behavior was defined as "functional behavior that is needed to meet the natural and social demands in one's environment, including daily living and self-help skills" (NCDPI, 2010, p. 7).

Data Collection and Analysis

Data collection forms were originally administered by an educational diagnostic technician or interpreter and returned to the licensed psychological associate for interpretation. ABAS-II Forms were computer scored using ABAS-II Scoring Assistant (Harrison & Oakland, 2003b) to determine a child's level of adaptive functioning, which is one of the requirements necessary for an IEP team to determine eligibility as DD. There were 333 total student participants with archival ABAS-II scores for the school years 2006 through 2016.

The archival data set, proposed by PASSEC, was an Excel spreadsheet that included ABAS-II Forms collected during the school years 2006-2007 through 2015-2016 only. The variables listed on the Excel spreadsheet included participant number, age in months, gender, race, placement setting prior to evaluation, eligibility status, and all ABAS-II standard scores. Names were coded as numbers, rendering all participants anonymous. PASSEC owns, protects, stores, and maintains all completed protocols/compuscores; the school district owns, protects, stores, and maintains all written reports. I had sole access to any archived protocols, and files cannot be accessed without PASSEC permission. PASSEC gave me permission to utilize the data set for this study (Appendix A and Appendix B). A data entry specialist was hired by PASSEC to

place ABAS-II compuscore data into an Excel spreadsheet. Prior to the data entry specialist receiving the data, all compuscore records had student, parent and teacher identities removed by PASSEC.

Data was entered into SPSS Statistical Software for analysis. Participants' characteristics (age and gender) were represented by descriptive statistics with frequencies and percentages identified for all independent variables. Mean and standard deviation of dependent variable was provided. According to Walden IRB guidelines for archival research, I had not reviewed the content of the Excel spreadsheet or begun any analysis prior to permission.

Instrumentation and Materials

The instrumentation used in this study to measure the dependent variable, adaptive behavior, was the Adaptive Behavior Assessment System, Second Edition (ABAS-II) Infant and Preschool Forms (aged birth through five years), specifically, the Parent/Primary Caregiver Form. When the archival data was initially collected, Spanish versions were utilized when the respondent was unable to read English. During the original collection, if the respondent was unable to read at the fifth-grade level as the protocols required, reading assistance was provided by either an English-speaking individual (educational diagnostic technician) or a bilingual interpreter.

The ABAS-II is a comprehensive, norm-referenced measure, that assesses a child's level of adaptive behavior functioning in ten areas using the Parent/Primary Caregiver Form. The ABAS-II is a helpful tool in identifying adaptive skill strengths and limitations across settings (Harrison and Oakland, 2008). Skill areas, as identified by the

DSM-IV-TR, are formulated into scaled scores (Burns, 2005). Scaled scores are based on a mean of 10, a standard deviation of 3, and an average range of 7 to 13. The ABAS-II also provides domain scores and an overall GAC standard score.

A domain is calculated by statistically combining specific skill areas. These combinations are as follows: conceptual domain (communication, functional academics, and self-direction skills), social domain (leisure and social skills), and practical domain (community use, home living, health and safety, and self-care skills). An additional motor skill subtest score is calculated; this score does not load into any of the three domain area scores, but it does factor into the overall composite score. The three domain areas are reflective of definitions provided by the AAMR (Burns, 2005). The ABAS-II provides an overall GAC standard score. Domain and GAC totals are norm-referenced standard scores based on a mean of 100, a standard deviation of 15, and an average range of 85-115 (Harrison and Oakland, 2008, p. 32). Each individual's scaled score, domain standard scores, and overall GAC standard score were used for analysis in this study.

The ABAS-II is well grounded in theoretical principles based on definitions provided by the AAMR (2002) and the *DSM-IV-TR* (American Psychiatric Association, 2000; (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). The ABAS-II norms are closely commensurate with age, gender, ethnicity, geographically respective, and U.S. census information (Burns, 2005; Meikamp & Suppa, 2005). Test reviewers support the diagnostic utility of the ABAS-II among many populations to include developmental delays (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). Reviewers view the ABAS-II as a solid measure to emphasize clinical validity and

a highly reliable tool to provide the data necessary to make eligibility and intervention development decisions (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). The measure is also regarded as consistent with definitions put forth by the IDEA (U.S. Code Service, 2007) classification system for special education and disability (Harrison & Oakland, 2008a).

One identified area of weakness with the ABAS-II was addressed by Burns (2005) who reported the percentage of children in the ABAS-II sampling measure with a disability was 2.93%, which is far below the 11% school age population with a disability identified by the U.S. Department of Education.

Reliability and Validity

According to frequently cited test reviewer and University of Missouri professor Mathew K. Burns (2005), reliability and validity data are well within the range of acceptance, suggesting the scores provided by the ABAS-II can be interpreted with confidence. Overall coefficients exceed .90 for the GAC score for preschool aged children. Internal consistency, test-retest, interrater and cross form consistency reliability measures are above .70 with the lowest coefficient associated with cross respondent reliability (Burns, 2005). Reliability coefficients for GAC range from .97 to .99; the three domains range from .91 to .98; and the skill area mean is .90 with a range from .80 to .97 (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). Reliability data indicate a high degree of internal consistency. The ABAS-II is considered reliable for assessing individuals across different functioning levels, ages, and diagnoses (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005).

Test-retest reliability coefficients are adequate (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). These coefficients include the following: .90 for GAC; domains are all within the .80 range; and skill test-retest reliability range from .70 to .90. Interrater reliability is also noteworthy, with coefficients ranging from .82 to .93. The lowest ranging correlations are between the parent's and teacher's ratings (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005).

In terms of validity, test reviewers report the ABAS-II content validity is highly appropriate across experts, respondents, and level of theoretical consistency as the measure adheres to AAMR and *DSM-IV-TR* definitions (Burns, 2005; Meikamp & Suppa, 2005). Skill-scaled scores, domain standard scores, and overall GAC standard score are inter-correlated with coefficients ranging from .47 to .93 as confirmed by factor analysis (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). Convergent validity compliments other adaptive measures, specifically, VABS-II (Burns, 2005; Harrison & Oakland, 2008a; Meikamp & Suppa, 2005). Thus, the ABAS-II measures what it purports to measure.

Protection of Human Participants and Privacy

To maintain the highest level of rights and protection, I obtained permission for this study from the Institutional Review Board (IRB) of Walden University. The IRB approval number for this study is 09-09-17-0333453. All data was archival and no participant was or can be identified. All data was coded and stored securely by the original collector with a data entry specialist placing the raw data into a spreadsheet. All

ABAS-II Scoring Assistant (Harrison & Oakland, 2003b) databases were expunged at the end of each corresponding school year.

Original protocols, that is, the paper records, are secured by Psychological and School Services of Eastern Carolina, PLLC, in a safe location and protected from damage and destruction. Consistent with legal and regulatory requirements and ethical standards (e.g., Ethics Code, Standard 6.02; HIPAA Privacy Rule and Security Rule), procedures are in place to limit access of records to the sole proprietor only; and, in the case of an unforeseen tragedy, a secondary psychologist, who is licensed and appropriately trained, will maintain the records. The data spreadsheet will be stored indefinitely in a password–protected computer program by PASSEC. In order to safeguard the archival data and address concerns of confidentiality and protection from harm, the above procedures have been and will continue to be closely followed by PASSEC.

Ethical Considerations

The risks of this study have been considered carefully by the researcher. Since the data is archival, there are no anticipated harmful effects to the participants. The role of this researcher was to analyze the archival data. The dual role of the licensed psychological associate has not affected the analysis of the data since all ABAS-II tests were previously administered by a third party and scored using approved the ABAS-II Scoring Assistant (Harrison & Oakland, 2003b) program.

Summary

The study examined the relationships between children identified as DD versus those children not identified as DD, three ethnicities (White, Black, Hispanic) and three

different placement settings prior to testing (home, daycare, school) with the ABAS-II Parent/Primary Caregiver Form GAC standard score. This study utilized archival data and analyzed that data using quantitative methods with three one-way designs analysis of variance study design. Patterns of data, findings, and result conclusions are explained in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this study was to examine the differences among the GAC standard score (dependent variable) of parent ratings on the ABAS-II Adaptive Behavior Assessment Scales (2nd ed.) Parent/Primary Caregiver Form across different independent variables of eligibility status (DD eligible and noneligible), ethnicity (White, Black, Hispanic), and prior placement setting (home, daycare, public school). The objective of this study was to determine those differences among the GAC standard score as measured by parents for all children being referred for assessment to determine special education status between the August 2006 to June 2016 school years.

The hypotheses that were tested in this study were concerning whether there were significant differences in Parent/Primary Caregiver Form GAC standard score between DD and nonDD children, between children from different ethnicities (White, Black, Hispanic), and between children placed in different placement settings prior to testing (home, daycare, and school).

The research questions were as follows:

RQ1: Are there significant differences in GAC standard scores for children eligible for special education services as DD and those not eligible for services based upon ABAS-II ratings by parents/primary caregivers?

RQ2: Are there significant differences in GAC standard scores among children from different ethnicities (White, Black, Hispanic) based upon ABAS-II ratings by parents/primary caregivers?

RQ3: Are there significant differences in GAC standard scores among children in different placement settings (home, daycare, public school) based upon ABAS-II ratings by parents/primary caregivers?

In this chapter, I provide a review of the data collected, descriptive information, demographic characteristics, statistical analysis, and summarized findings related to the research questions. The results discussed include descriptive statistics characterizing the sample population, descriptive statistics for the variables used in the study (measures of central tendency for continuous/interval variables and frequency distributions for nominal/categorical variables), evaluation of the statistical assumptions (ANOVA was used to examine Hypotheses 1, 2, and 3), and reported statistical analysis in relation to the research questions and hypotheses. I present a summation addressing the study's answers to the research question at the end of the chapter.

Data Collection

The time frame for the data collection set was from 2006-2007 to 2015-2016 school years. All participants were initially referred to a public school system preschool program via the Child Find Project. Referrals were accepted from medical practices, parents, daycares, and other professionals, as well as from anonymous sources. Following receiving referrals by the prekindergarten coordinator, participants completed the DEC process. Each participant's parent or legal guardian was contacted to complete paperwork and to agree to permission to conduct a comprehensive, formal evaluation that included an adaptive behavior functioning assessment. The consent form allowed participants to refuse or withdraw from the free-of-cost evaluation at any time during the referral

process. There was a high response rate and no reported drop-outs or refusal of participation occurred, granting PASSEC the ability to conduct the requested and required evaluations. The participants were then referred to PASSEC where a licensed school psychologist and licensed psychological associate conducted an evaluation.

The data collection for the dataset involved PASSEC's psychologist assessing the participants in three different placements. The first area included the participants from private daycare centers who were excused from their scheduled day to be evaluated. The second setting involved home participants who came into a local school to be evaluated by PASSEC's psychologist. The third setting involved participants who were already attending a preschool program in the district. Those participants were excused from the daily schedule to partake in assessment. While the school system Exceptional Children department owns the results report, PASSEC has the sole rights to all equipment and protocols used in the process of the evaluation. Therefore, the procedure for gaining access to the dataset involved a contractual agreement between the provider of the data, namely PASSEC, and the data recipient (researcher), which permitted limited data set use for research activities for this study alone. The data set agreement with PASSEC was limited to the identified demographic information and scores for ABAS-II administered. The agreement excluded the written reports from PASSEC's evaluations that are owned exclusively by Duplin County Public School Exceptional Children Department. A detailed copy of the Data Use Agreement contract is in Appendix B. Regarding possible discrepancies in data collection, because the study utilized secondary, archival data, there

were no identified discrepancies in the data set and collection previously presented in Chapter 3.

Sample Description

The sample size of 333 participants exceeded the proposed power analysis number determined by GPower. Therefore, the sample size was adequate to determine significant differences in ANOVA. The sample for this study was archival data collected from August 2006 to June 2016 from PASSEC. The baseline of the sampling group was all preschool children ages 2 years, 11 months to 5 years, 8 months who were referred for psychological evaluation to be conducted by a licensed school psychologist and licensed psychological associate as governed by Child Find Project in North Carolina and North Carolina Department of Public Instruction (NCDPI).

The archival sample totaled 333 participants, which consisted of males (67.9%) and females (32.1%) with an average age of 47.07 months. Within the sampling group, (N = 333), 105 (31.5%) were White, 101 (30.3%) were Black, 114 (34.2%) were Hispanic, and 13 (3.9%) were Other. Regarding eligibility, the IEP team found 216 (64.9%) eligible for services and 117 (35.1%) not eligible for DD services.

The archival data collection involved three different placement settings prior to a psychological evaluation. The first setting involved children attending a public-school setting (30.6 %) with learning being provided by a licensed early education teacher. The next setting involved children attending a privately owned daycare center (16.2%). The final setting involved children who were at home most the day (53.2 %) and whose parents brought the child into the public school setting for testing. Table 1 represents the

sample baseline descriptive and demographic characteristics of this study's data collection set.

Table 1

Demographics for Overall Sample

Variable	*N*	%
Sex		
Male	226	67.9
Female	107	32.1
Race		
White	105	31.5
Black	101	30.3
Hispanic	114	34.2
Other	13	3.9
Placement prior to testing		
Home	177	53.2
Daycare	54	16.2
School	102	30.6
Eligibility for services		
Developmentally Delayed	216	64.9
No placement	117	35.1

Note. (N = 335)

In addition, data from ABAS-II were collected. The ABAS-II Parent/Primary Caregiver Form GAC standard score for those in the White group was M = 78.62, SD = 15.19, for those in the Black group it was M = 80.81, SD = 19.62, and for those in the Hispanic group, it was M = 74.63, SD = 17.99, which can be viewed in Table 2.

Table 2

Descriptive Statistics for Culture Across Standard Scores on ABAS-II

Measures	Group	Mean	Std. deviation	*N*
ABAS-II Parent-GAC	White	78.62	15.19	101
	Black	80.81	19.62	96
	Hispanic	74.63	17.99	110

Next, descriptive statistics were calculated for children eligible for DD services and those not meeting DD eligibility. The ABAS-II Parent/Primary Caregiver Form GAC standard score for those eligible for DD services was $M = 73.99$, $SD = 17.93$, and for those not meeting eligibility it was $M = 83.32$, $SD = 15.56$. For those students meeting DD eligibility, the ABAS-II Parent/Primary Caregiver Form GAC standard score for those in the White group was $M = 77.52$, $SD = 15.56$, for those in the Black group it was $M = 77.88$, $SD = 22.76$, and for those in the Hispanic group it was $M = 68.00$, $SD = 13.65$. For those students not eligible as DD, the ABAS-II Parent/Primary Caregiver Form GAC standard score for those in the White group was $M = 82.67$, $SD = 16.54$, for those in the Black group it was $M = 77.17$, $SD = 9.58$, and for those in the Hispanic group it was $M = 87.60$, $SD = 17.02$. The breakdown into prior placement and ethnicity is illustrated in Table 3

Table 3

Descriptive Statistics across Culture and Eligibility Status for Standard Scores on ABAS-II

Measures	Group	Mean	Std. deviation	*N*
DD eligible	White	77.20	16.80	10
ABAS-II Parent-Composite	Black	74.43	22.93	14
	Hispanic	68.80	15.41	15
Not eligible	White	96.00	14.14	2
ABAS-II Parent-Composite	Black	76.00	10.95	5
	Hispanic	85.00	21.37	5

Note. Case Processing Summary is limited to first 100 cases

Statistical Assumptions

A one-way ANOVA was chosen to study the differences of two or more independent variables and how these variables interact (Frankfort-Nachmias & Nachmias, 2008). Specifically, ANOVA was used to examine the difference between (or influence of) eligibility group (DD eligible and noneligible), ethnicity group (White, Black, and Hispanic), and placement setting prior to testing group (home, daycare, and public school) on the dependent variable, ABAS-II Parent/Primary Caregiver Form GAC standard scores. Statistical analyses were performed to ensure the data met the assumptions of the ANOVA analysis. To utilize ANOVA, the data must consist of dependent variables measured at the interval level (continuous data). This assumption was met as the GAC score on the ABAS-II are standard scores with a mean of 100 and standard deviation of 15. In addition, all independent variable data must be nominal. This assumption was also met as the independent data is categorically discrete data. The

notion of multicollinearity was controlled by having a high sample size (Field, 2013; Trochim, 2006; Wadsworth, 2005).

The assumption of homogeneity of variance is important when conducting ANOVA statistics. Homogeneity of variance assumes that all groups have similar variance. The homogeneity of variance was evaluated, and as depicted on Table 4, the equality of variance for the dependent variable was met.

Table 4

Levene's Test of Error Variances for Eligibility and Scores on ABAS-II

Variable	*F*	*df1*	*df2*	*P*
ABAS-II Parent General Adaptive Composite	1.388	1	318	.240

Note. Intercept + Group Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Table 5 illustrates error variances for ethnicity and GAC standard score on the ABAS-II. Levene's test indicated equal variances ($F = 1.95$, $p = .119$). As depicted in Table 5, the assumption of homogeneity of variance was met.

Table 5

Levene's Test of Error Variances for Culture and Scores on ABAS-II

Variable	*F*	*df1*	*df2*	*P*
ABAS-II Parent General Adaptive Composite	1.95	3	316	.119

Note. Intercept + Group Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

As depicted in Table 6, for the prior placement, independent variable group, the *F* value for Levene's test on ABAS-II Parent GAC domain scores was .833. The null hypothesis (no difference) is retained for the assumption of homogeneity of variance which concludes there is no significant difference between each dependent group variance.

Table 6

Levene's Test of Error Variances for Prior Placement and Scores on ABAS-II

Variable	*F*	*df1*	*df2*	*P*
ABAS-II Parent General Adaptive Composite	.833	2	317	.436

Note. Intercept + Group Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Utilizing a SPSS boxplot, outliers were identified which can potentially move the mean from the median and thereby impact the findings of this study. In terms of ABAS-II Parent/Primary Caregiver Form GAC standard scores, there were a few outliers across different cultures. Outliers included 2 upper quartile Black which were noted in the GAC domain. While these outliers are significantly higher than the mean sample of the population, they will not be deleted from the data set as the overall population size is substantial with data points far from the mean deemed as reasonable. In large samples, a small number of outliers is to be expected (Ruan et al., 2005, p. 318). If the data set is large enough, outliers should not affect the test of significance (Field, 2013).

Research Questions and Results

The purpose of this study was to investigate the differences between the independent variables of eligibility status (DD eligible and noneligible), ethnicity (Black, White, Hispanic), and placement setting prior to testing (home, daycare, public school) across the dependent variable; namely, Parent/Primary Caregiver Form GAC standard score on the ABAS-II. The RQs were as follows: RQ1: Are there significant differences in GAC standard scores for children eligible for special education services as DD and those not eligible for services based upon ABAS-II ratings by parents/primary caregivers?

RQ2: Are there significant differences in GAC standard scores among children from different ethnicities (White, Black, Hispanic) based upon ABAS-II ratings by parents/primary caregivers?

RQ3: Are there significant differences in GAC standard scores among children in different placement settings (home, daycare, public school) based upon ABAS-II ratings by parents/primary caregivers?

Research Question 1

For the first research question, I examined whether there was a difference in Parent/Primary Caregiver Form GAC standard score on the ABAS-II among children eligible for DD services and those found not eligible for services as determined by the IEP team. A one-way ANOVA was conducted to assess the mean differences of each eligibility group to the ABAS-II Parent/Primary Caregiver Form GAC standard scores.

ANOVA used GAC standard scores as a dependent variable and eligibility as a factor. Table 7 provides results.

Table 7

ANOVA for ABAS-II GAC Standard Scores Between DD Eligible and Noneligible

Dependent variable	*df*	*F*	*N*	P
ABAS-II Parent GAC	1	21.51*	6322.52	293.97

Note. * $p < 0.01$

There was a significant effect of ABAS-II Parent/Primary Caregiver Form GAC standard score on eligibility status at the $p < .05$ level for the two levels of the independent variable [$F(1, 318) = 21.51, p < 0.001$]

Research Question 2

For the second research question, I examined whether there was a difference in Parent/Primary Caregiver Form GAC standard score on the ABAS-II among different ethnicities. A one-way ANOVA was conducted to assess the mean differences of each ethnicity group to the ABAS-II Parent/Primary Caregiver Form GAC standard score. ANOVA used Parent/Primary Caregiver Form GAC standard score as a dependent variable and ethnicity as an independent variable. Note that "Other Ethnicity" was supplied as a group on the data set but was not included in the interpretation. These changes reflect the formal nature of reporting. There was no significant effect of ABAS-II Parent/Primary Caregiver Form GAC domain standard score on ethnicity at the p<.05

level for the three levels of the independent variable [$F(3, 316) = 2.19$, $p = 0.088$]. See Table 8.

Table 8

Bonferroni Comparison for ABAS-II GAC Standard Scores for Ethnicity

Dependent Variable	Comparisons	Mean Score Difference	Std. Error	95% CI Lower Bound	95% CI Upper Bound
ABAS-II Parent GAC	White vs. Black	-4.28	2.51	-10.94	2.37
	White vs. Hispanic	1.90	2.42	-4.54	8.33
	Black vs. Hispanic	6.18	2.46	-0.34	12.71

Note. * $p < 0.05$

Research Question 3

For the third research question, I examined whether there was a difference in Parent/Primary Caregiver Form GAC standard score on the ABAS-II among different placement settings prior to testing. A one-way ANOVA was conducted to assess the mean differences of each prior placement group to the ABAS-II Parent/Primary Caregiver Form GAC standard score. ANOVA used Parent/Primary Caregiver Form GAC standard score as a dependent variable and placement setting prior to testing as a factor.

As illustrated in Table 9, ANOVA was used to compare the effect of ABAS-II Parent/Primary Caregiver Form GAC standard score on prior placement. There was a significant effect of ABAS-II Parent/Primary Caregiver Form GAC standard score on prior placement setting at the $p < .05$ level for the three levels of the independent variable

[$F(2, 317) = 6.60$, $p = 0.002$]. Mean scores for ABAS-II Parent/Primary Caregiver Form GAC standard score were significantly different between Public School and Home ($p < .001$), but not between Public School and Daycare ($p < 1.000$) and Home and Daycare ($p < .205$).

Table 9

Bonferroni Comparison for ABAS-II GAC Standard Scores

Dependent variable	Comparisons	Mean score difference	Std. error	95% CI Lower bound	95% CI Upper bound
ABAS-II Parent GAC	School vs. home	7.85*	2.23	2.49	13.22
	School vs. daycare	2.79	3.03	-4.50	10.08
	Home vs. daycare	-5.06	2.76	-11.71	1.59

Note. * $p < 0.05$

Summary

This study's statistical analysis was reported with minimal violations to some of the ANOVA assumptions. First, there were two outliers noted; in large samples, a small number of outliers is to be expected (Ruan et al., 2005, p, 318). The assumption of homogeneity of variance was met for all dependent variable groups: eligibility status, ethnicity, and placement setting prior to testing.

In examining the diagnostic measures and data results as they relate to research question 1, there are differences in Parent/Primary Caregiver Form GAC standard score for children eligible for special education services as DD and those not eligible for services. The DD eligible mean standard scores were significantly lower than those

children not eligible for DD services. In examining the diagnostic measures and data results as they related to research question 2, there was no difference identified in terms of ethnicities based upon ABAS-II Parent/Primary Caregiver Form GAC standard score.

In examining the diagnostic measures and data results as they relate to research question 3, there were differences identified in terms of placement setting prior to testing based upon ABAS-II GAC standard scores of parents/primary caregivers. Mean standard scores for ABAS-II Parent/Primary Caregiver Form GAC standard scores were higher for children attending public school prior to testing versus children at home prior to testing. There were no differences in parent ABAS-II Parent/Primary Caregiver Form GAC standard scores between children attending public school or and children in a daycare prior placement setting groups prior to evaluation.

The additional findings of the current study will be further addressed in Chapter 5. Also, in Chapter 5, I include (a) overall findings as compared to the literature, (b) conclusions and implications will be drawn, and (c) a series of recommendations will be suggested.

Chapter 5: Discussions, Conclusions, and Recommendations

Introduction

Based on the identified gap in the literature established in Chapter 2 regarding differences in adaptive skills among different eligibility status (DD eligible and noneligible children), different ethnic groups (Black, White, and Hispanic), and different placement settings prior to testing (home, daycare, and public school), this study was conducted to investigate if differences existed and, if they did, the magnitude of those differences. Specifically, I examined the dependent variable ABAS-II Adaptive Behavior Assessment Scales (2nd ed.) Parent/Caregiver Form GAC standard score as reported by parents to determine if it was different among three independent variables: eligibility status, ethnicity, and placement setting prior to testing. Subsequently, by investigating these differences, I sought to contribute valuable data to fill the gap in the existing DD literature.

Nature of the Study

This study consisted of one dependent variable, GAC standard scores on the ABAS-II Parent/Caregiver Form. The independent variables were eligibility status (DD eligible and noneligible children), ethnicity (Black, White, and Hispanic), and placement setting prior to testing (home, daycare, and public school). The population sample was obtained from archival data collected during the school years spanning August 2006 through June 2016 by PASSEC. The participants were preschool children, aged 2 to 5 years, who were referred by the Child Find Project in North Carolina to the preschool coordinator, who then referred them to PASSEC for psychoeducational evaluation. The

data were analyzed using three separate one-way ANOVAs that consisted of one dependent variable with continuous data and three independent variables with categorical data. The ANOVA statistical analysis aptly examined if ABAS-II domain standard score differences existed between eligibility status, ethnicity, and placement setting prior to testing.

Key Findings

Three separate one-way ANOVAs were used to determine if there were differences between the dependent variable, ABAS-II Parent/Primary Caregiver Form GAC standard score, across three independent variables: eligibility status, ethnicity, and placement setting prior to testing. The statistical analysis suggested the following key findings:

1. There was a significant effect of ABAS-II Parent/Primary Caregiver Form GAC standard score on eligibility status at the $p < .05$ level for the two levels of the independent variable [$F(1, 318) = 21.51$, $p = 0.000$].
2. There was no significant effect of ABAS-II Parent/Primary Caregiver Form GAC domain standard score on ethnicity at the $p < .05$ level for the three levels of the independent variable [$F(3, 316) = 2.19$, $p = 0.088$].
3. There was a significant effect of ABAS-II Parent/Primary Caregiver Form GAC standard score on prior placement setting at the $p < .05$ level for the three levels of the independent variable [$F(2, 317) = 6.60$, $p = 0.002$]. Mean scores for ABAS-II Parent/Primary Caregiver Form GAC standard score were significantly different between public school and home ($p < .001$) but not

between public school and daycare ($p < 1.000$) and home and daycare ($p < .205$).

Interpretation of the Findings

This study's findings were interpreted within the context of the Bandura's social learning theory and legal mandates. The term adaptive behavior describes a set of abilities associated with daily functioning and the extent to which an individual independently performs age-appropriate skills, typically meets developmental milestones, functions academically, acts responsibly in a myriad of situations, and assumes social responsibility and adjustment contingent upon progress and adult feedback (Bandura, 1986). Bandura's social learning theory is an underlying theoretical perspective associated with the development of adaptive skills in children. Social learning theory posits that children learn behaviors from adults and act a certain way. They must view the skill performed by another individual and have the cognitive fortitude to retain and recall the observation for later use (Bandura, 1986).

For this study, three placement settings prior to testing were utilized as one of the independent variables. In each setting, the child had the opportunity to perceive, observe, imitate, and model what was occurring in his environment. In reviewing the data results as they relate to Research Question 3, I identified differences in terms of placement setting prior to testing based upon ABAS-II GAC standard scores of parents/primary caregivers. The mean standard scores for ABAS-II Parent/Primary Caregiver Form GAC were higher for children attending public school programs prior to testing than for children at home prior to testing. When utilizing Bandura's social learning theory, a

researcher should consider that the public preschool setting provides a greater depth and variety of exposure to different behavior sets and expectations than does the home setting. Breadth, depth, and variety in activities, as well as the opportunity to practice the activities, may have contributed to higher GAC standard scores for children from a public school setting. I concurred with previous research conducted by Booth-LaForce and Kelly (2004), who concluded that disabled preschool children benefit from being placed in a specialized placement program as evidenced by increased adaptive scores**,** which are significantly greater than the scores of disabled preschool children being cared for at home. Parents, too, have a positive perspective toward early intervention programs. Parents of children receiving early intervention programs believed that such programs not only secured a more optimistic future for the disabled child but also improved family situations (Bailey et al., 2005).

The reason for utilizing adaptive assessment as part of the DD protocol is based on federal legal proceedings translated, transformed, and interpreted by the LEA into policy and procedure (Ditterline & Oakland, 2009). From a principled perspective, it is important that the use of adaptive behavior assessment for diagnostic purposes be driven by ethical principles. To be classified as DD, the referred child must have a delay in development in one or more of five key skill areas: physical, cognitive, communication, social/emotional, and adaptive (NCDPI, 2010).

In examining the data results as they relate to Research Question 1, I indicated that there were significant differences in Parent/Primary Caregiver Form GAC standard score for children eligible for special education services as DD and those not eligible for

services. Therefore, true to the eligibility requirement, DD children exhibited significant problems in adaptive behavior skills when compared to their nonDD or typical counterparts.

In reviewing question 2, there were no significant differences in ABAS-II GAC scores among children from different cultures. However, the research literature noted an underrepresentation and overrepresentation of minorities in special education programs. Researchers found an overrepresentation of Black children in special education (Allen-Meares, 2008, p. 307; Daley & Carlson, 2009, p. 413) while other research found that Latino children displayed the highest rate of developmental risk factors (Landale et al., 2013). Landale et al. (2013) found both Latino and Black children were more likely than their White peers to be identified as ID and to be seen as displaying multiple developmental problems. Still other data were contradictory, finding that minority children were less likely to be placed in special education programs and less likely to receive needed therapy services (Hibel, Farkas, & Morgan, 2010; Johnson-Motoyama et al., 2016; Magnusson et al., 2016).

I found that among White preschool aged children, 71.4% ($N = 105$) were identified as DD, among Black preschool aged children, 68.3% ($N = 101$) were identified as DD, and among Hispanic preschool aged children, 54.4% ($N = 114$) were identified as DD. Results of a Pearson Chi-Square are $X(3) = 8.835$, $p = .032$, indicating no statistically significant association between culture and eligibility status. The calculated data from this study did not support previous research that minorities are over- or under-identified as eligible for special education services (Allen-Meares, 2008; Daley &

Carlson, 2009; Landale et al., 2013). White, Black, and Hispanic children were equally found eligible for DD special education services.

While not a part of the current study research questions, data collected from a review of the literature indicates that female children were less frequently identified as DD (Hibel et al., 2010). This was not found in the current study. I found that among female preschool aged children, 64.5% ($N = 107$) were identified as DD and among male preschool aged children, 65.0% ($N = 226$) were identified as DD. Results of a Pearson Chi-Square are $X(1) = 0.010$, $p = .921$, indicating no statistically significant association between gender and eligibility status. Female and male children were equally found as eligible for DD special education services.

Limitations of the Study

I concluded that the data collected from this study confirmed some limitations that aligned with previous limitations discussed in Chapter 1 of this study. The use of secondary data limited this study's generalizability. Specifically, the results may not extend past this distinct population, which was a highly agriculture, rural county in North Carolina, to different populations in other regions of the United States.

While statistical techniques were utilized to address confounding variable issues associated with a one-way ANOVA design, limitations associated with a quasi-experimental design cannot be ruled out as mitigating factors. These negative aspects associated with a quasi-experimental design included the following challenges to internal stability: hidden variables, confounding or extraneous variables, situational variables, response and belief of the participant, and assumptions about causal relationships

(Creswell, 2009; Frankfort-Nachmias & Nachmias, 2008). No limitations in terms of the ABAS-II were identified, which is in accordance with test reviewers Burns (2005) and Meikamp and Suppa (2005). Scores can be interpreted and utilized with confidence and assurance (Burns, 2005).

Recommendations for Further Research

This study's target population was limited to preschool children in Duplin County, NC, who were referred by the Child Find Project in NC to the preschool coordinator who contracts with PASSEC for psychoeducational testing. Future studies should include a broader target population, which would increase generalizability and provide more empirical data about the distinctions and nuances associated with various racial and cultural perceptions of the DD population across a myriad of regions.

Additionally, since secondary data analysis was utilized, there was no control over what had been done during the initial data collection process. For instance, the data collected by PASSEC were limited to assessment conducted by the children's psychologist and did not include interviews, observations, and/or evaluations conducted by other school-based employees. Not having access to this data may have narrowed the scope of this study. Future studies that incorporate full access to primary documentation and other evaluations from multidisciplinary sources would improve this study's findings.

Finally, this study was limited in providing understanding only of those differences between GAC standard scores on the ABAS-II Parent/Primary Caregiver Form. Future studies that review the differences between the independent variables of

this study and the ABAS-II conceptual, social, and practical domain standard scores and/or the subtest scaled scores would improve this study by determining those specific adaptive behavior skills that may prove to be significantly different. Future studies should mimic this study but, instead of using the ABAS-II Parent/Primary Caregiver Form as the dependent variable, the ABAS-II Teacher/Daycare Provider Form should be analyzed. Including the ratings completed by the teacher and/or daycare provider would expand the understanding of the DD child.

Advancing Research

The data in this study showed that the domain standard scores on the ABAS-II for the DD eligible were significantly different than those for the nonDD eligible groups. The results were commensurate with the empirical research of other research studies looking at the adaptive behavior of other disabled children. Individuals with intellectual deficits display below average scores in global adaptive composite scores on the ABAS-II when compared to same aged peers (Harrison & Oakland, 2008, p. 140.). Within the ID studies, children meeting the criteria as ID show significant deficits in global adaptive functioning with severity of disability impacting the severity of adaptive functioning (Papazoglou et al., 2014). Autistic children display below average in overall and global adaptive behavior functioning (Chang, Yen, & Yanga, 2013; Ditterline et al., 2008; Lopata et al, 2012; Harrison & Oakland, 2008, p. 157). Children diagnosed with FAS display lower scores on the overall GAC on the ABAS-II when compared to other typically performing peers (Motz et al., 2013).

The data indicated a difference between children attending a public preschool program and those children being cared for at home. The results were commensurate with existing research which suggests preschool children, especially disabled ones, benefit from being placed in a specialized placement program (Booth-LaForce & Kelly, 2004). There is evidence in the literature that adaptive scores are significantly greater for children placed in a specialized program than those scores of disabled preschool children being cared for at home (Booth-LaForce & Kelly, 2004). The data helps to highlight the need for preschool programs that are taught by trained professionals.

Finally, the results indicate that there were no significant differences in GAC standard scores across the three ethnicities (White, Black, and Hispanic). While not specific to adaptive behavior, children who are either Black male or Hispanic male are more likely to have developmental delays (Simon, Pastor, Avila, & Blumberg, 2013). Landale et al. (2013) found Latino and Black children are more likely than their White peers to be identified as ID and as display multiple developmental problems. Other data have been seen as contradictory suggesting that minority children are less likely to be placed in special education programs (Hibel, Farkas, & Morgan, 2010). The results of my research did not indicate significantly different higher or lower GAC scores among White children when compared to their Black and Hispanic counterparts.

Empirical Implications

My research has added to the limited scientific knowledge on the issue of adaptive behavior among young DD children. By looking at this issue through the lenses of ethnicity and placement prior to testing, I uniquely address an under researched area in

childhood disorders. By expanding the knowledge in this discipline, understanding those differences found from this study may serve as a catalyst to advance the importance of public preschool programs taught by highly qualified and trained educators in the entirety of professional practice related to the DD population. For example, when conducting observations, screening, evaluations, and reviewing referrals from physicians, mental health providers, daycare professionals, teachers, parents, primary caregivers, and guardians of the referred child, one may be more mindful of the impact of adaptive behavior functioning. In addition, considering a family's unique beliefs based on adaptive behavior functioning and understanding a child's social learning development can also provide some valuable data when addressing discovered weaknesses based on evaluation results. Having more precise adaptive behavior data on DD referrals may help with providing feedback, goal work, and interventions for parents, daycare providers, and teachers regardless of whether the child has a legally binding IEP plan secondary to meeting the eligibility criteria as DD.

Implications for Positive Social Change

The data indicates the overall differences between children eligible for DD and those not eligible and between children attending a public preschool program and those being cared for at home prior to the completion of a DD evaluation. My findings confirmed and highlighted the distinctions of DD adaptive behavior symptomatology across different placement settings. No differences in GAC standard scores across three different ethnicities were found. Further studies reviewing more specific aspects of adaptive behavior may provide significant differences. For example, when reviewing the

empirical literature in regard to ODD, LD, and TBI, there were no significant differences in global adaptive behavior scores; however, noted weaknesses were identified on subtest scores (Clark, Prior, & Kinsella, 2002; Ditterline et al., 2008; Ganesalingam et al., 2011; Harrison & Oakland, 2008; Sparrow & Cicchetti, 1987; Viezel et al., 2014).

My findings may serve to advance and promote public awareness among parents, daycare providers, educators, healthcare providers and society at large. Consequently, this increased awareness could lead to improvements in screening, intervention practices, preliminary data collection, IEP adaptive behavior goals, and overall social learning teaching practices for children coming from an array of ethnicities and placement settings notwithstanding if the child meets eligibility as DD. **S**pecifically, daycare and home-based programs could create an environment ripe with opportunities to assist in early adaptive behavior intervention.

Education about childhood adaptive behavior developmental milestones should be considered at the pediatric level. For instance, workshops, training, and forums could be created to educate health care providers, parents, special education teachers, and general education teachers on the adaptive behavior developmental milestones, importance of social learning, and the necessity to provide modeling and skill practice opportunities. Such meetings would solicit discussions of an individual's unique beliefs and perceptions about adaptive behavior while emphasizing the value of accurate and early detection of deficits. Ultimately, knowledge from this study could produce more accurate developmental screenings, which would include adaptive behavior and early

identification of DD symptomatology. This would benefit the child's family, the child's learning environment, and society at whole by creating positive social change.

Conclusions

Within the literature associated with young children, there is an abundance of empirical data addressing adaptive behavior in the context of understanding children with an ID (Papazoglou, Jacobson, McCabe, Kaufmann, & Zabel, 2014), TBI (Ganesalingam et al., 2011), FAS (Motz et al., 2012), and AU (Lopata et al., 2012). Therefore, my purpose for this study was driven by the limited scholarly findings addressing adaptive behavior in young, DD children.

Through the use of a quantitative approach, I investigated whether there are differences between the independent variables: eligibility status (DD eligible and noneligible children), ethnicity (Black, White, and Hispanic), and placement setting prior to testing (home, daycare, and public school) and the dependent variable dependent variable, namely, GAC standard scores on the ABAS-II Parent/Caregiver Form among children referred for a psychoeducational evaluation to rule out the presence of DD. The framework of legal mandates and Bandura's social learning theory served as this study's theoretical foundation.

Using one-way ANOVA, there was a significant difference between DD eligible and noneligible children on the ABAS-II Parent/Primary Caregiver Form GAC standard score**,** with children eligible for DD services having a significantly lower score than noneligible children. Any delays in adaptive behavior milestones were not considered problematic for any specific ethnic group.

There were no significant differences on the ABAS-II Parent/Primary Caregiver Form GAC domain standard score across the three different ethnicities being studied. There was a significant difference between public school and home prior placement settings on the ABAS-II Parent/Primary Caregiver Form GAC standard score but not between public school and daycare or home and daycare prior placement settings.

I advanced the need for further studies to examine the specific domain factors and individual subtest factors that may contribute to these differences. For example, researchers who have studied adaptive skills in autism and ID children find, along with differences in global scores, distinct patterns of domain and subtest strengths and weaknesses (Bloom & Zelko, 1994; Ditterline et al., 2008; Ditterline & Oakland, 2009; Harrison & Oakland, 2008; Papazoglou et al., 2014; Sparrow et al., 2005). Through analysis, I identified a significant difference in GAC standard scores between DD eligible and nonDD eligible children, further studies addressing significant strengths and weakness in specific areas of adaptive functioning among DD children would enhance the scholarly literature. Eligibility as DD requires that adaptive behavior assessment be conducted with data to help confirm eligibility and determine the presence of the disorder (Ditterline & Oakland, 2009). Conclusions determined from the data support this thought/idea. However, an expansion of the knowledge in increased understanding of the group's specific strengths and weaknesses would enrich understanding of the DD child, and improve the quality of intervention programs and IEP goals.

In terms of improving intervention programs, my findings indicated that there was a significant difference between public school and home with regard to prior placement

settings, with higher scores noted among children being served in a public school based, preschool program taught by a highly qualified teacher. Therefore, I helped to highlight the need for further studies to examine the adaptive behavior skills of DD children along with the impact such studies may have on early detection rates and intervention. Again, other researchers should look beyond the GAC standard score to those specific differences in domain and subtest areas that show the distinct advantages of being part of an early preschool setting and the areas of weakness for children at home.

Based on my comprehensive literature review, it was evident that there are gaps related to the DD population. Markedly, I specifically filled the gap in the literature by offering additional data and increased knowledge about differences in adaptive behavior among DD children. Through analysis of the data, I also showed that there were no differences in parent perceptions in adaptive behavior across different cultures and that school based preschool settings appeared to have an impact on the development of global adaptive skills for young children, which serves to increase knowledge in the developmental psychology and educational disciplines.

In summation, I emphasized the need for increasing professional and public awareness regarding early identification of DD children across all groups; mandating and financially supporting competent care by highly trained individuals; expanding understanding of the importance of adaptive behavior development among children with DD; and educating parents, educators, and medical providers about the role of social learning on development and mastery of functional life skills for all young children. In the effort to effect positive social change, I hope I have broadened an understanding of

what it means to be a DD child in terms of measurable, identifiable, and verifiable characteristics, as well as impassioned other scholar-practitioners' desire to research and learn more about such children.

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Appendix A: Permission Letter

Psychological and School Services
of Eastern Carolina, PLLC

Parliament Place, Suite 7
300 East Arlington Boulevard
Greenville, NC, 27858

phone: 252.227.3247
fax: 252.321.8740
mypsychologist@hotmail.com

www.passec.com

August 17, 2016

Dear Kelly Moynahan,

Subject: Archival Data

Enclosed are Adaptive Behavior Assessment Scale, Second Edition scores from 335 children referred for psychological testing to rule out Developmental Delay. All identifying information has been removed and the data set has been placed in a spread sheet by an employee hired by Psychological and School Services of Eastern Carolina (PASSEC), PLLC. I give permission to use this data set for a dissertation conducted by the clinical psychology student, Kelly Moynahan. All other intentions are not approved without prior knowledge and consent.

The archival dates back to the 2006-2007 school year to 2015-2016 school year. The children were referred via Federal guidelines associated with Project Child Find (PCF). While referrals can be made by parents, medical doctors, daycare providers, preschool teachers, and other individuals associated with the child, ultimately, parents must provide consent for an evaluation. The main goal of PCF is locating and identify toddlers who may have a disability and or may be in need of exceptional children services. The public school system is responsible for assessing children once they turn 2 years 10 months. Prior to that time, a local public agency, Childrens Developmental Services Agency (CDSA), conducts the evaluation and they too can make a referral to the school system. For all subject's, the referral process followed North Carolina Department of Public Instruction's procedures and policies for evaluation. Initial referral and permission to evaluate forms are attached for your review.

Please feel free to contact me if you have any questions or need further information.

Regards,

Kelly C. Moynahan

Kelly C. Moynahan, MA, CAS, LPA, HSP-PA
Owner, PASSEC, PLLC
School Psychologist II
Licensed Psychological Associate
Health Service Provider – Psychological Associate

Attch: spread sheet data for subjects, NCDPI referral and permission forms

Appendix B: Data Use Agreement Form

DATA USE AGREEMENT

This Date Use Agreement ("Agreement"), effective 08/17/16 ("Effective Date"). Is entered into by and between Kelly C. Moynahan, Ph.D. Candidate ("Data Recipient") and Psychological and School Services of Eastern Carolina, PLLC ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research in accord with laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program. In the case of a discrepancy among the laws, the Agreement shall follow whichever law is stricter.

1. Definitions. Due to the study's affiliation with Laureate, a USA-based company, unless otherwise specified in the Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purpose of the USA "HIPPA Regulations" and/or "FERPA Regulations" codified in the United States Code of Federal Regulations as amended from time to time.
2. Data Field in the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with the applicable laws and regulations of the governing bodies associated with the Data Provider, Data Recipient, and Data Recipient's educational program.
3. Data Fields in the LDS. No direction identifiers such as names may be included in the LDS. In preparing the LDS, Data Provider shall include all data fields specified as follows, which are the minimum necessary to accomplish the research: List all data points that site will be providing.
    a. DOT, age, sex, race, school/home/daycare placement, and if IEP Team found if the child as eligible for receiving services as Developmental Delayed (DD).
    b. Scores of the following measures: Adaptive Behavior Assessment Scales, Second Edition (parent and daycare/teacher if child was in a daycare or school setting).
    c. All children were special education referrals with a request for DD assessment in a rural North Carolina County.
4. Responsibilities of Data Recipient. Data Recipient agrees to:
    a. Use or disclose the LDS only as permitted by this Agreement or as required by law;
    b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;
    c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;
    d. Require any of the its subcontractors or agents that receive or have access to the LDS to agree to same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and
    e. Not use the information in the LDS to identify or contact the individuals who are data subjects.
5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose the LDS **for its Research activities only.**
6. Terms and Termination.

a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for as long as Data Recipient retains the LDS; unless sooner terminated as set forth in this Agreement.

b. Termination by Data Recipient. Data Recipient may terminate this Agreement at any time by notifying Data Provider and returning or destroying the LDS.

c. Termination by Data Provider. Data Provider may terminate this Agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

d. For Breach. Data Provider shall provide written notice to the Data Recipient within ten (10) days of any termination that the Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

e. Effect of Termination. Section 1. 4. 5. 6(e), and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with the changes in federal law that materially alter either or both parties' obligations under this Agreement. Provider however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

b. Construction of Term. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance the HIPPA Regulations.

c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their representative successors or assigns, any rights, remedies, obligation, or liabilities whatsoever.

d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing, or reinforcing any of the provisions in this Agreement.

IN WITNESS WHEROF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER

Date: 09/7/17
Signed: Pamela Batts
Name: Pamela Batts, MA
Title: PASSEC Committee Chair,
Educational Coordinator, Counselor and Diagnostician

DATA RECIPIENT

Date: 09/7/17
Signed: Kelly C. Moynahan
Kelly Moynahan, MA, CAS, LPA