A CAUSAL COMPARATIVE STUDY OF THE DIFFERENCE IN PERCENTAGE OF AT-RISK CHILDREN SERVED IN NEW HAMPSHIRE CHILDCARE FACILITIES BASED ON FACILITY TYPE

by

Danielle Higuera

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education

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ABSTRACT

The purpose of this causal-comparative study was to determine whether there is a difference in the type of childcare center that at-risk children attend. Scholars have noted the importance and long-term benefits of providing quality early childhood education for at-risk children, but limited research has been conducted on where at-risk children attend childcare. A random sampling method was used to recruit programs from the 689 New Hampshire childcare centers for this study. A questionnaire was administered to determine the percentage of at-risk children that attend each of the five childcare program types: license-exempt, licensed center, licensed family provider, licensed-plus, and accredited. A one-way analysis of variance (ANOVA) statistical analysis was conducted, Shapiro-Wilks test was used to test the assumptions of normality, the Levene test evaluated the assumption of equal variance, and a box-and-whisker plot identified extreme outliers. Results from this study show that there is not a statistically significant difference in the percentage of at-risk children attending different childcare program types. However, findings indicated there was a difference in the type of childcare facility that accepted at-risk children, with licensed and license-exempt facilities tending to be more popular among families of at-risk children. This study highlighted the need to allocate resources equitably among different childcare programs so that at-risk children can benefit.

Keywords: childcare, at-risk children, quality, early childhood education

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Department of Health and Human Services (DHHS)

National Association for the Education of Young Children (NAEYC)

National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative, causal-comparative study was to determine whether there is a difference in the type of childcare center that at-risk children attend. In Chapter One, the researcher discusses the background of the important role quality childcare programs have in assisting at-risk children with school readiness. An introduction to the theoretical framework that guided this study follows the background. Further, the potential significance of this study and its findings for at-risk children and the centers they attend is considered. Finally, the chapter ends with the study's research questions and definitions.

Background

Children living below the poverty line cost the United States approximately $1.0298 trillion annually (McLaughlin & Rank, 2018). These children are at-risk for poor nutrition or malnourishment, reduced health, impaired cognitive functions, lack of school readiness, and compromised growth and development (Enns, 2019). Previous findings have shown that quality early childhood education in licensed childcare centers can assist children living in poverty learn the skills crucial for academic and lifelong success (Morrissey & Vinopal, 2018). Morrissey and Vinopal (2018) discovered that at-risk children attending licensed childcare centers test higher in math and reading than other at-risk children who did not attend a licensed childcare. Historically, at-risk children enter school 1 year behind their peers and continue to struggle and fall further behind each school year (Sabol et al., 2018). Many children who experience poverty throughout their childhood do not have access to quality education; as a result, they enter the job market with lower qualifications and skillsets (McLaughlin & Rank, 2018). Quality childcare centers are instrumental in reducing the achievement gap for at-risk children living in poverty. Children need assistance developing

cognitive, emotional, and executive functioning skills (Blankson et al., 2017). According to Pavlakis et al. (2015), quality preschool programs assist with providing additional support to families living in poverty. Early intervention in quality preschool programs has been shown to help offset the effects of stress that poverty has on young children's development.

There is evidence that at-risk children benefit from attending a high-quality early learning program (Morgan, 2019). Goble et al. (2016) found that the teacher and child interactions used in high-quality preschools assisted children to develop greater academic and social skills. Further, children who do not have previous early childhood program experiences entering kindergarten struggling with making friends, self-regulation, and pretend play (Hollingsworth & Winter, 2013). Generally, the children who attend early learning programs enter kindergarten with these social-emotional skills mastered. Due to the documented importance of at-risk children attending quality, licensed early learning programs, it is crucial to determine where at-risk children attend preschool and early learning programs.

Historical Overview

In the later part of the 19th century, the *day nursery movement* began to watch groups of low-income children while their parents worked (Cohen, 1996). Philanthropic businesses, individuals, or community service organizations ran these day nurseries for small parental fees and community and philanthropic contributions. In the early 20th century, another movement began that provided education to middle- and upper-class children, funded primarily by parents (Cohen, 1996). This nursery school movement focused on assisting in children's physical, social, and emotional development. These two movements had differing goals and served separate populations.

When the demand for a larger women labor force increased due to World War II, the Lanham Act was passed to fund early childhood centers regardless of the family's income (Cohen, 1996). Educational agencies ran these early childhood centers and focused on the education and development of the children in attendance. Following the war, a large majority of the funded ceased, many middle- and upper-class mothers left the workforce, and many early childhood centers closed. Despite the closure of these childcare sites, the need for childcare—especially for low-income and middle-income children—continued.

Children comprise the largest group of people living in poverty (Simpson et al., 2018). Almost 25 percent of children in the United States live in neighborhoods with high levels of poverty (Kim et al., 2019). Crucial cognitive brain development occurs in a child's first 5 years (Immordino-Yang et al., 2018), and proper nutrition is necessary for both cognitive advancement and physical growth. Rossin-Slater (2015) found that children who had low birth weight, caused by food insecurity in pregnant mothers, had decreased English and math scores. Programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) were created to provide necessary nutrition for pregnant women and children (Jackson, 2015).

Children need to have their basic needs met before learning and academic success can be achieved (Baker et al., 2017). According to Harper et al. (2003), at-risk children are children in crisis who struggle to have their basic needs such as food, shelter, and safety met on a consistent basis. Maslow's hierarchy of basic needs dictates that children need their physiological needs met before they can advance to their highest potential (Harper et al., 2003). To attempt to meet this need, Head Start programs were established as part of President Johnson's war on poverty through the Economic Opportunity Act (Phillips et al.,

2018). This need continued to grow, and Phillips et al. (2018) found that Head Start enrollments nearly doubled between 1990 and 2012. Today, the demand for access to publicly funded childcare remains high. Many families rely on the Child Care and Development Block Grant (CCDBG) to afford childcare and sustain employment (Phillips et al., 2018).

Society-at-Large

Rossin-Slater (2015) cited that healthy children can contribute to the U.S. economy more than children who struggle with their health and nutrition. A child's neighborhood can influence their academic health and can cause depression, delinquency, and substance abuse (Kim et al., 2019). Without access to proper resources, at-risk children have an increased chance of unemployment later in life (Rossin-Slater, 2015). Research has shown that children from lower socio-economic backgrounds have cognitive delays that can negatively impact their academic success as well as their lifelong success (Pavlakis et al., 2015). The proper development of these skills reduces school drop-out rates, decreases drug and alcohol use, and prevents academic problems (Blankson et al., 2017).

By kindergarten, children who suffer from food insecurity struggle with the social-emotional and cognitive abilities that other children their age have acquired (Johnson & Markowitz, 2018). Behavioral and self-regulatory issues are also commonly present in at-risk children. Approximately 10 percent of children under the age of 5 years internalize or externalize their behavioral problems (Kim et al., 2019). Living in poverty before the age of 5 years is associated with struggles in literacy and low academic performance. Medical research has been conducted to determine the extent to which poverty-related stress impacts the brain. Stress has been shown to negatively affect the portions of the brain that are crucial to language, memory, and behavior in children as young as 1 year old. Children who live in

poverty are less likely than their peers to have developed the language skills that are crucial for academic success. In Rossin-Slater's (2015) research, the author connected early intervention for children to their lifelong success in society. McLaughlin and Rank (2018) estimated that the United States would save seven dollars for every dollar spent combating childhood poverty. By determining the type of childcare program that the majority of at-risk children attend, resources can be allocated to ensure that at-risk children have the supports that they need to be successful.

Theoretical Background

Two prominent theories, Maslow's hierarchy of basic needs and Bandura's social cognitive learning theory, guided this study. According to Maslow's hierarchy of basic needs, children must have their basic needs met before they can grow and develop to their highest potential (Harper et al., 2003). Maslow's theory states that a person's primary concern and focus includes physiological needs of survival. After the person's survival needs and safety concerns are addressed, the person can begin to develop a capacity for love and belonging with a family unit. After love and belonging are cultivated, a person's self-esteem develops into a desire to learn and reach their maximum potential. According to Maslow, a person is unable to skip any of these steps. In the context of education, this theory indicates that children must feel safe, secure, and loved before effective teaching can occur (Harper et al., 2003).

According to Schunk (2016), Bandura's social cognitive learning theory works off the assumption that the environment, behavior, and person all affect how children learn. The foundation of this theory is that these three key factors work interchangeably to influence how a person behaves and learns. Children learn best when they are self-motivated to accomplish a goal. The group-learning environment in early learning centers allows children

the opportunity to achieve their personal learning goals by learning from peer models. They can see their peers work towards a goal and accomplish it, which boosts their own self-efficacy, or the belief that they can master the same task or learning objective. According to Reivich (2010), when children succeed or learn a function and can attribute their success to their efforts, their self-efficacy and sense of control over their environment increase. Feelings of power and efficacy create happier and more resilient people.

Problem Statement

The problem underlying this study is that there is a lack of research on in which type of childcare programs a majority of children who live in poverty attend. Quality childcare programs require much funding and resources. Pianta et al. (2016) found that a quality childcare program includes teachers with adequate qualifications; classroom environments that include childcare equipment, climbing structures, playground toys, and supplies; and meaningful teacher-child interactions. Other scholars have identified that professional development is crucial in ensuring that teachers understand how to provide a quality classroom environment and sensitive teacher and student interactions. Children need to develop a relationship with their teachers before learning can occur (Koca, 2016). A teacher's relationship with the children in their class affects classroom interactions and positively promotes children's emotional and academic outcomes (Lippard et al., 2018). Intentional play-based learning interactions need to occur to help offset the effects of stress that poverty has on young children's development (Pavlakis et al., 2015). No research has been conducted to determine where the majority of children living in poverty attend childcare.

The children living in poverty need additional resources to ensure that they are provided with the proper tools for success. The U.S. Census Bureau has categorized more than 28,000 children who live in New Hampshire as living below the poverty threshold (U.S.

Census Bureau, 2016). This number equates to 11 percent of the population making less than $24,339 for a family of two adults and two children. Children living in poverty are considered at-risk and are more likely to have lower grades and academic attainment, exhibit poor cognitive and social development, score lower on standardized tests, and have higher instances of behavioral and emotional problems (Pollak & Wolfe, 2020).

There is evidence that quality childcare centers can assist children in their social-emotional development and resilience; however, many children living in poverty either do not have access to early learning programs or do not have access to quality programs (Simpson et al., 2018). Quality centers that focus on assisting at-risk children in school readiness and life-long success need to have readily available resources and the ability offer accessible, affordable childcare for all at-risk children (Pavlakis et al., 2015). Phillips et al. (2018) found that the number of for-profit centers that serve at-risk children rose from 1990 to 2012; however, nonprofit centers still served the majority of at-risk children. The cost of childcare programs and other lack of resources deter many families living in poverty from enrolling their children in quality early childhood programs (Chaudry et al., 2017). The problem that inspired this study is that the literature has not fully addressed how to properly allocate funds to at-risk children and the schools that support them. There was, therefore, a need to determine the type of childcare center that the majority of at-risk children attend.

Purpose Statement

The purpose of this quantitative, causal-comparative study was to determine whether there is a difference in the type of childcare center that at-risk children attend. The independent variable in this study was the type of childcare center and the dependent variable was the percentage of at-risk children attending the different types of childcare programs. The different types of childcare programs used in this correlation study included the

following: license-exempt providers, licensed center programs, licensed family providers, licensed-plus programs, and accredited programs (Pond, 2017). For purposes of this study, license-exempt recreation programs were excluded because they do not provide care for children under 6 years of age (Pond, 2017). License-exempt providers are registered with the State of New Hampshire and may receive state scholarship funds; however, they are not licensed or required to follow DHHS's Child Care Licensing regulations (Pond, 2017). Because the children who receive state scholarship funds are considered at-risk children, license-exempt providers were included in this study. Licensed childcare centers are licensed and regulated by DHHS's Child Care Licensing Unit and provide care in a childcare setting (Pond, 2017). Licensed family providers are licensed and regulated by DHHS's Child Care Licensing Unit and provide care in a family home setting with a family provider (Pond, 2017). Licensed-plus centers are childcare programs who adhere to regulations and quality practices that are above the minimum licensing regulations (Pond, 2017). NAEYC-accredited centers are governed by Child Care Licensing, as well as an independent agency that ensures that the program delivers high-quality, developmentally-appropriate services (Pond, 2017).

According to the Child Care Aware of New Hampshire, childcare centers consist of centers, group childcare, preschool programs, infant and toddler programs, night care, and school-age programs (Pond, 2017). Family providers are childcare programs that are governed by the State of New Hampshire's Child Care Licensing Unit and operate as a small, usually mixed-age group of children in the provider's residence (Pond, 2017). Family providers operate family childcare, family group childcare, and after-school programs in the provider's primary residence (Pond, 2017). Licensed centers are governed by the State of New Hampshire Child Care Licensing Unit and operate in dedicated buildings for childcare

(Pond, 2017). Further, each group can be classified as nonprofit or for-profit (Pond, 2017). Nonprofit centers are run by a board of directors, whereas for-profit centers are run by the company's owners and shareholders. This study was distributed to several childcare programs throughout the State of New Hampshire that included a variety of childcare settings and tax statuses.

Significance of the Study

While much research has been conducted on the importance of quality education (Simpson et al., 2018) and the long-term benefits of providing a quality education to at-risk children (Rossin-Slater, 2015), the findings of this study added valuable knowledge on where at-risk children in New Hampshire are attending. Legislatures and politicians are starting to realize the benefits of providing at-risk children with a quality education. The public school system continues to struggle to increase academic success among its at-risk students, and legislatures are turning to childcare centers as a possible solution (Ansari & Pianta, 2018).

Simpson et al. (2018) found that many at-risk children still do not have access to quality childcare programs. Through this study, the researcher aimed to determine where the majority of at-risk children attend so educators and legislatures can ensure that the program has the resources needed to ensure the program delivers quality. Based on the theoretical framework of Maslow's hierarchy of needs, at-risk children need an environment that meets their physiological and safety needs as well as their need to love, belonging, and self-esteem (Harper et al., 2003). Quality childcare programs need the funds and resources to meet Maslow's hierarchy of needs and create an environment that enables children to achieve their personal learning goals, develop self-efficacy, and learn from positive peer models using Bandura's social cognitive learning theory (Schunk, 2016).

Quality programs can be measured using rating scales such as the Infant/Toddler Environment Rating Scale (ITERS) and the Early Childhood Environment Rating Scale (ECERS; Barros & Leal, 2015). These rating scales assess classroom environments' alignment with both Maslow's hierarchy of needs and Bandura's social cognitive learning theory by rating classroom layout, adequate resources available, and teacher-child interactions. The State of New Hampshire has quality rating systems in place to recognize childcare centers that focus on quality classroom environments and teacher to child interactions (Pond, 2017).

Building on the studies of Phillips et al. (2018) and Sullivan et al. (2018), who compared childcare type to quality for at-risk children, this study aimed to identify the type of centers that are serving the State of New Hampshire's at-risk population. The results of this research can be used as a baseline for other states to determine what type of facility a majority of their at-risk children are attending.

Research Question

RQ1: Is there a difference in the percentage of at-risk children served at the five classifications of New Hampshire childcare facilities (i.e., licensed center, licensed family provider, license-exempt, licensed-plus, accredited)?

Definitions

1. *Accredited centers* – An accredited center is a licensed, home- or center-based childcare program that has been evaluated through self-studies and outside agencies to ensure compliance with quality standards of childcare (Pond, 2017).
2. *At-risk children* – At-risk children are those who live at or below the poverty line and struggle to have their basic needs such as food, shelter, and safety met on a consistent

basis (Harper et al., 2003). For the purposes of this study, at-risk children were defined as those children who receive New Hampshire state scholarship funds.

3. *Childcare center* – A childcare center is synonymous with an early learning program that is licensed with the State of New Hampshire Department of Health and Human Services and provides care and education to children from ages 6 weeks to 12 years old (Pond, 2017).
4. *Child Care and Development Block Grant (CCDBG)* – The CCDBG allows for the use of public funds to assist families living in poverty secure childcare by paying a portion of their tuition (Phillips et al., 2018).
5. *Early Childhood Environment Rating Scale (ECERS*) – This is a rating scale that measures the standard of quality of a preschool classroom environment along with teacher-child interactions (Barros & Leal, 2015).
6. *Family provider childcare* – This is a licensed childcare program that operates in the caregiver's residence (Pond, 2017).
7. *Family group childcare home* – This is a licensed childcare program that operates in the primary caregiver's residence and employees an additional childcare worker (Pond, 2017).
8. *Group childcare* – This is a small, center-based, licensed program that provides care for up to four children under age 3 years, up to five school-age children, and more than one child between the ages of 3 and 6 years (Pond, 2017).
9. *Infant and toddler program* – This is a licensed, center-based, childcare program that cares for more than five children under 3 years old (Pond, 2017).

10. *Infant and Toddler Environment Rating Scale (ITERS)* – Experts have widely regarded this rating scale as the standard of quality measurements of a classroom environment and teacher-child interactions (Barros & Leal, 2015).
11. *Licensed center* – This describes a childcare program that is licensed and regulated through the Department of Health and Human Services (DHHS) Child Care Licensing Unit and provides care for children from 6 weeks old to up to 12 years old for school-age children before and after school and school vacations (Pond, 2017).
12. *License-exempt* – This describes a childcare provider that is not required to be licensed and regulated through the Department of Health and Human Services (DHHS) Child Care Licensing Unit due to requesting and qualifying for an exemption (Pond, 2017). For the purposes of this study, license-exempt providers are defined as those that have registered with the State of New Hampshire and accept state scholarship funds.
13. *Licensed-plus* – This is a New Hampshire quality rating awarded to licensed, center-based childcare programs who focus on providing quality care for children and implementing quality educational practices above licensing requirements (Pond, 2017).
14. *National Association for the Education of Young Children (NAEYC)* – The NAEYC awards licensed, center-based, childcare programs accreditation for complying with quality childcare practices (Pond, 2017).
15. *Night care* – This is a licensed program that cares for children between the hours of 7:00 PM and 6:00 AM (Pond, 2017).

16. *Preschool program* – This describes a licensed, center-based, childcare program that provides care and curriculum to children between the ages of 3 and 5 years old and not attending a full-day program at school (Pond, 2017).
17. *Quality* – These programs have documented policies and procedures regarding immunizations, group size, child to teacher ratios, teacher qualifications, team member training, positive discipline, and abuse and neglect prevention (Pond, 2017).
18. *School-age program* – This is a licensed program that cares for children who are registered and attend school during times the school is not in session (Pond, 2017).

CHAPTER TWO: LITERATURE REVIEW

Overview

Previous research findings in the related body of literature have shown the effects that poverty has on a child's development, academic success, and long-term achievement potential. Quality childcare centers have shown success in mitigating the effects of poverty for at-risk children. Further research is needed on the funds and resources needed for childcare programs to provide quality environments that can assist children in bridging the achievement gap. Knowledge about the types of childcare programs that at-risk children attend can help policymakers divert resources more efficiently, providing more at-risk children with access to quality educations.

Theoretical Framework

Two theories served as the basis for this study: Maslow's hierarchy of needs and Bandura's social cognitive learning theory. Children must have their basic needs met before they are able to focus on learning. After those needs are met and the child feels safe, positive influences from peers allow children to grow and develop beyond what they could on their own.

In 1943, Maslow introduced the hierarchy of needs model, which posits that humans share five basic needs (Noltemeyer et al., 2020). The five needs were arranged in order of importance, with the bottom being the most important; however, Maslow argued that meeting all needs is crucial to human development and optimization. Maslow organized the five needs into two categories: deficiency needs and growth needs. This theory suggests that children need their deficiency needs met before they can grow (Noltemeyer et al., 2020). A child's deficiency needs consist of their physiological, safety, and love needs. When children suffer from food insecurity, their focus shifts from learning to meeting their basic needs for

survival (Huang & Vaughn, 2015). This shift in focus increases the burden on the national Gross Domestic Product (GDP) and increases unemployment (McLaughlin & Rank, 2018). As children age, they begin to think that they do not need to learn because they are going to get a job and will not need to use this information. In reality, however, they will struggle as adults with obtaining and maintaining employment and may become dependent on the government to provide for their basic needs. Without meaningful work, when at-risk children age and have children, the chances that their children will also suffer from food insecurity increase, thus creating a vicious cycle (McLaughlin & Rank, 2018).

Meeting Maslow's hierarchy of needs allows a person to develop intrinsic motivation to learn not dictated by the need to find food. Children who do not have to worry about when they are going to eat will have better academic success and cognitive development. Children who are not battling flight-or-fight survival mode due to a lack of safety can focus on learning and growing. These skills allow children to make more meaningful, lasting contributions to society. Educators understand the importance of providing children with the tools that they need to succeed in life. Poverty is a motivator that directly works against everything that educators strive to accomplish.

When a child struggles with food insecurity, they often become irritable and short-tempered due to the constant, nagging pain in their stomach. Such students are distant and distracted in class. Seligman and Berkowitz (2019) found that food insecurity causes a lack of motivation and immediate, short-term behavioral problems. These short-term behaviors affect a child's motivation and ability to learn, which could have long-term effects on their educational success and life outcomes. These authors also discovered that these effects are not permanent and are solved when a child no longer faces food insecurity. If it is determined

where at-risk children attend childcare, organizations and resources can better allocate food resources to meet children's physiological needs. Fisher and Crawford (2020) found to combat poverty using Maslow's hierarchy of needs theory, attention also needs to be given to teacher's deficiency needs. Many teachers also struggle with receiving subsistence, security, and association needs. Educators face professional demands and struggle with work and life balance, which threatens their physiological and safety needs (Keegan, 2019). Until teachers have these needs met, self-actualization is not possible; therefore, they will struggle with connecting and meeting the needs of their students.

Bandura's social cognitive learning theory works off the assumption that the environment, behavior, and person all affect how an individual learns (Schunk, 2016). The foundation of this theory is that these three key factors work interchangeably to influence how a person behaves and learns. People learn best when they are self-motivated to accomplish a goal. The group-learning environment in preschool allows children the opportunity to be able to achieve their personal learning goals by learning from peer models. They can see their peers work towards a goal and accomplish it, boosting their self-efficacy. They believe that they can master the same task or learning objective. According to Reivich (2010), when children succeed or learn a function and can attribute their success to their efforts, their self-efficacy builds, and they can feel more in control of their environment. The more power and efficacy a person feels, the happier and more resilient they become.

Yildirim et al. (2020) found that children's social skills and cognitive capacity complete development by 6 years old. They also observed that children learn expectations and behaviors by observing older peers' actions and consequences. Ward et al. (2017) reported similar findings when researching whether peer pressure affects child's eating and

physical activity. They found that children's dietary and exercise habits varied greatly at the beginning of the study; however, after 9 months, most children's dietary and exercise habits changed to become closer to the baseline. These signifies the effect of peer pressure and how children were more inclined to try new foods and forms of exercise after seeing their peers doing it and being offered the same choice. Seitz et al. (2020) used Bandura's social cognitive theory to find whether books read to preschool students influence children's gender stereotypes. If stories only portray one gender a certain way, then children will develop the belief that the action or trait only applies to that gender. Providing gender-neutral books and stories allowed children to develop a more inclusive belief system. Seitz et al. found that when children were presented with an unknown toy that was labeled for the opposite gender, they would not want to play with it, even if it was originally appealing. They further found that when a known gendered toy was marketed for the opposite gender, it was still not desirable for the marketed gender. Children learn through society and from each other what is accepted in society, including gender stereotypes and social norms.

Choi et al. (2020) investigated whether different environments, including home, childcare, or neighborhood care, could predict problematic behaviors in toddlers. They found that while home care and childcare could both contribute to problematic behaviors, children living in poverty were more likely to develop problematic behaviors regardless of environment. Efficacious middle-class families had more access to quality childcare and therefore fewer problematic behaviors in their toddlers.

Related Literature

Children under the age of 3 years are the most significant people group in America living below the federal poverty line (Koball & Jiang, 2018). McCarty (2016) discovered that poverty disproportionately affects minority groups and immigrants. The financial burden

associated with specific demographics such as having a single-parent household or living in a rural area increase the number of families living below the federal poverty line. The effects that poverty has on children are substantial. Families living in poverty struggle to provide for their children's basic needs. Children need to have their basic needs met before they can begin to develop and achieve their full potential. Poverty causes stress on both parents and children, which affects children's development. Communities can come together to help combat the effects of poverty. Programs such as Head Start; Maternal, Infant, and Early Childhood Home Visiting Program (MEICHV); affordable housing; Families and Schools Together (FAST); and others are coming together to help reduce the long-term adverse effects poverty has on families and children. Knowing where at-risk children attend childcare allows the community, legislatures, and organizations to focus their efforts and resources.

Quality Childcare Combats Effects of Poverty

Many legislative and public officials have increased their attention to the benefits of early childhood education, particularly in the benefits a quality program has for children living in poverty (Egert et al., 2018). Because the first years of a child's life determine their lifelong success, the quality of the early learning environment that caregivers expose a child to is crucial. A quality early learning environment ensures that the classroom provides developmentally appropriate curriculum and resources, teachers continue professional development and research on quality practices and methods, and educators offer children the ability to learn and develop at their rate while supported and encouraged to succeed. The tools needed to provide a quality early learning environment require funding and resources. There is limited research showing the amount of funding needed to provide the proper, developmentally appropriate resources and environment for a quality childcare classroom.

A child's environment significantly impacts their learning. (Scott-Little et al., 2003). Scott-Little et al. found that program standards help ensure that a child has a safe environment that provides proper oversight, supervision, and curriculum. They found that there is a recent push to incorporate early learning standards into early learning environments to ensure that children are meeting growth and development expectations. The difficulty with employing early learning standards that track a child's growth and development comes when children learn and develop at different paces. Every child is unique, and measuring a child's development and progress in one area may not accurately represent the child's abilities or the effectiveness of the environment.

The goal of early learning standards is to create an environment that assists a child's success no matter their socioeconomic status. Early childhood environments promote school readiness and can reduce the achievement gap between at-risk children and their peers (Simpson et al., 2018). Early learning standards help define quality in the field of early childhood education. Simpson et al. found that a quality early childhood program is measured by their ability to meet early learning standards to reduce the achievement gap and adverse effects on children who live in poverty. Teachers and administrators have a responsibility to ensure that children who live in poverty have the tools and support they need to develop and grow to the same academic levels as their peers.

Developmentally appropriate curriculum and early learning standards work together to ensure that early learning programs provide children with the tools and resources to develop in all domains (NAEYC, 2002). Educators should assess children's progress and track their developmental milestones to determine whether the methods and strategies used by educators are properly assisting in the child's development. Each child is unique, and a

child's culture, background, and abilities need to be accounted for when an educator develops the curriculum and activities. Educators need to acknowledge that the early learning standards cover a range of developmental abilities, and not every child will accomplish the developmental milestone at the same time (Scott-Little et al., 2003).

Perceptions of Quality

The early childhood education environment is different than a traditional classroom environment. Teachers and children are often seen playing on the floor in groups at stations instead of sitting behind desks. To onlookers, this environment appears to be a daycare where adults provide oversight and care so parents can go to work (Allvin, 2017a). To combat this stereotype, many preschools have changed their name from *daycare* to *school*. To families and the community, however, the environment did not change or look like a traditional school, so the stereotype persists. In reality, this setting is neither daycare nor a school. Instead, Allvin (2017b) cited that childcare centers are early learning programs. This description removes the connotation that educators only provide oversight until parents can return and also does not establish the expectation that the environment should look like a traditional school setting.

Everyone has a different perception of a quality early childhood program. Regulations and quality standards significantly differ throughout the country (Pianta et al., 2016). Many states do not have adequate regulations in place to promote a quality learning environment. Inadequate and low-quality centers add to the negative connotation that childcare centers are daycares, and educators are entry-level workers who provide a service to working families. Pianta et al. defined a quality environment as one that provides a low adult-to-child ratios, has a proven curriculum, establishes set daily structure and schedules, and creates meaningful

teacher-student interactions. Teachers should provide children instruction in a variety of settings: large group, small group, and one-on-one.

A quality early learning environment promotes social-emotional development, cognitive development, and self-help skills as students are allowed to make choices throughout their days. Teachers provide a loving environment that allows children to feel secure and encourages them to learn, grow, and develop (Cousins, 2017). Teachers should promote positive behaviors, social skills, and peer interactions, and be supportive of each child's individual needs (Pianta et al., 2016). Quality early learning programs hire degreed teachers and require yearly professional development hours; however, the low pay, long hours, and lack of professional respect among other educators makes finding qualified, quality teachers increasingly difficult.

Parents need to believe that the program they chose for their child provides a quality, learning environment that loves and cares for their children. Governing agencies may perceive quality based on the number of violations an early learning program receives each year. Teachers usually perceive quality based on their classroom environments and the level of administrative support. One measurement of quality that attempts to remove perception from the evaluation and focus on the classroom environment and teacher interactions is the Infant/Toddler Environment Rating Scale (ITERS) or Early Childhood Environment Rating Scale (ECERS; Manning et al., 2019). ITERS and ECERS rating tools require classrooms to be equipped with a variety of developmentally appropriate tools, equipment, and supplies. Providing these supplies and resources require significant financial investments into each classroom. Many childcare centers rely on donations and wish lists to attempt to supply the appropriate amounts and variety of resources. In a study by Bassok et al. (2018), the authors

reported that parents perceived quality differently than teachers. Parents care more about the relationship between a child and their teacher than the development of the child. Teachers perceive quality in early childhood as providing an environment that is safe, healthy, and developmentally appropriate.

Environmental rating scales provide an assessment of the classroom environment and teacher interactions during the curriculum and learning activities. Stakeholders often view quality solely on developmental outcomes and assessments of the children and their environment (Egert et al., 2018). Parents rate quality based on their assumptions of what the program they prefer is doing with their child (Bassok et al., 2018). Only a small percentage of parents visit their child's early learning program during learning activities. Instead, parents draw their conclusions on quality based on the limited exposure they see of the classroom environment, their feelings of the relationship their child has with the teacher, and their convenience. Convenience and peer or family recommendations heavily weigh into a parent's perception of quality in an early learning program. Many parents choose their child's early learning program based on location, program hours, and availability before quality and environmental rating scores. Early learning programs have licensing violations posted online and in every center; however, parents rarely ask or seek information on the quality of the program (Bassok et al., 2018).

Parents are crucial components of quality in an early learning environment (NAEYC, 2002). Parent communication and involvement in their child's education allows the child to feel supported, loved, and understood. The positive effects of parental involvement encourage the child to develop and learn. Teachers and administrators need to include parents in the classroom environment and curriculum decisions that affect their children. Parental

support and buy-in allow parents to work on the developmental milestones with their child at home, supporting their child's education in a way that complements the learning environment at school. Quality early learning programs partner with families in the care and education of the individual child.

Teacher Quality

With the increased focus on providing quality early learning programs for at-risk children, teachers and educators have access to additional research, methods, techniques, and resources. Professional development is crucial for teachers to be aware of the developmentally appropriate practices, classroom environments and settings, and tools and techniques for providing an individualized educational environment for each child (Egert et al., 2018). According to Egert et al., teachers benefit from in-service professional development. Generally, educators receive professional development hours through on-line webinars, workshops, and article reviews. In-service professional development and coaching allow teachers to see firsthand how to implement developmentally appropriate practices properly. Teachers can implement teaching strategies in the classroom and receive feedback and teaching strategies. Children benefit from this hands-on professional development, as their unique needs and challenges and considered when administrators make changes to the environment and curriculum.

Researchers have shown a positive correlation between the amount of professional development a teacher receives and their student's academic outcomes (Fonsén & Ukkonen-Mikkola, 2019). Experts need to conduct professional development for teachers to be effective. Professional development is not valid if proven research does not back up the strategies and suggestions. Teachers learn and grow as educators when professional

development consists of reflection, clear roles and expectations, and strategies for implementation.

Important Components of a Quality Program

A child's first 5 years are crucial for cognitive brain development (Immordino-Yang et al., 2018). Immordino-Yang et al. conducted valuable studies on the effects that food insecurity has on the brain's electrophysiological biomarkers. Stress was shown to negatively affect the portions of the brain that are crucial to language, memory, and behavior in children as young as 1 year of age. These authors found that the early intervention in a quality preschool program was able to help offset the effects of stress that poverty had on young children developmentally. Quality preschool programs were able to assist with providing the additional support to families who were distant and irritable due to the stress of food insecurity. Children were able to create the socio-emotional attachments necessary for healthy cognitive brain development. They found that in order for early intervention to be effective, teacher-child play-based learning interactions needed to occur. Educators were able to develop a strategy with parents that provided children living in poverty the best chance for long-term academic success.

Bigras et al. (2017) also conducted tests that support the need for early intervention. One experiment that they performed was the Wechsler Preschool and Primary Scale of Intelligence (WPPSI) test which tested a child's IQ, verbal skills, and mental processing capacity. This test is administered at two different times in a child's life: (a) when the child is between 2 years and 6 months old and 3 years and 11 months old; and (b) again when the child is between 4 years old and 7 years and 3 months old. These tests found that not one

single factor affected a child's performance, but rather a combination of factors including epigenetics, nutrition, care, environment, school, culture, and socioeconomics.

Community involvement is another key to reducing and reversing the long-term adverse effects of poverty on families and children. McCarty (2016) discovered that a family's participation in programs such as Head Start; Maternal, Infant, and Early Childhood Home Visiting Program (MEICHV); affordable housing; Families and Schools Together (FAST); and other local organizations can mitigate the effects of poverty. The WIC program is also instrumental in helping increase children's birth weight (Lakshmanan et al., 2019). This increase in birth weight, along with continued participating in the program, provides children with the proper nutrition to be successful in school and receive higher academic scores.

While a lack of food negatively impacts a student's academic performance, Nyaradi et al. (2018) discovered a link between nutrition and the quality of food and students' academic success. These scholars researched the effects that micronutrients and nutritional intake have on the neurocognitive development in children. Education enables one to obtain a better lifestyle, nutrition, jobs, healthcare access, housing, and socioeconomic status, while a lack affects a person's knowledge and cognitive development. This vicious cycle of cognitive delays and poor health and nutrition stops through participation in programs such as WIC (Jackson, 2015). Nyaradi et al. (2018) studied the learning success of children whose dietary intake consisted mostly of Western food such as red meats, soft drinks, fried foods, refined foods, and fast foods. These food categories are linked with significantly lower scores in mathematics, reading, and writing. Children who regularly consumed a Western food diet had a higher BMI than those children who consumed a diet high in micronutrient content,

such as fruit, yellow and red vegetables, and fish. High BMI is also linked to lower mathematical performance. Nyaradi et al. (2015) researched how changing the quality of food would impact their cognitive development. Increasing a child's intake of omega-3 fatty acids, vitamin B12, folic acid, choline, iron, iodine, and zinc as a whole benefited the child's cognitive development. These authors concluded that a high-quality diet full of fish, vegetables, and fruits provide the brain the nutrients that it needs for learning and memory; such a diet is also crucial for reducing the long-term effects of food insecurity.

The Legislative Focus on Quality Programs

Countries including the United States and England have attempted to combat poverty with quality early childhood education that focuses on kindergarten readiness and children's wellbeing (Simpson et al., 2018). Children comprise the largest group of people living in poverty, and researchers have shown that quality early childhood programs can assist children in their social-emotional development and resilience. Simpson et al. found that research on this population is limited because many children living in poverty either do not have access to early learning programs or do not have access to quality programs. For the benefit of a child's future and the continued prosperity of the country, it is crucial for childhood poverty to be eradicated. Even if that daunting feat can be accomplished, it is uncertain whether the long-term effects of the current population's poverty crisis can be reversed.

Shdaimah et al. (2018) noted that in recent years, politicians and legislatures have turned their attention to the field of early childhood education. This increased interest has created a heightened focus on workplace stress and regulations. Early childhood educators are already among the lowest paid professionals in the United States (Palley & Shdaimah,

2018). Many early childhood educators rely on government assistance and struggle to pay their rent, and academic advisors often encourage students to instead major in elementary education due to the higher pay and better benefits. These factors have led to high turnover and a rapid decline of new teachers entering the early childhood education field (Shdaimah et al., 2018).

Early childhood educators are instrumental in reducing the achievement gap for at-risk children living in poverty. Historically, these children enter school 1 year behind their peers and continue to fall further behind each year (Sabol et al., 2018). Early childhood educators help children develop cognitive, emotional, and executive functioning skills (Blankson et al., 2017). The proper development of these skills reduces school drop-out rates, decreases drug and alcohol use, and prevents academic problems.

Scholars have proven the benefits children receive from attending a high-quality early learning program (Morgan, 2019). These benefits are not limited based on socio-economic status (Fuller et al., 2017). All children who attend preschools regularly obtain higher academic achievement and enter school with higher school readiness than nonpreschool attendees (Reynolds et al., 2016). Goble et al. (2016) found that the teacher and child interactions found in high-quality preschools assisted children to develop greater academic and social skills. Further, many children entering kindergarten struggle with making friends, self-regulation, and pretend play (Hollingsworth & Winter, 2013). The children who attend early learning programs, however, are more likely to enter kindergarten with these skills mastered.

Legislatures and politicians are starting to realize these benefits. As the public-school system continues to struggle to increase academic success among students, legislatures are

turning to preschools as a possible solution (Ansari & Pianta, 2018). The future of the educational system greatly benefits by investment in quality preschool programs. There is a need for a universal definition of quality early childhood education (Ackerman, 2017). Teacher qualifications vary from state-to-state and center-to-center. The regulations and assessments of quality vary by state and assessor. Instructional best practices and high-quality standards are crucial in providing the proper public expectations of what a high-quality learning program is and what academic and social benefits they can expect to see in their child's future.

The Poverty Problem

Hannum et al. (2016) researched poverty and how it affects multiple aspects of a person's life including education. The World Health Organization has performed several cross-national surveys to examine the effects that poverty has in education around the world. The results of these surveys revealed that children in the United States considered below the national poverty level lacked critical tools needed for a proper education. One study attempted to focus on how a lack of educational resources affected reading, math, and science scores. The researchers acknowledged that the results may be slightly skewed based on the child's perception of the lack of resources as well as their ability to correctly interpret the meaning of the question. A correlation between the quality of answers and the socio-economic status of the respondent suggested that academic performance is affected by poverty. The researchers concluded that the effects of poverty on long-term development, behavior, and education of children are inconclusive. It is likely that there are too many variables that can alter accurate reporting.

An estimated 13 to 16 million children in the United States suffer from food security, with children under the age of 3 years making up the most significant people group in

America living below the federal poverty line (McCarty, 2016). The financial burden associated with specific demographics such as having a single-parent household or living in a rural area increases the number of families living below the poverty line. This burden causes unnecessary stress for both parents and children—which, in turn, affects children's socioemotional and cognitive development. The earlier in life a child faces food insecurity, the more severe are its lasting effects. Addressing food insecurity earlier allows a better chance for a child to develop the cognitive and socioemotional skills necessary to be successful in school. Early intervention is key to stopping and reversing the educational ramifications of food insecurity in children.

How Poverty Affects Motivation

Hunger is a powerful motivator. The nagging, dull pain is a constant reminder that a basic physical need is not met. The longer that this need remains unmet, the more persistent the body becomes in its reminders until they become a primary focus. A subconscious shift in motivation then occurs from learning to finding food. Maslow's hierarchy of needs theory supports the fact that when a person is deprived of a basic need, such as food, their focus shifts to meeting this need. The person is no longer interested in learning or reaching self-actualization, but instead is focused on survival (Schunk, 2016). This shift in focus increases the amount of stress a person feels. According to Pavlakis et al. (2015), stress has been shown to negatively affect the portions of the brain that are crucial to language, memory, and behavior in young children. These children are less likely to have the language skills that are crucial for academic success.

The Family Stress Model (FSM) links food insecurity to the stress it causes for the entire family (Johnson & Markowitz, 2018). Parents who are always worried about where

they are going to get their next meal and how they are going to provide for their family are more likely to be distracted, distant, short-tempered, and less sensitive the needs of others. The all-consuming focus of hunger causes irritability in children and parents, which further strains their relationship and distances parents and children from each other. This distancing creates a lack of collaboration necessary for social-emotional and cognitive development in young children. Many children who are experiencing food insecurity at home display behavioral and self-regulatory issues.

Poverty Defined

Dr. Boss's family stress model defines "family stress" as an event or item that causes pressure on the family unit (Boss et al., 2016). Not all family stress is detrimental to the family unit. Stress can either bind a family together or break it apart. Some amounts of family stress can cause families to thrive, while others cannot bear the strain and weight of the disturbance. Stress can be caused by both external factors and internal factors, with each affecting the family unit differently.

According to Harper et al. (2003), "children in crisis" describes children who struggle to have their basic needs such as food, shelter, and safety met on a consistent basis. These children are below the national poverty level and lack critical tools needed for academic achievement. People who do not have food readily available and worry about where their next meal will come from are considered "food insecure" (Gundersen & Ziliak, 2018). Food insecurity can differ from hunger; however, many times people who experience food insecurity also experience hunger. Studies have shown that between 13 and 16 million children in the United States do not have food readily available, do not have enough food, and worry about when they will receive their next meal.

How Poverty Affects Academic Achievement

From the moment of birth, learning is constantly occurring. Children are naturally curious and want to explore and learn. The National Association for the Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE) introduced a position statement that "the first years of life are critical for later outcomes. Young children have an innate desire to learn" (p. 1). Plucker and Peters (2017) stated that the achievement gap links advanced academic performance to income level. National test scoring shows a vast difference in children who qualify for a free or reduced National School Lunch Program and the children who are food secure. This difference is particularly evident in the subjects of math and reading. The United States has the highest ratio of excellence gaps in math and reading, second only to Hungary. When children are faced with food insecurity early in their lives, there are negative impacts on their brain development. Strategies for reducing the achievement gaps in the United States meet many obstacles. As a nation, the percentage of funds available for assistance to families below the national poverty level is lower than that in other developed countries. According to DeAngelis (2016), acceleration programs promote the continued performance of students throughout their educational careers. Children in lower economic levels that could potentially qualify for an accelerated program face the difficulties of transportation, access to technology, and school resources.

Studies centering on kindergarten children have revealed that as the level of food insecurity and hunger increases, math and reading scores decrease (Winicki & Jemison, 2003). the findings of Johnson and Markowitz (2018) showed that the younger a child experiences food insecurity, the more severe and lasting are its effects. Children exposed to

food insecurity for the first time at just 9 months old have reduced reading scores and hyperactivity problems upon entry into school. Children who experience food insecurity for the first time at 2 years old struggle in math, as well as learning in general. Food insecurity in children before the age of 5 years is linked to struggles in literacy and low academic performance.

Long-Term Effects of Poverty

Hunger and food insecurity in children have also been linked to long-term developmental delays (Holzer et al., 2008). Those children who are considered food insecure are subconsciously worried about when they will have their next meal. This mental stress on the child hinders them from being able to focus on learning and developing cognitive skills. Rossin-Slater (2015) made a powerful statement regarding the long-term effects of food insecurity in children: “Children who are healthy early in life—from conception to age five—not only grow up to be healthier adults, they are also better educated, earn more, and contribute more to the economy” (p. 35). In the long term, underdeveloped children have difficulty obtaining and sustaining jobs because they lack the skills needed to contribute successfully to the workforce. This lack of contribution produces a 1.3% drop in the national GDP annually (Holzer et al., 2008). McLaughlin and Rank (2018) found that child poverty now affects 5.4% of the GDP. Rossin-Slater’s (2015) research connects early health intervention for children to their lifelong success in society. Rossin-Slater discovered that low birth weight, caused by food insecurity in pregnant mothers, decreases children’s English and math scores and increases their chances of unemployment later in life.

The effects of poverty run deeper than just providing food for children. Research conducted by Imberman and Kugler (2014) suggested that children considered food insecure

and qualified for free school food programs saw immediate, dramatic increases in math and reading test scores. The long-term continuation of food programs, however, did not ultimately affect grades. Meeting a child's urgent basic need of food allowed the child to focus in the short-term but did not provide any positive long-term academic results. Further research determined that the effects of hunger and food insecurity begin while the child is in the uterus. Jackson (2015) studied the benefits of pregnant mothers who participated in the Special Supplemental Nutrition Program for Women Infants, and Children. This author concluded that children whose mothers participated in the program while pregnant had better cognitive development and long-term academic success than their siblings who were not provided the same nutrients while in utero.

Previous Studies and Similar Research

While there is little empirical research on which types of quality childcare programs tend to serve at-risk children, there is widespread evidence that attending such programs yields positive implications for at-risk children. For instance, Herndon and Waggoner (2015) compared the kindergarten readiness of at-risk children who had attended a quality childcare program to that of children who did not attend a program. These authors found that at-risk children were significantly more prepared for kindergarten. Specifically, they reported that at-risk children who used scholarships to attend an early childcare program scored higher on the Brigance Early Childhood Screen II K &1, suggesting that quality childcare programs can help increase the future academic achievement of at-risk children. A large-scale survey (N = 980) of the cognitive and language skills of low-income children also revealed that quality childcare programs result in significantly higher language skills and school readiness (McCartney et al., 2007). The findings of Polyzoi et al. (2020) also demonstrated that enrollment in subsidized childcare can help improve the language, literacy, and

communication skills of children who are experiencing extreme poverty. The authors of this study also found that at-risk children who are also special needs receive even more benefits from subsidized childcare than at-risk children without special needs (Polyzoi et al., 2020). Importantly, this study focused only on licensed and license exempt childcare centers, providing evidence that at-risk children who attend these types of programs reap positive benefits in terms of school readiness.

Sullivan et al. (2018) took a slightly different approach by exploring if families who received subsidies were more likely to use center-based childcare, which tends to yield improved school readiness, or family childcare homes. Sullivan et al. concluded that families who received subsidies were more likely to send their children to quality childcare centers. While these results do not offer insights into what specific type of quality childcare at-risk children were more likely to attend, they do provide evidence that at-risk children are more likely to attend quality childcare programs in general. These findings reflect the conclusions made in earlier research by Johnson and Ryan (2012). While it is clear that at-risk children who receive scholarships are likely to attend quality childcare and that such programs help improve students' school performance, there is a lack of data on what specific types of quality childcare centers are more likely to be utilized by at-risk children, complicating the distribution of funds and other resources.

Gaps in Research

The effects of poverty, mainly food insecurity, on children are well documented and researched. The benefits of providing quality childcare environments to help combat the effects of poverty on at-risk children shows the importance of ensuring children get the resources and tools needed to learn and grow. Little is known about the amount of funding and resources needed to provide a quality learning environment to at-risk children. Further,

research is needed to determine where at-risk children attend childcare programs so appropriate funds can be allocated correctly. As Simpson et al. (2018) noted, many at-risk children do not have access to quality childcare programs due to a lack of resources. Determining what types of childcare programs at-risk children are more likely to attend can help policymakers disseminate resources more efficiently, translating into increased access to quality childcare for at-risk children. Additionally, quality childcare can also improve the future academic achievement of at-risk children (Polyzoi et al., 2020), meaning that knowledge of where at-risk children attend childcare would also provide at-risk children with long-term benefits. Going forward, the knowledge of where at-risk children is receiving childcare may help to ensure that they receive education in a quality learning environment that caters to their needs.

Summary

Quality in early childhood education is crucial to the academic and lifelong success of a child. The children who live in poverty deserve a quality environment that enables them to close the achievement gap and develop at the same rate as their peers. While stakeholders each have their perception of quality within the early learning field, the assessments of each child's development and the environment allow teachers and administrators to ensure that they meet each child's unique needs and developmental milestones. In order for childcare programs to provide quality environments for at-risk children, resources and funding must be provided. The findings of the current study determined where at-risk children attend for childcare so that funding may be more efficiently appropriately allocated to assist at-risk children. Doing so will help set them up for long-term academic success. Parents are also a crucial key to their child's success. Parental involvement and parent-teacher communication need to assist the child's development and promote their unique needs. Funding needs to

occur in order for parents of at-risk children to become involved in their children's education, as many families cannot afford to miss work to volunteer at their child's childcare program. Teachers need to continually strive to better themselves through professional development, research, and training. Expert professional development requires payment, but childcare education remains one of the lowest paid professions (Palley & Shdaimah, 2018).

CHAPTER THREE: METHODS

Overview

In this study, the researcher used a quantitative, causal-comparative research design to analyze the sample of participants and determine whether there is a difference between the type of childcare center and the number of at-risk attendees in New Hampshire childcare facilities. The benefits of providing quality childcare to at-risk children are well-documented (Morgan, 2019; Morrissey & Vinopal, 2018); however, many at-risk children do not have access to quality childcare due to a lack of resources (Simpson et al., 2018). By determining what types of childcare centers at-risk children are more likely to attend, the distribution of funds and other resources may become more efficient, leading to improved academic outcomes for at-risk children. The results of this study may increase access to quality childcare for at-risk children and fill a gap in the literature on poverty and quality childcare. The researcher employed a well-known, demographic questionnaire as the instrument and followed standard research procedures to ensure the study's reliability and validity. Data were analyzed using the Kruskal-Wallis H test and *post hoc* power analysis. In this chapter, the researcher summarizes the research design, research questions and hypotheses, participants, setting, instrumentation, and data collection and analysis procedures.

Design

The purpose of this quantitative, causal comparative study was to determine whether there is a difference between the type of early childhood program and where the majority of the at-risk children in New Hampshire are attending. The use of a causal-comparative design allowed the researcher to analyze the sample at a single point in time. This type of design is useful for comparing different groups—in this case, the number of students in different types of programs. The quantitative approach was the most suitable method to answer the research

question because it enables the researcher to explain reality by collecting numerical data or observable behaviors (Gall et al., 2007). The distribution of this design enabled the researcher to gain a more in-depth understanding of where at-risk children attend and the difference between the type of childcare centers and the percentage of at-risk children who attend.

The independent variable was the type of childcare program, as defined by the New Hampshire Department of Health and Human Services, and the dependent variable was the percentage of at-risk children attending the different types of programs. Each independent variable group of licensed or licensed exempt childcare program can also be either a nonprofit or for-profit childcare program (Pond, 2017). Nonprofit centers are governed by a board of directors whose goal is to advance its mission, whereas for-profit centers are operated by a corporation or owner (Pond, 2017). The percentage of at-risk children who attend childcare programs was the study's dependent variable. At-risk children were defined as children who live at or below the poverty line (Harper et al., 2003). For the purposes of this study, at-risk children were identified as those children who receive New Hampshire state scholarship funds.

The researcher aimed to understand how the independent variable of type of childcare program relates to the dependent variable of the percentage of at-risk children attending. The researcher intended to evaluate the differences in type of childcare programs and their relationship to the attendance of at-risk children; therefore, the causal-comparative design is appropriate for the current study. According to Gall et al. (2007), "The critical feature of causal-comparative research is that the independent variable is measured in the form of categories" (p. 306).

The five types of independent variable groups used for this design were license-exempt providers, licensed center programs, licensed family provider programs, licensed-plus programs, and accredited programs. For the purposes of this study, only programs that are registered with the State of New Hampshire were included. The following section defines the independent variable groups.

Licensed programs can be operated in the provider's primary residence or in a center setting (Pond, 2017). According to the New Hampshire Department of Health and Human Services, licensed family provider childcare programs include programs who operate in their primary residence (Pond, 2017). These programs include family childcare homes, where up to six preschool children and three school-age children can attend under the supervision of a provider, and family group childcare homes that provide care for up to 12 preschool children and up to five school-age children under the supervision of a provider and one assistant (Pond, 2017). Licensed center programs provide care in buildings that are not the provider's primary residence and provide care for children older than 6 weeks and can include school-age children for up to 5 hours per day and full days during school vacations (Pond, 2017). Licensed center programs also include group childcare centers that care for mixed-age groups where up to four children may be under 3 years and five children may be school-age (Pond, 2017). Other licensed center-based programs include preschool programs where a structured program is provided for children who are at least 3 years old but not enrolled in a full-day school-age program (Pond, 2017). School-age programs provide care in either a family- or center-based setting and have six or more school-age children who are enrolled in a full-day kindergarten or school program (Pond, 2017). Both preschool and school-age programs are limited to 5 hours of care per day or less, with school vacation exceptions allowed for school-

age programs (Pond, 2017). For the purposes of this study, night care programs (which provide care between the hours of 7:00 PM and 6:00 AM) and residential childcare programs (which provide 24-hour care to children) were excluded (Pond, 2017).

License-exempt providers deliver care for children but qualify for an exemption that allows them to operate without a license or need to follow the regulations established by DHHS's Child Care Licensing Unit (Pond, 2017). Examples of license-exempt providers include childcare services offered in conjunction with religious services, private in-home childcare offered by related adults, municipal recreation programs, programs offered to the general public by institutions such as bowling allies and malls, and daytime programs operated by a public or private school or institution of higher learning (NHDHHS, n.d.). While these types of programs do not have to be licensed, they must undergo a background and criminal check if they care for children who receive state scholarships.

Licensed-plus programs are licensed, center-based childcare programs that focus on providing quality care for children and implementing quality educational practices above licensing requirements (Pond, 2017). The requirements for licensed-plus programs include that all staff undergo annual performance evaluations, that programs have a written curriculum statement, programs communicate with families of enrolled children on a regular basis, and that the program must make all possible reasonable accommodations for children with special needs (NHDHHS, n.d.). Additionally, the program director and teachers must undergo a minimum of 18 hours of annual professional development (NHDHHS, n.d.). The last group of childcare centers included in this study, accredited centers, describe licensed, home- or center-based childcare programs that have been evaluated through self-studies and outside agencies to ensure compliance with quality standards of childcare (Pond, 2017).

Research Question

RQ: Is there a difference in the percentage of at-risk children served at the five classifications of New Hampshire childcare facilities (i.e., licensed center, licensed family provider, license-exempt, licensed-plus, accredited)?

Hypothesis

The null hypothesis for this study was as follows:

H_0: There is no statistically significant difference between the percentages of at-risk children served at the five classifications of New Hampshire childcare facilities (licensed center, licensed family provider, license-exempt, licensed-plus, accredited).

Participants and Setting

In this study the researcher used a random sample of licensed and license-exempt childcare centers from the 689 preschools and child care centers located in New Hampshire. The sample size used for this study was 180 childcare centers.

Population

The target population for this study included childcare centers in New Hampshire. There are 689 preschools and child development centers in New Hampshire (Childcare Center US, 2021). According to data from 2019, the child poverty rate in New Hampshire is about 11%, with 3,800 families receiving childcare subsidies (Kids Count, 2019). Furthermore, an estimated 5% of children in New Hampshire are living in extreme poverty, in which family income is less than 50% of the federal poverty level (National Kids Count, 2020).

Participants

The participants for the study were a random sample of licensed and license-exempt childcare centers located in New Hampshire in 2022. To qualify for eligibility for this study,

childcare centers must either be a licensed center program, a licensed family provider program, a licensed-plus program, an accredited program, or a license-exempt provider. Furthermore, programs provide care to children living below the federal poverty line who receive New Hampshire state scholarship funds. There are currently 689 childcare centers operating in New Hampshire, including 172 licensed-plus centers and 37 accredited centers (Pond, 2017). A random sampling method was used to recruit participants from these programs. With random sampling, each participant has an equal probability of being chosen (Etikan & Bala, 2017). Random sampling procedures are appropriate sampling methods for large-*N* quantitative studies because the random nature of selection allows researchers to make inferences about the entire target population.

There is no universally accepted number for what constitutes an acceptable sample size for quantitative research, but generally, large sample sizes have more statistical power (Prajapati et al., 2010). For studies using non-parametric tests such as the Kruskal-Wallis H test, such as the current study, *a priori* power analysis can be run to determine an appropriate sample size. Information needed to conduct a power analysis includes the statistical power of the hypothesis test and the significance level (Gall et al., 2007). A common significance level in statistical analysis is 0.05, which indicates that there is a 5% probability of observing a given result by chance (Gall et al., 2007). The chosen significance level for this study was 0.05. The statistical power of this study refers to the probability that the hypothesis will correctly reject a false null hypothesis; the statistical power for this study was .80, consistent with other statistical studies (Gall et al., 2007). An *a priori* power analysis using G* Power was conducted using the aforementioned criteria, the results of which revealed a sample size of 180, or about 45 participants for each group (Appendix A). According to Gall et al. (2007,

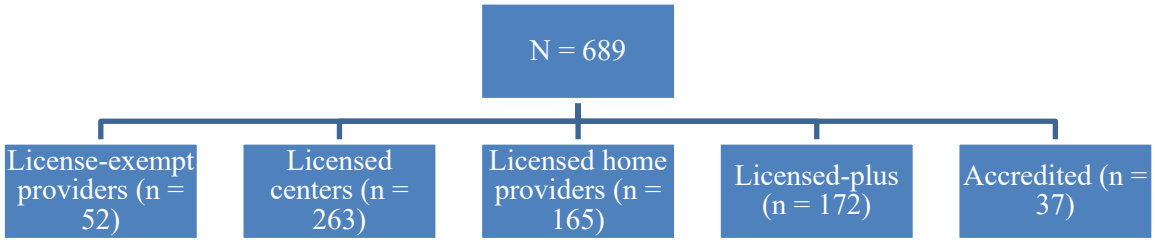
p. 145), this sample size estimate exceeds the require minimum for a one-way ANOVA with four groups when assuming a medium effect size with a statistical power of 0.7 at a 0.5 alpha level. The researcher submitted an approval request to conduct this study to the university's Institutional Review Board (IRB). Upon receipt of approval from the IRB (Appendix B), the researcher requested permission to conduct this study from the childcare centers via consent forms. Of the 689 consent forms sent, only 368 were returned, representing a response rate of 53%.

Setting

The setting for the study was quality childcare programs in New Hampshire. The types of programs included in this study were license-exempt providers, licensed center programs, licensed family provider programs, licensed-plus programs, and accredited programs. As previously explained, participating programs were chosen using random sampling. The New Hampshire Department of Health and Human Services distributed information about the study to all active and licensed or license exempt childcare facilities. The total number of questionnaires administered to childcare programs was 689. In the sampling size, there were 52 license-exempt providers, 263 were licensed centers, 165 were licensed home providers, 172 were licensed-plus, and 37 were accredited (see Figure 1). The researcher used the answers provided by the program representatives from the questionnaires to validate the reliability of the study.

Figure 1

Sampling Size Distribution



Instrumentation

The researcher administered a questionnaire to determine the percentage of children that attend each of the five childcare program types: license-exempt, licensed center, licensed home provider, licensed-plus, and accredited. See Appendix C for instrument. The questionnaire included two questions. The first question inquired about the type of program. The second question requested the total number of all children attending the center and the number of at-risk students attending the center so that the percentage of at-risk children can be calculated. The purpose of using percentage of at-risk children rather than the count of at-risk children was that percentage allows for greater generalizability when calculating means based on count alone (Zhao et al., 2017). The questions were not leading, biased, vague, or negative; did not use unfamiliar terms or absolute answers; and were not excessively long (Sullivan & Artino, Jr., 2017). The benefits of using questionnaires in data collection include the low cost to implement and the ability to represent a majority of the targeted population (Queirós et al., 2017). The use of questionnaires assists in mitigating researcher bias and subjectivity and facilitates data collection. Care was taken in ensuring that the questions would lead to quality and substantive answers. This questionnaire collected only existing, program demographic data.

Procedures

Before beginning data collection, the researcher sought approval from the university's IRB. The process of obtaining IRB approval consists of providing clarification of the research question, conducting a critical review of the literature, providing rationale, protocols, and safeguards of the study to the IRB, providing all requested statistics, and adhering to all ethical principles including receiving written, informed consent and confidentiality. The researcher declared any potential conflicts of interests, including that she

is the owner of three childcare centers.

After approval from the IRB was obtained, the administrators of the childcare programs needed to agree to participate. The agreements were arranged to be sent out in an email with the link to the Survey Monkey questionnaire. Emails with permission forms attached were sent to every childcare program in New Hampshire. The significance and purpose of the study were presented in the email. Only programs who provided permission for the study were chosen to participate. At the same time that permission slips were emailed, each program representative received information detailing the study, the purpose of the study, and the instructions for completing the instrument. The programs whose leaders agreed to participate were randomly selected for inclusion in the study. Selected programs were sent a two-question questionnaire that only collects demographic information. The first question asked the program to identify the type of childcare program, and the second question asked for the percentage of at-risk children in attendance. The questionnaire was sent out via email using Survey Monkey to all participating childcare programs. The questionnaire was anonymous and collected no identifying information. Because the questionnaire was emailed to the program's representative individually, the survey was completed without influence from peers. The survey took less than 10 minutes to complete, and all questions were required to be answered to be considered valid. Care was taken to eliminate collaboration among other program representatives.

After the surveys are completed, Survey Monkey sent the data back to the researcher. The received questionnaires were sorted based on program type. Only surveys that were fully completed were counted. The results collected from the main experiment were collected and recorded using Microsoft Word and Excel.

Data Analysis

A Kruskal-Wallis H test, also known as one-way analysis of variance (ANOVA) on ranks, was conducted to determine the effect that center type has on the availability of resources for at-risk children. This test is the ranked, non-parametric alternative to a standard ANOVA test. The Kruskal-Wallis H test determines if the medians of two or more groups are different (Glen, n.d.). It is similar to ANOVA, which "compares the amount of between-groups variance in individuals' scores with the amount of within-groups variance," (Gall et al., 2007, p. 318), except the Kruskal-Wallis H test does not require parametric assumptions such as normal distribution of data, homogeneity of variance, and no significant outliers to be met. The Kruskal-Wallis H test should be used when the independent variable consists of more than two groups, the dependent variable is continuous, and assumptions for ANOVA cannot be met (Glen, n.d.). The present study had a categorical independent variable with five groups (i.e., type of childcare center) and a continuous dependent variable (i.e., percentage of at-risk children in attendance). Since several assumptions for ANOVA were not met in this study (see Chapter 4), the Kruskal-Wallis H test was an appropriate statistical test to use.

All data were visually screened to check for missing data points and inaccuracies. Box-and-whisker plots were used to identify extreme outliers. To determine if ANOVA could be conducted, the data analysis procedure included testing the assumptions of normality using the Shapiro-Wilks test and the assumption of the homogeneity of variance using the Levene test. The results of these tests determined that the Kruskal-Wallis H test had to be conducted due to the violation of several ANOVA assumptions. The null hypothesis was accepted or rejected at the 95% confidence level. In the event of a null hypothesis rejection, *post hoc* Tukey tests would have been used to determine which types of childcare

centers have statistically different percentages of at-risk children in attendance. Descriptive statistics of mean and standard deviation were reported for each group of the independent variable. The effect size for the Kruskal-Wallis H test was reported using partial eta square.

CHAPTER FOUR: FINDINGS

Overview

The purpose of this quantitative, causal-comparative research study was to analyze the sample of school going children and determine whether there was a difference between the type of childcare center and the number of at-risk attendees in New Hampshire (NH) childcare facilities. The participants for the study were drawn from a random sample of licensed and licensed exempt childcare centers located in New Hampshire (NH), United States of America (USA) in 2022.

This chapter of the results section presents the data analysis report as presented and discussed in the previous preceding chapter of the methodology above. Kruskal-Wallis H test, a non-parametric statistic, was performed to check on the changes in percentages of at-risk children among the different childcare center facilities. Before this analysis proper was done however, the data was subjected to assumptions test to check the validity of the data to be subjected to ANOVA test. Descriptive analysis describing the data from the childcare centers will be presented prior to discussing the results of the statistical inferential test.

Research Question

RQ: Is there a difference in the percentage of at-risk children served at the five classifications of New Hampshire childcare facilities (i.e., licensed center, licensed family provider, license-exempt, licensed-plus, accredited)?

Null Hypothesis

H_0: There is no statistically significant difference between the percentages of at-risk children served at the five classifications of New Hampshire childcare facilities (licensed center, licensed family provider, license-exempt, licensed-plus, accredited).

Descriptive Statistics

The sample population for this study were drawn from a random sample of licensed and licensed exempt childcare centers located in New Hampshire (NH), United States of America (USA) in 2022. The proposed minimum sample size of 180 childcare centers was largely met since 334 centers responded and took part in the study. Of the total number of questionnaires administered to childcare programs that responded (334), there were 249 (74.6%) licensed centers, 12 (3.6%) were licensed-exempt, 8 (2.4%) were Licensed Plus, and 65 (19.5%) were Licensed family providers. There were no accredited centers that responded to the survey. Despite meeting the overall sample target, the expected numbers per type of childcare facilities were not met in two of the five categories. It was anticipated that each group would have at least 45 participants, but three categories did not meet this threshold: Accredited, License-Exempt, and License-Plus groups had 0 (0.0%), 12 (3.6%), and 8 (2.4%) participating childcare facilities only. For purposes of this study, the Accredited group was removed from all research analysis.

All numerical variables included in the descriptive analysis had skewed distributions and so were summarized using the median and Inter-Quartile Range (IQR) instead of the usual mean and standard deviation for normally distributed data. Binary and categorical variables were presented using counts and column percentages.

The childcare facilities differed significantly in terms of the licensing capacity; with the License centers and License-Except facilities having larger numbers compared to License-Plus and Licensed family providers. For example, the License centers and License-Except facilities were licensed to have an average median capacity of 60 and 84 children respectively compared to an average median of 3 and 12 for License-Plus and Licensed family home providers respectively. Most of the facilities (77%) reported admitting children

receiving NH Child Care Scholarship Employment Related (ER) and this statistically was different across the 4-types of childcare facilities. The license facilities had 81% while license-exempt had just about 50% reporting admitting children under that arrangement. Those facilities offering children receiving NH Child Care Scholarship Preventative and Protective (P&P) represented about 53% of all the facilities included in the study. License centers had the largest share here, with 60% reporting so and License-Plus reporting the lowest percentage at 12%.

Results

Hypothesis

The purpose of this quantitative, causal-comparative research study was to analyze the sample of school going children and determine whether there was a difference in percentages of at-risk attendees between the type of childcare in New Hampshire childcare facilities. The main research hypothesis was that there was no statistically significant difference between the percentages of at-risk children served at the five classifications of New Hampshire childcare facilities (licensed center, licensed family provider, license-exempt, licensed-plus, accredited). The results of the statistical analysis for the research hypothesis is presented in this section.

Descriptive Statistics of Main Outcome (Dependent) Variable among Independent Variables

The descriptive statistics of the main dependent variable disaggregated according to the independent variables is presented in Table 1 below.

Table 1

Descriptive Statistics of Key Analysis Variables

Group	Obs.	Min.	Max.	Mean	Median	IQR[a]
License center	120	0.0	100.0	9.8	0.0	0.0 - 10.0
License-Exempt	4	0.0	100.0	25.0	0.0	0.0 - 75.0
License-Plus	--	--	--	--	--	--
Licensed family provider	16	0.0	100.0	15.3	0.0	0.0 - 15.0
Total	140	0.0	100.0	10.8	0.0	0.0 - 10.0

a. Inter-Quartile Range

The License-Plus did not have any valid cases for analysis and so were excluded from the main analysis. Most of the data points were around the zero median value.

Assumption Analysis for ANOVA Analysis

For inferential analysis involving the dependent (percentages of at-risk children) and independent variables (four categories of childcare facilities), we proposed to use analysis of variance (ANOVA) to determine whether there were any statistically significant differences between the means of the four independent (unrelated) groups. For the research to conclusively use the ANOVA test to get valid results however, there are always assumptions that the data have to meet. Although ANOVA tests are quite robust, it is often a good practice to evaluate the degree of deviation from these assumptions in order to assess the quality of the results. According to Laerd Statistics there are six assumptions that must be met in order to utilize ANOVA, which is a parametric test (Laerd Statistics, 2018). If the

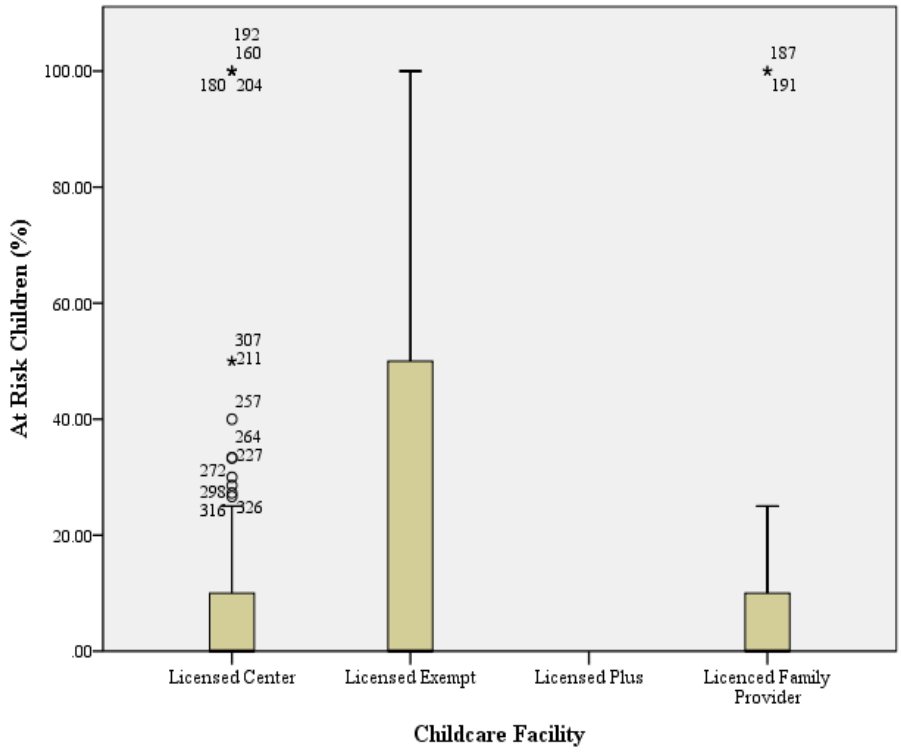
assumptions are not met, a non-parametric test called the Kruskal-Wallis H test should be used instead of ANOVA.

Assumption one is that the dependent variable should be measured at the interval or ratio level (that is, they are continuous) (Laerd Statistics, 2018). The dependent variable for this study was a calculated percentage of at-risk children in attendance and is therefore continuous variable. Assumption two is that the independent variable should consist of two or more categorical, independent groups. This is largely met in the study since the participants were categorized into four groups: (i) Licensed center, (ii) Licensed-Exempt, (iii) Licensed Plus, and (iv) Licensed family provider. Assumption three is that there is independence of observations, which means that there is no relationship between the observations in each group or between the groups themselves (Laerd Statistics, 2018). The third assumption is more of a study design issue than something that can be tested for and the study design already created these groups explicitly.

Assumption four is there should be no significant outliers. The researcher produced a box plot to assist in displaying the distribution of data, based on the four independent categories. As Figure 2 shows, there are a number of outliers in the license center-only and Licensed family provider categories of the dependent variable. The License-Plus category did not have any valid data for this analysis, as indicated in the figure. The Licensed-Exempt category had no outliers in the data.

Figure 2

Box-and-Whisker Plot of At-Risk Percentages Across the Childcare Facilities



Assumption five is that the dependent variable should be approximately normally distributed for each category of the independent variable (Laerd Statistics, 2018). The researcher, in order to test this assumption, run a Shapiro-Wilk test of normality (Table 2). The null hypothesis for the Shapiro-Wilk test is that the sample comes from a normal distribution. The *p*-value of the test (Table 2) is less than the 0.05 threshold, so the null hypothesis will be rejected since the data significantly deviate from a normal distribution and conclude that the data is non-normal.

Table 2

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Groups	Statistic	*df*	*p*-value	Statistic	*df*	*p*-value
At-Risk Children (%)	0.3	140	< 0.0001	0.5	140	< 0.0001
Childcare Facilities	0.5	140	< 0.0001	0.4	140	< 0.0001

a. Lilliefors Significance Correction

Lastly, assumption six talks about there being a need to have homogeneity of variances and this can be tested using Levene's test for homogeneity of variances. It's not often necessary to meet the homogeneity assumption if the groups being compared have roughly equal sample sizes (Freund et al., 2010), however, the data collected had unequal sizes and so this test was necessary. The null hypothesis for Levene's test is that the groups being compared all have equal population variances. The Levene's test showed that the variances for percentage of At-Risk children were not equal among the four groups of childcare facilities, $F(2,77) = 5.1$, $p = .0007$.

From our analysis on the assumptions for using ANOVA test statistic, we see that most of the main assumptions were not met. For example, we found significant outliers in the data, the main dependent variable was not normally distributed among the four childcare facilities, and homogeneity of variances test failed. The researcher therefore used a non-parametric test called the Kruskal-Wallis H test.

Null Hypothesis Testing and Results

The main research hypothesis was formulated as: There was no statistically significant difference between the percentages of at-risk children served at the five

classifications of New Hampshire childcare facilities (licensed center, licensed family provider, license-exempt, licensed-plus, accredited). In order to determine if there was a difference in percentages of at-risk attendees between the type of childcare facilities, the researcher used the Kruskal-Wallis H test (Table 3) with a 5% level of significance ($\alpha = .05$).

Table 3

Kruskal-Wallis H test

Childcare Group	Obs	Mean Rank	Chi-Square	*df*	*p*-value
License center	120	71.0			
License-Exempt	4	69.4	0.2	2	0.9
License family provider	16	67.3			

A Kruskal-Wallis H test showed that there was no statistically significant difference in the percentage of at-risk children served at the three classifications of New Hampshire childcare facilities, $\chi2(2) = 0.2$, $p = 0.9$. The null hypothesis of there was no statistically significant difference between the percentages of at-risk children served at the five classifications of New Hampshire childcare facilities is not rejected since the *p*-value is greater the .05 threshold.

CHAPTER FIVE: CONCLUSIONS

Overview

In the concluding chapter of the dissertation, the researcher situates the results of the study within the broader literature on poverty, childcare, and children's learning and development. The chapter opens with a brief overview of the study before relating the study's results back to the literature. The main finding from this study, that there is no significant difference between the percentage of at-risk children attending the three different types of New Hampshire childcare facilities, is discussed in relation to those of other studies on childcare and at-risk children. The following section outlines the practical implications arising from the results. Next, the limitations of the study and future directions for research are discussed.

Discussion

The purpose of this quantitative, causal-comparative study was to determine whether there is a difference in the type of childcare center that at-risk children attend. Children living below the poverty line are at-risk of developing negative health and developmental outcomes stemming from poor nutrition, impaired cognitive functions, lack of school readiness, and compromised growth and development (Enns, 2019). Researchers have shown that attending quality childcare programs early in life can provide children with the skills that are crucial for success later in life (Morrissey & Vinopal, 2018). There is evidence that at-risk children benefit from attending a high-quality early learning program so that they can start to develop these skills early in life (Morgan, 2019). There is a lack of research, however, regarding which type of childcare programs a majority of children who live in poverty attend. The sample for this study was drawn from a random sample of licensed childcare centers located in New Hampshire, with 334 facilities participating in the study. The different types of licensed childcare centers in New Hampshire are licensed centers, licensed family providers, license-exempt, licensed-plus, and

accredited facilities. The researcher conducted the Kruskal-Wallis H test, a nonparametric statistic, to determine the changes in percentages of at-risk children among the different childcare center facilities.

The research question for this study asked whether there is a significant difference in the percentage of at-risk children attending each of the five types of licensed childcare facilities in New Hampshire. As stated in Chapter Four, the results of the Kurskal-Wallis H test revealed that there is not a statistically significant difference in the percentages of at-risk children attending each type of facility. For the purposes of this study, at-risk children were defined as meeting state standards for receiving subsidized childcare through scholarships. While not always the case, oftentimes the location of a childcare facility determines whether it serves at-risk children given that zip codes are known to be somewhat reliable predictors of income (Schneider et al., 2021). This study was one of the first empirical investigations into whether at-risk children attend certain types of childcare facilities. There is widespread evidence that attending quality early childcare programs can yield positive outcomes for at-risk children (Herndon & Waggoner, 2015; McCartney et al., 2007). The costs of these programs and a lack of available resources, however, can prevent at-risk children from attending these programs. It is, therefore, important to determine which types of childcare facilities tend to draw more at-risk children to more efficiently allocated limited funds and resources.

While the results from this study do not indicate that the families of at-risk children tend to send their children to a certain type of childcare facility, it still represents an important contribution to the literature. Previous researchers have found that enrollment in subsidized childcare can help improve the language, literacy, and communication skills of children who are experiencing extreme poverty (Polyzoi et al., 2020). As high costs can prevent at-risk children

from attending quality childcare programs, state subsidies represent an important resource to families living below the poverty line and may offer opportunities for these families to enroll their children in such programs. Indeed, Sullivan et al. (2018) found that families who received subsidies were more likely to send their children to quality childcare centers, providing evidence that at-risk children are more likely to attend quality childcare programs in general. These findings align with those from the present study, in which 76.5% of the participating facilities indicated that they served children receiving state scholarships. While there was no statistically significant difference overall in the type of childcare facility that at-risk children attended, there was a difference in the type of childcare facility that accepted at-risk children. For instance, 81% of licensed center facilities served children received the NH Child Care Scholarship Employment Related, while half of the license-exempt facilities surveyed accepted this scholarship. Licensed-plus facilities had the lowest number of locations accepting children with this scholarship. These findings make it clear that subsidies offer an opportunity for at-risk children to attend quality childcare programs, as well as that the types of quality childcare programs available to at-risk families are limited to mostly licensed center facilities.

Implications

The results from this study yield several important implications for research and practice. The findings demonstrated that there is no significant difference between the number of at-risk children attending different types of quality childcare programs. This suggests that the families of at-risk children do not have a preference for the type of quality childcare facility their child attends. This result has important policy implications because it indicates that more funding and resources should be distributed to all types of quality childcare facilities, rather than being limited to just one. Because high-costs and a lack of resources can be barriers preventing at-risk children from attending these programs, the allocation of additional resources is crucial to

improving their long-term success (Simpson et al., 2018). Additionally, the data collected in this study indicated that the most common types of facilities to accept at-risk children were licensed centers and license-exempt. This finding suggests that these facilities may be more popular with the families of at-risk children, although more research would have to be conducted to draw further conclusions. Nonetheless, this is a significant finding because, as Polyzoi et al. (2020) noted, knowledge of where at-risk children attend childcare will also provide at-risk children with long-term benefits through the more efficient distribution of resources. This finding also indicates that more resources need to allocated to other types of childcare programs—namely, licensed family providers and licensed-plus facilities—so that the families of at-risk children may have the opportunity to send their children to these types of programs.

Limitations

When performing statistical analysis, it is important to comment on the validity of the methods used and results obtained. There are two main types of validity: internal and external. The internal validity of a study is defined by the extent to which the independent variable (in this case, type of childcare center) caused change in the dependent variable (in this study, percentage of at-risk children enrolled). As this study was not a true experiment in the sense that the independent variable was not the only potential factor influencing the dependent variable, the internal validity of the results must be scrutinized. Threats to the internal validity of a study usually stem from issues in its research design. A quantitative, causal-comparative design was chosen for the present study. Such a design was an appropriate choice for this study because it can be used to determine whether an independent variable has an influence on a dependent variable (Gall et al., 2007). Such a design is less focused on examining correlational relationships between variables and more focused on establishing whether one variable has a direct influence on another. The two main limitations of this research design are the lack of

randomization and inability to manipulate the independent variable (Baldwin, 2018). In causal-comparative research, random assignment of subjects to groups is impossible because the groups are already formed. In the current study, the type of childcare center that families had enrolled their children in was already determined. For this same reason, the independent variable in causal-comparative research (in the present study, the type of childcare center) is unable to be manipulated. Due to these limitations, an apparent cause-and-effect relationship may not be what it seems. What this means for the present study is that the type of childcare center may not have an influence on the percentage of at-risk children that are enrolled, and that enrollment of children in this population may be due to other confounding variables such as proximity of the center to children's homes.

The external validity of a study is associated with the generalizability of the study's findings. While quantitative research typically generates findings that are more generalizable than those generated in qualitative research, there is still a limit to how widely the results can be applied. The only participating childcare centers in this study were located in New Hampshire; therefore, the results of this study should not be generalized to other locations. In other words, it is not possible to definitively conclude that at-risk children do not tend to be enrolled in one type of childcare center over another in other locations. A broader, regional, or national sample would have to be used to make such conclusions.

Recommendations for Future Research

To the current researcher's knowledge, this is one of the first studies to specifically address what types of childcare programs at-risk children are more likely to attend. In light of this observation, it is prudent that further research on this subject be conducted to develop a better understanding of what kinds of childcare programs at-risk children are more likely to attend and why to facilitate a better distribution of resources and better policy formulation. The

researcher presents the following recommendations pertaining to the design and focus of future investigations on this topic:

1. The results of this study indicated that at-risk children are not more likely to attend one type of childcare center over the other, at least in New Hampshire; however, the quantitative nature of this study precludes a more nuanced understanding of why this is. While it is important to know what types of childcare programs host at-risk children, it is also important to know why certain programs may or may not host more at-risk children than others. For this reason, future research should utilize a qualitative design to facilitate a more holistic understanding of why certain childcare programs have a certain number of at-risk children enrolled. For instance, it may be that factors such as location of the facility to children's homes or availability of bilingual staff and programs influence the number of at-risk children in attendance.
2. All the childcare centers that participated in this study were in New Hampshire, meaning that the results of this study cannot be generalized beyond the state. Future research should be broader in scope and utilize a regional or national-level sample of childcare centers. Broadening the geographical scope of the study would help identify more generalizable conclusions and could help researchers pinpoint trends in what kinds of childcare programs at-risk children are attending.
3. Future studies could utilize different research designs to study the relationship between at-risk children and childcare. For instance, correlational research could be conducted to determine whether there is a correlation between certain factors relating to a family's socioeconomic status and the type of childcare facility their child attends. The causal-comparative design of the present study means that it is unknown whether certain factors

may influence at-risk families to send their children to certain types of programs; it is only known that there is no significant difference in the number of at-risk children attending different childcare programs in New Hampshire. Determining whether a correlation exists between certain aspects of at-risk families and type of childcare center could help policymakers develop more focused resource allocation policies.

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APPENDIX A

INSTRUMENTATION

1. Please select your childcare facility's classification type (Multiple Choice Question):
    a. Licensed
    b. Licensed-Exempt
    c. Licensed Plus
    d. Accredited

2a. Please indicate the number of children served by your childcare facility (Open-ended numerical response question).

2b. Please indicate the number of "at-risk" children served by your childcare facility. For the purposes of this study, "at-risk" is defined children who receive New Hampshire state scholarship funds (Open-ended numerical response question).

APPENDIX B

IRB APPROVAL LETTER

May 23, 2022

Danielle Higuera
Joseph Fontanella

Re: IRB Application - IRB-FY21-22-806 THE DIFFERENCE IN PERCENTAGE OF AT-RISK CHILDREN SERVED IN NEW HAMPSHIRE CHILDCARE FACILITIES BASED ON FACILITY TYPE

Dear Danielle Higuera and Joseph Fontanella,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your project with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your study is not considered human subjects research for the following reason:

(1) It will not involve the collection of identifiable, private information from or about living individuals (45 CFR 46.102).

Please note that this decision only applies to your current application, and any modifications to your protocol must be reported to the Liberty University IRB for verification of continued non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

Also, although you are welcome to use our recruitment and consent templates, you are not required to do so. **If you choose to use our documents, please replace the word** *research* **with the word** *project* **throughout both documents.**

If you have any questions about this determination or need assistance in determining whether possible modifications to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

APPENDIX C

G*POWER ANALYSIS