

WHAT IS THE RELATIONSHIP BETWEEN EARLY CHILDHOOD
TEACHER TURNOVER, ADULT STAFF RESILIENCE AND
RESILIENT LEADERSHIP PRACTICES AT LICENSED EARLY
CHILDHOOD CENTERS?

by

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To my family; bonded beyond marriage and blood; bonded by love.

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A dissertation is a journey. It includes planning, review, and relationships. This dissertation was not accomplished by me alone. It was accomplished by those I consider a part of my community, my personal village.

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Tamara Labadie Arakelian

ABSTRACT

WHAT IS THE RELATIONSHIP BETWEEN EARLY CHILDHOOD TEACHER TURNOVER, ADULT STAFF RESILIENCE AND RESILIENT LEADERSHIP PRACTICES AT LICENSED EARLY CHILDHOOD CENTERS?

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This research investigated the relationship between adult resilience, resilient leadership practices, and variables that reflected turnover to learn if increasing adult resilience or resilience leadership practices is an avenue to reduce turnover of high quality early childhood education teachers. The areas of adult resilience and resilient leadership practices that were measured include relationships, initiative, internal beliefs, and self-control as itemized in the Devereux Adult Resilience Survey (DARS) and Devereaux Resilience Leadership Survey (DERLS). One-hundred and eighty-five adults participated by completing a survey that gathered their individual information including demographic information like age, information related to turnover like how long they anticipated working at the current center, and responses to the DARS and DERLS. Administrators were also asked to provide center information, like whether turnover was the lower, the same, or higher than the previous year. Those who submitted a survey worked in early childhood centers from an urban area in a Midwestern State of American.

The 185 adults who submitted a survey included 99 teachers and 86 administrators from 82 different licensed centers. They ranged in age from 25 to 63 years. A quantitative analysis included factor analysis that established composite variables for each of the DARS and DERLS areas. Statistical significance was analyzed using chi-square, one-way ANOVA, logistic regression, and linear regression. The researcher found many significant relationships. For example, centers with staff with higher DARS ratings had lower turnover and center directors with research recommended qualifications also significantly predicted turnover at the center. Applications include investing in early childhood at each of Bronfenbrenner's ecological systems to build the resilience of early childhood professionals

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LIST OF ABBREVIATIONS

CLASS	Classroom Assessment Scoring System published by Teachstone
DARS	Devereux Adult Resilience Survey
DECA	Devereux Early Childhood Assessment
DERLS	Devereux Resilient Leadership Survey
ECERS-R	Early Childhood Environment Rating Scale
ITERS-R	Infant-Toddler Environment Rating Scale-Revised
NAEYC	The National Association for the Education of Young Children
PQA	Program Quality Assessment published by HighScope
T.E.A.C.H.	Teacher Education and Compensation Helps

CHAPTER ONE

THE PROBLEM AND ITS BACKGROUND

“Miss Smith has accepted a new opportunity and we’re hoping to have a new teacher soon.” These were the words Louiva read on a note to all families from her daughter’s child care setting. This is the third note about her child’s teacher leaving that Louiva had received in the past ten months. Each teacher had started excited, bonded with her daughter, then over time seemed to get more and more overwhelmed until another note with a similar message was provided to families.

Louiva was frustrated. She paid about twenty-percent of her income a year so her daughter could have for high quality child care during her preschool year. A new teacher every four months is not what Louiva expected. With every change in teacher, her child showed signs of stress. She would cling to Louiva at drop off when a new teacher was in the room, instead of someone her daughter knew. At pick-up time, her daughter would cry in relief at the sight of her mother. Her daughter would also eat less and not sleep as well. Louiva wondered why the center couldn’t find a consistent preschool teacher. She wondered what an early childhood program could do to retain quality teachers.

Introduction

While Louiva’s story is fictional, it is based on real anecdotes and research-based statistics. High quality early childhood teacher turnover is high across America, and has been for decades. Because of the impact it has on children, families, current employers, and the future it has been researched for decades. This scenario is what drives the focus of this research, which focusses on what impacts the turnover of high quality early

childhood teachers including a focus on whether it is related to adult resilience and resilient leadership practices.

Background to the Issue Including Main Problems

The research focus originated with a focus on improving human development. The focus on human development led to a focus on brain development. Through research on brain development, Harvard University's Center for the Developing Child reports the brain's ability to change is greatest from its prenatal stage of development through age twelve (Nelson, 2000; Walker, 1964). This time period is often referred to as early childhood.

Through early childhood the brain develops millions of neurological pathways and then begins pruning them (Nie, Li, & Shen, 2013). As a result of the neurological development that happens in the early years, it is a time when the brain has the greatest plasticity for development that impacts a person through adulthood (Center on the Developing Child, 2009). This plasticity results in opportunity for both positive and harmful adult development.

Research related to Adverse Childhood Experiences, more commonly known as ACEs, demonstrates how the plasticity of the brain at an early age also makes it susceptible to long-term harmful outcomes (Beckman, 2017). Research from the Harvard Center for the Developing Child has found positive adult development when a young child does not experience toxic stress. All young children, including those with or without ACEs, benefit from consistent, responsive interactions (Center on the Developing Child, 2016).

The Harvard Center operationalized responsive interactions through a “serve and return” model. In this model, the child serves an opportunity for an interaction which could be through eye contact, pointing, or sounds. Those near the child are encouraged to notice the serve and share in the child’s focus of attention, return the serve through support and encouragement, develop language by giving names to items, take turns including waiting for the child to serve again, and to recognize when a child is ending an interaction or focus and beginning a new one (Center on the Developing Child, 2016). Those with frequent opportunity to provide serve and return interactions with the child are in the microsystem as defined by theorist Urie Bronfenbrenner (1994).

The microsystem includes people the child interacts with on a daily basis. For example, those living in the home, attending school, or attending a religious institution that the individual attends. When there is a change in consistency of those in the microsystem of the child, there is an impact on responsiveness of interactions and, as a result, on brain development.

There are a variety of settings where children ages zero through five are cared for. Professionals in education refer to settings that provide care and early learning as early childhood education programs. Early childhood education programs include licensed child care homes, group homes, and centers.

Research from high quality early childhood education programs, like that of the Perry Preschool Study and the Abecedarian Preschool project, demonstrate how positive experiences in these settings correlate to positive adult outcomes, even if other areas of the microsystem like the home and community may be sources of toxic stress for a child (Campbell, et al., 2012; Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010). Generally

agreed-upon dimensions of program quality include: (1) health and safety requirements, (2) responsive and warm interaction between staff, children, and families, (3) developmentally appropriate curriculum, (4) limited group size, (5) age appropriate caregiver to child ratios, and (6) providers and administrators trained in child development or a related field (Welde, 2017).

Turnover of early childhood education teachers and caregivers has a direct impact on each of these six areas. With high turnover, one cannot provide high quality early childhood experiences in early learning programs, limiting the opportunity to relieve toxic stress from other areas of the microsystem of a young child and improve adult outcomes (Rhodes & Huston, 2012). Brain development is negatively impacted by high turnover (Howes & Hamilton, 1993; Shonkoff & Phillips, 2000; Whitebook & Sakai, 2003), creating a desire to understand what factors impact early childhood teacher turnover.

For this study, turnover is defined as a departure from a child care job to either leave the profession or switch schools, (Whitebook & Sakai, 2003; Boyd et al., 2011). Some turnover is positive, including when a low quality teacher chooses to leave or a high quality teacher leaves due to their professional growth. Turnover that is negative is when a high quality educator leaves due to work-related factors, some of which are noted in this section.

The National Association for the Education of Young Children (NAEYC) defines early childhood teachers as professionals working with children ages prenatal through age eight. This population is a focus because they are working with children during a critical period of brain development. Currently, this group of professionals can be divided

into two groups: those working with children ages prenatal through five and those working with children ages five through eight. Those working with children ages zero through five have a turnover rate between 11% and 33% (Whitebook, Phillips & Howes, 2014), which has an impact on the children the professionals are working with. Early childhood teachers working with children age five through eight have a turnover rate that is four times lower (Allen & Kelly, 2015, p. 471). This difference has guided the research to focus on professionals working with children ages zero through five. Going forward, these professionals are referred to as early childhood teachers, or teachers for short.

Teacher turnover research includes its relationship to multiple factors, resulting in multiple studies further explored in Chapter Two. In summary, turnover is related to age of the professional (Carver-Thomas & Darling-Hammond, 2017; Ingersoll & May, 2011), length of time in the profession, length of time at the center, burnout (Fleming, Mackrain, & LeBuffe, 2013; Mansfield, Beltman, Broadley, & Wetherby-Fell, 2016; Welde, C. M., 2017), benefits/insurance (Russell, Williams, & Gleason-Gomez, 2010), education/training of early childhood professionals (Park-Jadotte et al., 2002; Whitebook & Sakai, 2003), the center director (Carver-Thomas & Darling-Hammond, 2017; Russell, Williams, & Gleason-Gomez, 2010); job instability (Allen & Kelly, 2015) and teaching co-workers (Allen & Kelly, 2015; Whitebook & Sakai, 2003). It is most commonly linked to inadequate compensation (Allen & Kelly, 2015; Hall-Kenyon, Bullough, MacKay, and Marshall, 2013; Park-Jadotte et al., 2002; Whitebook & Sakai, 2003), causing researchers and professionals to recommend increasing early childhood educator compensation to improve retention.

Three avenues to increase compensation include increasing family payments, increasing public investment, or reducing other expenses of the center to free up cash flow. These solutions involve those beyond both the individual early childhood teachers and the individual centers. Solutions beyond the individual and those the individual interacts with daily take longer to attain. This could be why researchers and professionals have been advocating for a change for almost three decades and are assessing higher compensation is still needed (Whitebook et al., 2014).

Research that focused on defining and testing what impacts teacher turnover has found several ecological systems related to turnover. Ecological systems are defined by theorist Urie Bronfenbrenner and explained in the conceptual framework section of this chapter. Theorist Bronfenbrenner theorizes five ecological systems, from the microsystem that includes people and environments closest to the child, through the chronosystem, which reflects how time impacts the development of a child. The depth of research that has focused on one or more of these systems results in a myriad of causes and possible solutions. This leaves researchers, professionals, and lawmakers wondering which cause to focus on, with a goal of producing the greatest improvement. The focus of this research includes a desire to add to the prior research, better informing what researchers, professionals, and lawmakers can do to reduce teacher turnover.

Conceptual Framework

For this research, teacher turnover is examined from an ecological perspective. Theorist Urie Bronfenbrenner's ecological model provides a framework for an individual, like a child, that can be applied to the ecology of a center. The following provides a review of Bronfenbrenner's ecological model with an individual at the center.

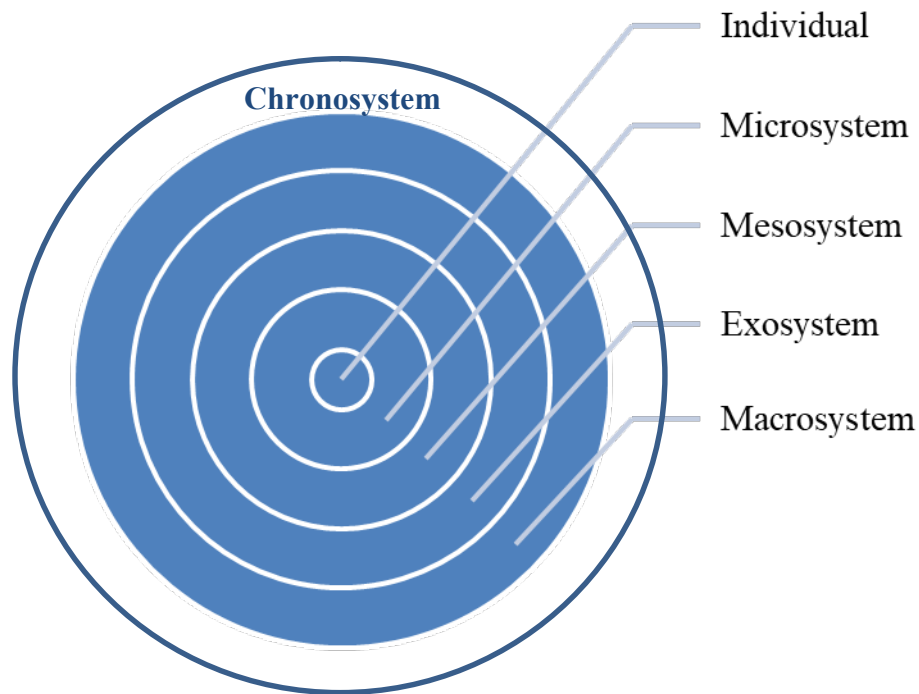


Figure 1. Bronfenbrenner's Ecological Model is based on *Ecological Models of Human Development* by Urie Bronfenbrenner (1994).

Bronfenbrenner's ecological model. Figure 1 depicts the individual at the center of Bronfenbrenner's Ecological Model. This visual also depicts Bronfenbrenner's four initial systems: the microsystem, the mesosystem, the exosystem, and the macrosystem. Bronfenbrenner later added a fifth level, called the chronosystem. While the individual is directly touching the microsystem, all systems have an impact. These systems interact like nesting dolls, with the system closest to the individual having the greatest impact.

The microsystem includes a variety of individuals and settings. These are defined as those an individual interacts with on a daily basis. For example, it is those living in the home, attending school, or attending a religious institution that the individual attends.

The mesosystem is not specific to individuals or institutions. It is representative of the impact on the individual when an interaction occurs between two of the individual's microsystems. An example includes when an adult in a child's home interacts with an adult in a child's early childhood center. "In other words, a mesosystem is a system of microsystems" (Bronfenbrenner, 1994, p. 40)

The exosystem includes "the linkages and processes taking place between two or more settings, at least one of which does not contain the developing person, but in which events occur that indirectly influence processes within the immediate setting in which the developing person lives" (Bronfenbrenner, 1994, p. 40). For example, the co-workers of a household member of a child are part of the child's exosystem. If the workplace for the family member becomes stressful due to a shortened deadline, that has an impact on the home and also the child.

"The macrosystem may be thought of as a societal blueprint for a particular culture or subculture" (Bronfenbrenner, 1994, p. 40). It reflects the overarching society, including state and national laws, media, and the myriad of cultures that impact the individual. For example, the workforce shortage that is occurring in the U.S. at the time of this writing impacts business and government support to educate, recruit, and retain a high quality workforce.

"The chronosystem encompasses change or consistency over time not only in the characteristics of the person but also of the environment in which that person lives" (Bronfenbrenner, 1994, p. 40). The amount of time is not designated in hours, days, or years. Instead, it is defined as a change in a situation or events. For example, over time in the U.S. more homes are in need of high quality early childhood education. Research

through the chronosystem would further explore the driving forces or changes that has created the need for high quality early childhood education sites. It has been attributed to the increase of women entering the workforce, the focus on school readiness, and the change in economy. More broadly, research has provided evidence for the value of investment in high quality early childhood education, including the focus on the plasticity of the brain (Center on the Developing Child, 2009). The use of this data over time has resulted in greater investment in high quality early childhood education in both the United States of America. This theoretical understanding underpins a literature review with three main findings.

Main findings in research. Chapter Two contains a thorough review of literature related to the research topic. The review results in three main findings: the center director has an impactful role on those in the ecological system of a center; a center setting is representative of research related to stress, resilience, and program quality; and use of the Devereux's Adult Resilience Survey (DARS) (The Devereux Foundation, 2013) and Devereux's Resilience Leadership Survey (DERLS) (The Devereux Foundation, 2016) by early childhood teachers and center directors supports awareness to positively impact resilience, self-agency, and self-efficacy which can support resilience development of children.

The first main finding will summarize the center director's impactful role. It highlights research demonstrating the center director impact on various ecological systems of the child and center. Research is further summarized to demonstrate the value of including the center director in research to reduce limitations. A summary of research recommended qualification for a center director, including whether a midwestern state

requires the recommended qualifications and what support is available to center directors to attain the qualifications, is provided. The finding concludes by summarizing multiple leadership theories to guide the work of the center director.

The second main finding begins with a research summary on the stress, adversity, and challenges that center directors and teachers experience. Building on that knowledge, it continues to highlight research that focuses on resilience and education. It concludes with a summary of early childhood program and classroom quality measurement tools and the researcher's thought process to connect them to items in the DARS and DERLS.

The third main finding begins with a summary of research on how resilience development is impacted by interactions with an adult outside the home. It builds to connect Bandura's theory of self-efficacy, Bronfenbrenner's theory of self-agency, and resilience research. It concludes by highlighting how research-based classroom and school strategies used to create environments that build resilience reflect the areas of the DARS and DERLS.

Gaps in the research. The research review also highlights gaps in the research. While research demonstrates the impact of the center director, there is a gap in research summarizing whether center directors have research recommended qualifications, are implementing researched leadership theories, and if there is a difference in center director and teacher perspective on a center director's implementation of researched leadership theories. This research is designed to address some of these gaps.

There are also gaps in research related to what center directors and teachers experience in relation to stress, resilience, and program quality. For example, since this study took place during a pandemic, centers had various program implementation models

including offering no programming, virtual programming, in-person programming, or a combination of virtual and in-person programming. This study gathered what the program model implementation was and analyzed the responses for its impact on resilience. It also includes a focus on resilience in child care settings, which is different than public kindergarten through twelfth grade settings. Lastly, it compares program quality information to adult resilience and resilient leadership practices which is currently a gap in research.

Another gap in current research that this study will address is the value of using the DARS and DERLS to relate to other areas of individual and program improvement. There is also a gap in understanding how adult resilience and resilient leadership practices relate to each other. A study that examines this relationship may provide ability for center directors to improve the resilience of high quality early childhood teachers so they can then improve the resilience of children. There is a gap in knowing how adult resilience and resilient leadership practices impact turnover, or a professionals' anticipation to stay in a current role or current center. This research seeks to address those gaps.

Problem Statement/Research Question(s)

This research explored the relationship between adult resilience of center directors and teachers, resilient leadership practices at centers, and turnover of teachers who are working with children from birth through age five. In order to do this, individual and center-wide data were gathered. Individual information was gathered from each participant, and center-wide information was gathered from the center director. Figure two provides a depiction of the data that was gathered and from whom.

Administrator Completes	Personal Descriptive Questionnaire
	Personal Adult Resilience Survey
	Resilient Leadership Survey
	Center Census, Including Turnover
Teacher Completes	Personal Descriptive Questionnaire
	Personal Adult Resilience Survey
	Resilient Leadership Survey

Figure 2. Data gathered and analyzed in relation to the research question.

The researcher developed personal descriptive questionnaire included data like age, number of years in the early childhood profession, number of years employed at the center, compensation, and highest level of education. The Personal Adult Resilience Survey is the DARS (2013). It was adapted to be quantitative on a six-point scale. The DERLS (2016) was also adapted to be quantitative on a six-point scale for all participants. It was further adapted for teachers to make the question stems from the teacher perspective rather than the center director perspective. Gathering responses from both the center director and early childhood education teachers allowed the researcher to assess for relationship, which helped measure the reliability of the directors' self-reported assessment (Boeddeker, 2010; Gase et al., 2017; Jorde-Bloom, 1988;). Studies that compare teacher and administrator perspectives are reviewed in Chapter Two. Turnover

data by program were also gathered through researcher developed questions. This included model of programming, total paid teacher positions working ten or more hours a week, and various ways to report turnover information.

Some researchers have focused on at-risk populations when studying resilience (Doll, 2013) based on the belief that “Individuals are not considered resilient if they have not faced and overcome significant adversity considered to impair normal development” (Goldstein & Brooks, 2013, p. 8). Other researchers have not isolated participants to only include those at-risk, defining resilience as a “person’s capacity to overcome stress or adversity” (Cohen, 2013) and recognizing that all people experience challenge and risk. Another reason researchers have included both participants that are at-risk and those that are not is a participant may not have a situation that would not meet the definition of at-risk at the time of research, but may prior or post research (Brooks, 2013).

This research focused on participants working in a high demand, low compensation profession. The participants are also from an urban area of a Midwestern state in the United States of America. The data were gathered during a pandemic, when participants were doing their work with safety protocols including social distancing and mask wearing while caring for children during a critical period of their development. In addition, the area represents a community that experienced higher COVID-19 cases than other areas in the state and a large percentage of residents represent a community that has been racially marginalized for hundreds of years. More information regarding the adversity this population has experienced is in Chapter Two.

This research does not include gathering data specific to children. This is mainly due to the limitation of resources accessible to the researcher. While this research does

not gather data specific to children, it does use tools that have been built from a focus on children. Devereux's Advanced Behavioral Health's Center for Resilient Children's mission is to promote protective factors and strengthen resilience for all children and the adults who support them. The Center has built its work over time, starting with children, moving to adults, and the latest tool is for resilient leadership. This research uses the two tools developed by Devereux to assess adult resilience and resilience leadership practices.

The researcher hypothesized that centers where the resilient leadership is higher would have higher adult resilience. Centers with either higher resilience leadership or higher adult resilience would have lower turnover. The purpose of this study was to learn if there was a relationship between teacher turnover, adult resilience (for the administrator and teachers), and resilient leadership (assessed by the administrator and teachers).

Significance of the Study

The learning from brain development research has lawmakers, business owners, parents, researchers, and early childhood professionals focused on ensuring young children have positive environments, interactions, and experiences. Bronfenbrenner's ecological model informs settings young children frequent that have the greatest impact, including early learning programs. Research has found that at the base of the quality offered to children is a consistent quality teacher (Center on the Developing Child, 2016; Rhodes & Huston, 2012). There is a difference in the recommended high quality, stable early childhood workforce and the practice. One commonly research-cited reason is low compensation. Despite 30 years of efforts to increase compensation, it is still low, which

relates to turnover and a continuation of a difference between what is research recommended and what children experience.

In order to address this difference, professionals have to work in every ecological system of a program, which takes great resilience. Assessing the relationship between resilient leadership, resilience of early childhood teachers, and early childhood teacher turnover may provide a guide for researchers, professionals, and lawmakers in how to invest resources to improve young children's early education. This study is based on the hypothesis that improving early childhood professional resilience and resilient leadership practices has the greatest potential to impact the ecological systems of a center and, as a result, reduce teacher turnover. The findings will help researchers, policy makers, and professionals implement practices to reduce high quality early childhood teacher turnover, resulting in more consistent child-adult relationships.

CHAPTER TWO

OVERVIEW OF MAIN FINDINGS FROM PREVIOUS LITERATURE

The purpose of this research is to explore the relationship between teacher turnover, the individual resilience of the center director and teachers that work at least ten hours a week with children, and the resilient leadership practices in the center. The researcher hypothesized that centers with strong resilient leadership practices have strong adult resilience and high retention of high quality teachers. Retention of high quality teachers impacts the quality of the center, and the outcomes for the children in the center. The focus of the study and hypothesis are related to current research, which is reviewed in the following sections.

Search Strategies

Search strategies included exploring the Google Scholar and ERIC databases; reviewing literature in the Education Leadership Journal; and sourcing key books and publications written by theorists, government entities, and national organizations. As articles, books, and publications related to the impact of the center director, teacher turnover, and the resilience of early childhood professionals were reviewed, further searches were done to read the research cited in those documents. A few dissertations related to the impact of the center director on teacher turnover and the resilience of early childhood professionals were sources for research articles as well. Keywords included center director, early childhood leader, early childhood teacher, turnover, retention, burnout, and resilience.

Main Findings

Center directors have an impact on quality aspects of a center. Quality aspects as a focus for this research include those measured by the National Association for the Education of Young Children (NAEYC) Program Accreditation and Michigan's Great Start to Quality Rating System. Due to the impact of the center director on program quality, this section reviews research recommended qualifications for a director, attainment of those qualifications, and resources available to attain the recommended qualification. The research review also includes a focus on theories of leadership to guide the practices of center directors.

On a daily basis, a center director and teachers experience risk, adversity, and challenge which results in burnout. Resilience is a person's ability to overcome risk, adversity, and challenge and can be developed (Center for Resilient Children, 2020). The thought process of the researcher highlights the connection between resilience and areas of quality measurement tools.

High quality early learning programs can have a positive impact on a young child that lasts through adulthood. This finding connects with research noting the impact of an individual outside a child's home on the child's development with a focus on resilience. An early childhood teacher's individual resilience impacts their self-efficacy, as described by Bandura, and self-agency, as described by Bronfenbrenner. This research has supported finding protective factors that build resilience, and are measured by the DARS and DERLS.

Main Finding One: The Center Director has an Impactful Role.

Center directors, at the nexus of the microsystem of the center and other surrounding systems, should be a focus of study when exploring teacher turnover. The center director impacts the quality of a program yet was not required at the time of this study to have even one research recommended qualification (e.g. Bachelor of Arts in early childhood education). This limits their awareness of and ability to implement leadership theory.

The center director role impacts various ecological systems of the child and center. As presented in Chapter One, a center director connects with every person in the microsystem of a center as well as those in surrounding systems (Harrist et al., 2007). The following paragraphs demonstrate the center director through ecological models. The first demonstrates the center director as an individual, the second has the center director as part of the ecological system of a program, and the third highlights the impact of the knowledge/competencies of center director on others in a program.

Exploring the impact of the center director when placed as an individual in a program's ecological model. Figure 3 provides a visual of the ecological system with the center director as the individual. In this scenario, the child is part of the microsystem. The paragraphs that follow provide further detail regarding this model.

The microsystem of the center includes families, children, and staff. When there is a change in any one of these areas, for example a staff member resigns or a family no longer has children old enough to attend the program, the leader is impacted. The leader facilitates these changes, supporting the exit of current participants and welcoming new participants.

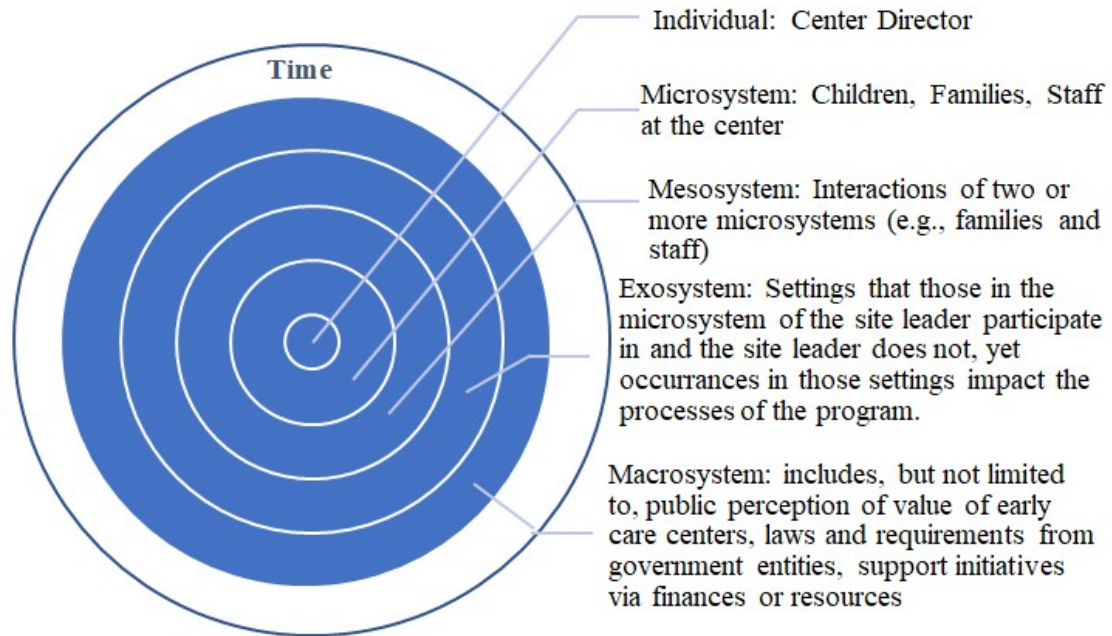


Figure 3. Center Director as Individual in Bronfenbrenner's Ecological Model is based on *Ecological Models of Human Development* by Urie Bronfenbrenner (1994).

The mesosystem includes the interactions children, families, and staff members have with each other that impact the center director. For example, if a family member and staff member have a desire to host a family event related to literacy, the center director has to assess if there is proper support and resources, as well as whether the event aligns with the program mission and purpose. For example, the center director needs to determine if the center has space, if food can be provided, and if the content is in-line with the curricular practices of the center. If there are resources the center does not have to move forward, the center directors goes beyond the microsystem to support the family and staff (e.g. space at a local community center, food donation from a local restaurant, or literacy materials from a local library).

The exosystem represents settings where the children, staff, and families from the program participate that do not involve the center director, yet events that occur in those settings directly influence processes within the setting. For example, a family paying tuition may lose a source of income, resulting in possible increase in stress or ability for the family to keep their child enrolled. A staff member may have unreliable transportation, impacting participation in the program that day and perhaps regularly. This impacts the families who are looking for a consistent person to connect with and staff who are looking for consistency with whom they work. To support consistency, the center director acknowledges the impact of the exosystem and puts plans in place to lessen the impact. For example, a small portion of tuition can be put into a savings portion of the budget to help provide a scholarship to a family for a period of time if needed. The director can hire a floating staff member who can step into a classroom when a regular teaching team member has an unexpected absence.

The macrosystem reflects legislation, requirements, resources, and cultural views that relate to the role of the director. A director may have to follow legislation regarding adult-child ratios, local requirements related to curriculum implementation, and be limited in funding due to state and federal resources. A director must be aware of the macrosystem requirements, and resources to meet those requirements. With this knowledge, a director determines how to implement resources to attain the highest level of quality, while advocating in the appropriate system for greater resources to maintain and grow quality.

The chronosystem reflects time. Early childhood leader roles of today have both similarities and differences from those in operation thirty years ago due to events that

have occurred over time. One similarity is that staff are still predominantly women (Whitebook, et. al, 2018) and are still advocating for an increase in compensation (Whitebook et al., 2014). A difference is greater evidence related to the positive impact of high quality early childhood care and education on brain development (Center on the Developing Child, 2009), including children in poverty (Campbell, et. al., 2012; Heckman, et. al., 2010), with a focus on school readiness (Campbell, et. al., 2012; Heckman, et. al., 2010). The increase in evidence, and awareness, has played a part in creating a greater demand from both families and lawmakers. To meet the demand, national, state, and local regulations have increased requirements and monitoring, often without comparable support for programs to do so. Site leaders today face the challenge to attain compensation for their teachers beyond minimum wage while meeting higher standards from families and lawmakers.

A linear model reflecting the impact and role of the center director. Through Bronfenbrenner's Ecological Systems Theory, one better understands the complexity center directors face to attain and sustain high quality teachers. One also better understands how directors are positioned to impact all ecological systems of the program.

The director has a direct impact with the three members of the microsystem: teacher, parent, and child. A difference occurs when the interactions with the exosystem and macrosystem are explored. The director has direct connection with representatives in the exosystem, like the social service professional. As a result, there is interaction through the mesosystem. In addition, the director interacts with those in the macrosystem, or society. For example, they inform, respond to, and are policy makers. "Policy makers legislate policy, and directors must act and interact with caregivers to see that the policy

is followed. And directors are the policy makers at their facilities” (Harrist et al., 2007, p. 325). As a result, the director must be aware of the macrosystem requirements for the site and establish site level policies to meet those requirements.

A center director has opportunity to make change in the program, including teacher turnover. In relation to how the center director is placed in the ecological system of a program, “the administration factor is the only one that significantly predicts teacher retention decisions after controlling for other school and teacher characteristics” (Boyd et al., 2011, p. 323). Chapter Eight of *Transforming the Early Childhood Workforce* (2015), a publication by the Institute of Medicine and National Research Council, also recognizes the role of the center director.

How the knowledge and competencies of a center director impacts other aspects of a program. Figure 4 is from *Transforming the Early Childhood Workforce*. The figure depicts the impact of both the knowledge/competencies of leadership/administrators and other aspects on the behaviors and actions of teachers, which impacts children.

Figure 4 makes clear a teacher with high knowledge, competencies and well-being may choose to leave a center if the knowledge/competencies of leadership/administrators adversely affects their work. In similar fashion, a teacher with low knowledge, competencies, and well-being may choose to leave a center even if the knowledge/competencies of leadership/administrator positively affects their work. The administrator/leadership at a center always has an impact on the teacher, whom always has an impact on child outcomes.

The role and impact of the center director warrants including them in research. Due to the impact of the director on the work of teachers, the director should

be included as a part of a study related to teacher turnover. Likewise, teacher perspective should be gathered when researching the impact of the director. The following paragraphs summarize studies on teacher turnover or retention, yet do not consider the director, and include how leaving out consideration of the director created limitations (Fleming, Mackrain, & LeBuffe, 2013; Park-Jadotte et al., 2002). This is followed by review of research that incorporates the center director. In addition, research related to the impact of including teacher perspective on leadership practices is reviewed.

Research without center director. Fleming, Mackrain, and LeBuffe (2013) reviewed research related to promoting the resilience of teachers. The review included common and unique stressors, effects of stressors, how stress impacts adult ability, programs promoting adult resilience, and the Devereux approach to fostering adult resilience. The review did not specify the role of the center director in relation to teacher resilience. This limited the results so that recommendations to change the resilience of the early childhood educator only related to the individual, rather than expanding to recommendations related to organizational conditions.

Park-Jadotte et al., (2002) “reviewed evaluations of federal, state, and local efforts ...” that rewarded further education and training with compensation. An effort included in this study is the T.E.A.C.H. (Teacher Education And Compensation Helps) Early Childhood Project, which is implemented in several states including Michigan. Indicators measured included staff turnover, income, and education without including the impact of the center director. Not including data on the center director (e.g., length of time center director was in role) and how that data related to other data points limited the study. As a

result of this limitation and others, researchers were not able to do a meaningful comparison and instead provided a summary of the findings from each program.

When assessing the value of including a center director in research related to teacher turnover it is important to review both research on the topic that did and did not include the center director. The preceding research reviewed did not include data for the center director. The following summarizes studies that included the center director.

Research including center director. Russell, Williams, and Gleason-Gomez (2010) implemented a pilot study to determine whether the teachers' age, perceptions of fair pay, receipt of employer-sponsored health insurance, and administrative support, as operationalized by the Competing Values Framework (CVF), predicted antecedents of turnover. Seventy eight teachers who were employed full time at an early childhood center in good standing with the Texas Department of Family and Protective Services in central Texas participated. Centers were randomly selected and teachers were given the option to participate if the center director agreed to offer the opportunity. Teachers learned more about the study through a group meeting that the center director did not attend. Teacher anonymity was further protected through the gathering of surveys in a concealed box at the center. Dependent variable data were gathered by asking participants four questions from the Early Childhood Work Environment Survey (ECWES). Eleven independent variables included three questions from the ECWES (age, fair pay, health insurance) and eight areas of the CVF. Data were analyzed various ways including mean, binary logistic regression, Wald statistics, Odds Ratios, and linear multiple regression.

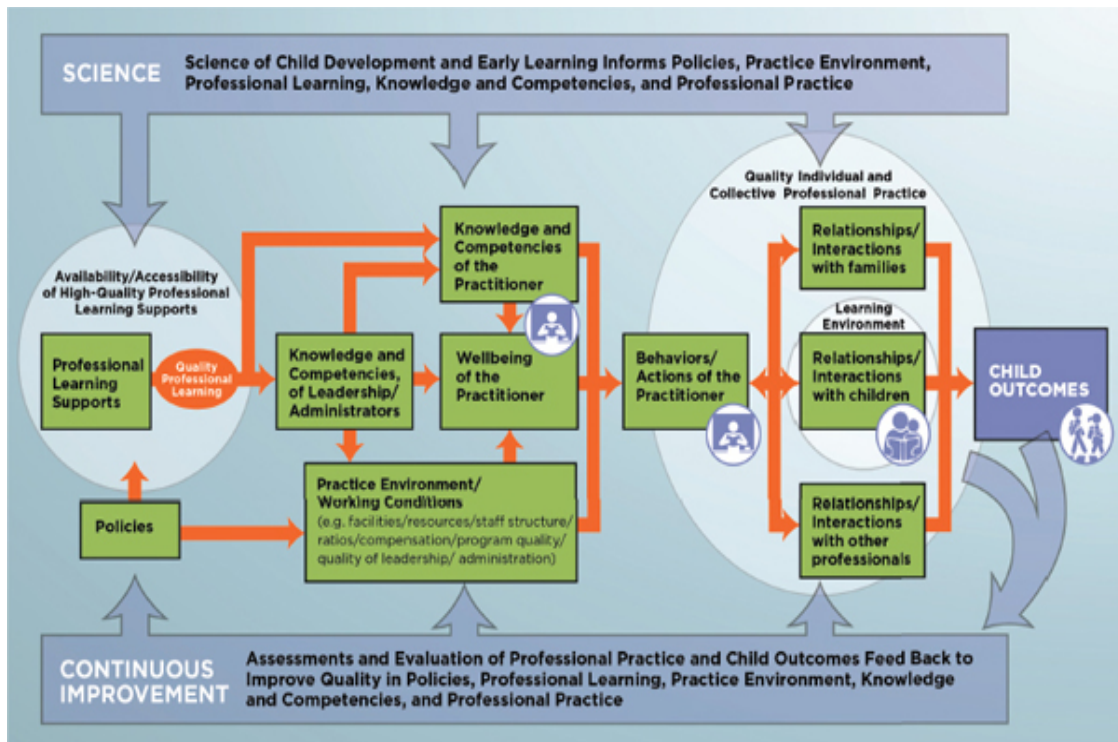


Figure 4. Factors that contribute to quality professional practice and ultimately to improve child outcomes.

Note. From *Transforming the Workforce for Children Birth Through Age 8: A Unifying Foundation* (p. 359), by L. A. Editor and B. K. Editor, 2015, Washington, DC: The National Academies Press. Copyright 2015 by the National Academy of Sciences. Reprinted by permission.

Results indicated that teachers' thoughts of leaving their current job were significantly related to employer sponsored health insurance and perceptions of directors' coordinating skills. Perceptions of fair pay also predicted teachers' thoughts of leaving their current job. A teacher's commitment to a center is also significantly predicted by perception of a director's coordinating skills and receipt of employer sponsored health insurance. Job tenure could be predicted by four independent variables: teacher's age, perceptions of fair pay, perception of director's coordinating skills and perception of

director as a broker. As a result of including a focus on the center director, the results go beyond compensation and benefits to find the center director has an impact on turnover.

Carver-Thomas and Darling-Hammond (2017) researched why teacher turnover matters and what can be done to decrease turnover. The primary source of data is the U.S. Department of Education, National Center for Education Statistics Schools and Staffing Survey (SASS) from 2011-2012 and Teacher Follow-up Survey (TFS) from 2012-2013. The methodology included descriptive statistics and differences of means to test results to identify differences in turnover rates across teacher and school characteristics. A logistic regression model was then used to examine the relationship between teacher turnover and a series of school characteristics, teacher characteristics, and eight workplace conditions. One of the eight workplace conditions was administrative support.

Following dissatisfaction with assessment and accountability issues, dissatisfaction with administrator support was the most noted reason for turnover. Administrative support was a construct that measured teacher attitudes on four questions about their administrator on a scale from 1 to 4 where 1 is most favorable and 4 is least. The level of impact of the administrator would not have been found if items related to the administrator were not included in the research. These studies represent the value in including a focus on the center director, and the following section explores the value of including the perspective of the teacher.

Paula Jorde-Bloom (1988) was interested in learning whether center directors and teachers rate the center they work in the same, or different. To answer this question, 629 individuals working in either for-profit or non-profit state licensed centers at least 20 hours a week completed the ECWES. Of the study participants, 94 were in administrative

positions and 535 were in teaching positions. Participants also completed a questionnaire to gather information on their level of education, years of experience in the field, number of years in their current position, hours of employment, and salary range, and these variables were used for quantitative analysis. The survey data also included questions related to professional orientation that was quantified for analysis and included involvement in professional organizations, how frequently they attended outside workshops and conferences, number and type of educational journals or magazines they read, and whether they considered their position a career or just a job.

Analyses of variance found a statistically significant difference in administrator and teacher center climate rating in all ten dimensions of the ECWES, with 8 of the dimensions having a statistical difference at $p < .01$. A separate analysis was done only including full-time employed administrators and teachers, and in all dimensions, the differences were even stronger. This finding supports the need to gather and compare teacher and administrator data when measuring an item that is both individual and center-wide, like resilience.

In 2017 Gase et al. wanted to study the relationship between student outcomes and the school climate results from students, staff and administrators. Data from the 2014-2015 school year were gathered from three sources: California Healthy Kids Survey, completed by 7th through 12th grade students; California School Climate Survey, completed by teachers; and California Department of Education survey, completed by administrators. Multilevel linear regression was used to analyze the data. Gase et al, (2017). noted:

Four multivariable models were developed to examine the association of each outcome with: student-reported measures of climate as measured by student and school-level measures of engagement and safety (Model 1); staff-reported measures of climate (Model 2); administrative measures of climate (Model 3); and student-reported, staff-reported, and administrative measures of climate (Model 4) (p. 323).

Models two and three did not include student engagement and safety whereas models one and four did.

Gase et al., (2017) found weak correlation between student, staff, and administrator school climate results. There was strong association between student climate results on engagement, safety and student outcomes. School teacher and administrator climate results note little association with student outcomes. This demonstrates benefit in also gathering student outcomes and input in relation to an area that impacts an entire school, like resilience. For the purpose of the present study, the researcher did not include the student and recommends other researchers consider this as they develop their studies.

Boeddeker (2010) also researched whether teachers and administrators rated school climate items differently. Her participants included only special education teachers and their principals, with 29 teachers and 62 administrators completing a survey. Their results differed from previous studies. That is, they found no significant difference between special education teacher and principal results. Boeddekker's finding that teachers and administrators align on their assessments of school climate could cause a researcher to diminish the value of gathering both perspectives. It is also possible that the lack of significance was due to a small sample size. Future research will benefit from gathering both teacher and administrator perspectives to further support the lack of

significant difference as Boedekker found, or that there is significant difference as Jorde-Bloom (1988) found.

Figure 5 depicts the impact of a director on program quality components.

Research has explored a variety of program quality factors related to strengthening child outcomes (Wechsler, et al., 2016; Zaslow & Maxwell, 2014; Zaslow & Tout, 2014).

Three factors researched include teacher-child interactions, family engagement and curriculum implementation.

The Learning Policy Institute published a brief summarizing the research findings of programs demonstrating positive child outcomes and standards for professional practices and qualifications, with a focus on factors contributing to meaningful adult-child interactions (Wechsler, et al., 2016). Their findings of important elements of high-quality early childhood education programs include “Appropriate class size and teacher student ratio...[to facilitate] high-quality interactions between teachers and children” (p. 3), “Meaningful family engagement” (p. 2), “Comprehensive early learning standards and curricula” (p. 1), and “Appropriate child assessments” (p. 1).

The NAEYC published a third edition of *Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth through Age Eight* (Copple & Bredekamp, 2009). These guidelines for developmentally appropriate practice include five items. They are (1) creating a caring community of learners, (2) teaching to enhance development and learning which relate to adult-child interactions, (3) planning curriculum to achieve important goals, (4) assessing children’s development and learning, and (5) establishing reciprocal relationships with families (p. 16 - 23). While adult-child interactions, curriculum and assessment, and family engagement are classroom

implemented quality factors, they are more often attained when supported by the director. A director's ability to support high quality factors is impacted by the accessibility of high-quality professional learning supports (Institute of Medicine and National Research Council, 2015, p. 364).

Research recommended qualifications for a center director. Allen and Kelly (2015), editors of *Transforming the Early Childhood Workforce*, recommend an early childhood professional attain an undergraduate degree in early childhood education, at the Bachelor's level, with specialized coursework in line with the role of the professional (2015, pp. 509-511). In the case of the director, this includes coursework in program administration and leadership, which Michigan's Child Care Licensing's Rule Book also requires (Michigan Department of Licensing and Regulatory Affairs, 2019).

To support awareness of each state's current ability and support needed to meet the qualification recommendations, Abel, Talan, and Newkirk published a *Closing the Leadership Gap* report in 2017. In the report (2017), Abel et al., translated the research recommendations from *Transforming the Early Childhood Workforce*, the into five components: (1) Administrator qualifications in Child Care Licensing; (2) Administrator credential; (3) Principal licensure; (4) Administrator qualifications in quality rating and improvement systems (QRIS); and (5) Administrator qualifications in state pre-k programs. Components one, four, and five refer to U.S. and state requirements. A child care licensing qualification requirement in a state may be different than that required by the state's QRIS, which may be different than that required by the state's pre-k so each needs its own rating. Components two and three refer to programs that provide a research

recommended qualification like Michigan's central office certification program for kindergarten through twelfth grade professionals offered by universities.

Abel et al. (2017) determined the highest score the U.S. or a state can receive is ten. No state scored higher than six (p, 5), which relates to the name of the report: *Closing the Leadership Gap*. One area all states have as an opportunity for growth is parity between early childhood education and K-12 education qualification offerings. At a national level, there are 27 times more elementary principal graduate degree programs than early childhood education leadership degree programs (Abel et al., 2017). The report notes a growth in programs for early childhood leadership, which is evidence that states are working to address the parity issue.

The score for the state of Michigan is two out of ten. A lever of strength is Michigan's QRIS, named *Great Start to Quality* (GSTQ). To attain the highest amount of points in GSTQ, a center program leader needs to have a Bachelor's degree or higher with a major in Early Childhood Education or Child Development and two credits in child care administration (Great Start to Quality, 2016).

There are two levers with the greatest opportunities to grow: (1) administrator credential due to Michigan not having one and (2) administrator qualifications in state pre-k because there is not a principal endorsement requirement for school based programs or an administrator credential requirement for center based programs. Out of all 50 U.S. states, Michigan and 22 other states do not have any points related to an administrator credential. Michigan and five other states do not have any points related to administrator qualifications in state pre-k. This highlights the difference between research recommended qualifications and requirements to attain them.

Many center directors step into the position from a teaching role (Catron & Groves, 1999), meaning they have a teacher qualification rather than an administrator qualification. Due to minimal qualification requirements set by the state, program leaders often attain research recommended qualifications voluntarily. Attainment of the qualification is dependent on the resources of the individual and microsystem of the program. In the exosystem, to support program leaders in attaining a research recommended qualification, Michigan offers the T.E.A.C.H. scholarship program. T.E.A.C.H. scholarships significantly reduce the financial cost of attaining a degree (T.E.A.C.H. Early Childhood Michigan, 2019). While T.E.A.C.H. reduces the cost of tuition and books, it does not compensate for all the time it takes to attend class and do school work, so it is not a solution for all. As a result, there are directors who do not have research recommended qualifications.

Review of leadership theories to guide the work of a center director. The difference between research-recommended director qualifications and requirements limits directors. For example, directors are less aware of leadership theory that research has found to positively impact teacher retention. Incomplete awareness can result in narrow understanding and ability to implement leadership theory as well. A director who has a research recommended qualification understands there are a multitude of leadership application theories to guide the practices of center directors. The following section focuses on five of those theories and reference the impact on teacher retention.

Pedagogical leadership. Research related to schools serving children from kindergarten through high school often refer to instructional leadership. Early childhood educational settings include a heavy focus on family engagement. To reflect this, the

McCormick Center adopted the term pedagogical leadership to describe the program leader's work in instructional leadership and family engagement (Abel, Talan, & Masterson, 2017).

Another national, research-based tool that includes pedagogical leadership is the Early Essentials Framework (2019). The Early Essentials Framework evolved from the five essentials framework and K-12 essentials survey. It measures six areas, three that relate to pedagogical leadership. The three areas include instructional leadership, parent voice, and involved families. The Early Essentials framework defines effective instructional leaders as, "...strategically focused on children's development and early achievement [who] nurture trust, collective understanding, and responsibility for excellence and improvement among *staff and families*" (Pacchiano, Wagner, & Lewandowski, 2019, p. 27).

The research of Robinson, Lloyd, and Rowe (2008), "suggests [that] the more leaders focus their relationships, their work, and their learning on the core business of teaching and learning, the greater their influence on student outcomes" (p. 636). This conclusion was made based on a review of literature that compared instructional leadership, transformational leadership, and the five leadership dimensions. The review also found a need for research and practice to more closely link to effective teaching and effective teacher learning. While the research in Robinson et al. study does not directly measure effective teaching and effective teacher learning, it does summarize the research connecting the impact of burnout on teaching practices and the role of resilience in preventing burnout in a later section.

Distributed leadership. Distributed leadership theory is one model of shared leadership. There are many practices to implement distributed leadership. Most have two common aspects: (1) leadership is a shared process with many individuals and (2) essential skills and knowledge are dispersed among the group, causing leadership to naturally emerge from interactions of the individuals, (Johnston, 2015, p. 40). The increase in scope of work for center directors without an increase in funding to complete the additional work has resulted in greater research about and implementation of distributed leadership theory. For example, early childhood centers in Michigan have the requirement to meet child care licensing requirements. Those in areas serving families in need also need to implement requirements to attain state and federal funding. For example, a site receiving funding to implement the states prekindergarten program have to have all of their staff entered into a professional registry system, submit site information and be evaluated to attain a state quality rating that is three to five stars, and apply for the Child and Adult Care Food Program. Several of these programs have chosen to have their educators involved in meeting some of these requirements like ensuring they have all of their paperwork in the professional registry system and request to be connected to the site or gather child eligibility information for the Child and Adult Care Food Program.

In 2013, the National School Climate Center (NSCC) published eleven issues of practice briefs with a focus on sustaining a quality educational climate. Of the multitude of topics that could be covered to establish guidelines for high quality and positive character schools, NSCC included an article on shared leadership, another term synonymous with distributed leadership. Hughes and Pickeral note, “When teachers are

included throughout the decision-making process, they are more likely to implement and sustain change with fidelity to quality practice” (p. 27, 2013).

Transformational, transactional and resilient leadership. Transformational leadership theory was introduced by James MacGregor Burns in 1978 in *Leadership*, where he defines the behavior of a transformational leader as someone who engages with staff and inspires them to new levels of energy, commitment, and moral purpose (Burns, 1978). Transactional leadership is summarized as “a transaction in which followers’ needs are met if their performance measures up to their explicit or implicit contracts with their leader” (Bass, 1985, as cited in Dartey-Baah, 2015). Resilient leadership theory is broader in its scope than either transformational or transactional leadership theory, making it more difficult to define in a sentence. Researchers of this subject have chosen instead to focus on defining the theory by the characteristics of organizations, called resilient organizations. “A resilient organization as one that is: [...] able to sustain competitive advantage over time through its capability to do two things simultaneously: deliver excellent performance against current goals; and effectively innovate and adapt to rapid, turbulent changes in markets and technologies” (Robb, 2000, as cited in Dartey-Baah, 2015, p. 27).

In 2015, Dartey-Baah measured the value of focusing on resilient leadership theory implementation in comparison to implementing aspects of transformational and transactional leadership theory that research has found to have positive impact. In his research, he found resilient leadership theory shares characteristics in common with both transactional and transformational leadership theories. He concludes that rather than introduce a new leadership theory, leaders should implement practices that are in both

transformational and transactional leadership theories which he summarizes as, “transformational leadership” (2015). What Dartey-Baah does not take into account is the focus on developing resilience in children and educators. This dissertation does, which is what led the researcher to focus on resilient leadership practices. This will be further explained under the second main finding later in this chapter.

Implementation of leadership practices, based on research-recommended leadership theories, is a skill that strengthens the work of center directors. There are numerous leadership theories, and studies related to those theories, to inform the practices of center directors. With a goal of building the resilience of staff, so that they can build the resilience of children, research has found value in implementing resilient leadership practices. There is likely a challenge for center directors to do this in a state that is lacking requirements and support to attain qualifications recommended by the *Transforming the Early Childhood Workforce* publication (2015).

Summary of the role and impact of the center director. The center director is at a nexus point, being a part of the microsystem of the center as well as the liaison between the center and surrounding systems. Transforming the Early Childhood Workforce recognizes the unique role of a director, recommending they have the base early childhood qualification as well as specialization in administration. The McCormick Center has found a difference between research-recommended qualifications, required qualifications, and resources to attain a research recommended qualification. This creates variability in director qualifications and practices, resulting in variability of implementing leadership theories.

Main Finding Two: Research Related to Stress, Resilience, and Program Quality

On a daily basis, center directors and teachers experience risk, adversity, and challenge, which are factors related to burnout. Resilience can be developed, which can prevent burnout and improve teacher retention. The researchers' thought process relates adult resilience, resilient leadership, and center quality measurement areas to hypothesize the relationship between resilience, program quality, and teacher turnover.

Center director and teacher experiences with stress, adversity, and challenge.

Factors related to burnout are experienced by center directors and teachers on a daily basis. These factors are related to risk, adversity, and challenge. The following explores the stress related to compensation and benefits, classroom climate, and workplace support including the center director and co-workers.

Compensation and benefits. From a review of about 30 articles about teacher well-being, Hall-Kenyon et al., (2013) note "Low wages have been a long-standing and serious problem in early childhood education affecting teacher turnover and job satisfaction" (p.155). The 30 articles were on the topic of well-being and the participating teachers were educating children ages three through five.

Park-Jadotte et al., (2002) also included the impact of compensation in their research related to building a stronger workforce. The researchers "reviewed evaluations of federal, state, and local efforts" that rewarded further education and training with compensation. Methodology included a literature review, interviews, and document collection. From the data summary demonstrated compensation initiatives were associated with increases in workers' incomes, retention, and education (p. 51). Another area affecting teachers' well-being is access to health insurance.

Teachers working with children ages birth through five often do not have access to health insurance through their employer (Russell, Williams, & Gleason-Gomez, 2010). A summary of this study is provided earlier in this chapter. In addition to the findings summarized earlier, researchers found health insurance is one of the variables that significantly predicted teachers' commitment to staying in their position. Health insurance also significantly predicted leaving a job.

The risk, adversity, and challenge that teachers and center directors face as a result of low compensation and limited access to insurance and benefits impacts program quality. With a focus on improving quality, 1,654 NAEYC members who work as educators serving children from birth to age eight completed a survey. Survey response analysis found "the vast majority of educators (80%) believe...that any major effort to increase quality will fail unless early childhood educators receive increased salaries and benefits" (NAEYC, 2017). The theory of action that relates how a focus on teacher resilience can help address this need is explained later in this chapter.

Classroom climate. The climate of a classroom is another aspect of the work of early childhood teachers and directors that can create risk, adversity, and challenge. To gain insight into the issue of turnover among Army child-development center directors working outside the continental United States military centers, Welde (2017) interviewed eight directors and three child development services coordinators. Twelve years later interviews were conducted with two directors and one child/youth services coordinator from the original sites; all located within a 60-mile radius from the Kaiserslautern Military Community. Interview responses were coded and analyzed, resulting in the emergence of five themes related to the nature of the work, what aspects of the work

environment impact director decision to stay in their position, and what aspects outside the work environment impact director decision to stay in their position. The five themes are: no typical day: demanding, fast-paced, stressful, long, busy day; the challenge of staffing; for the love of working with children; creating a center: relationships with staff and parents; and sources of support (p. 122). The first two themes were referenced to the nature of the work.

The research review of Fleming et al. (2013) is summarized earlier in this chapter. Their review includes common and unique stressors experienced by teachers. In this section of the review, they note that in 2010, one-third of parents reported their stress levels were extreme and were living with stress levels that exceed their definition of healthy. They relate this to representing teachers due to some teachers being parents. In addition, they note the stress of teachers due to administrative demands, including excessive paperwork and severe time constraints. Effects of stressors on teachers include poor physical health and mental health problems that impact their work and lead to burnout.

Mansfield et al. (2016) studied what causes educators to stay in their position. The rationale for the research included acknowledging that the work of an educator is challenging and could result in burnout. As a result, Mansfield et al. focused on resilience by reviewing 69 articles and 2 book chapters. This qualitative study included three phases of data analysis. First was to identify keywords, aim of the paper, methodology, participants, data source(s), resilience related factors discussed, key findings and implications for teacher education. Next the resilience-related factors were words were grouped into like groups. The third phase included using QSR International's NVivo 10

software to code text. Findings include identifying 51 resilience factors that were grouped into four areas: (1) personal resources, (2) contextual resources, (3) strategies, and (4) outcomes. The outcomes also include implications for teacher education and what teacher education experiences help build resilience.

Classroom climate is also related to the work of Walter Gilliam. In 2005 his research analyzed expulsion rates for prekindergarten through twelfth grade students. He found the expulsion rate of preschool children is 3.2 times greater than that of K-12 students. Preschool teachers stated they expelled children because of their challenging behavior. Gilliam found “The teacher’s level of self-reported job stress also was related significantly to the likelihood of expelling, and contributed to the prediction of expulsion even when class setting, size, and student age were controlled” (Gilliam, 2005, p. 2). If teacher stress is up, then the children’s behavior is reported as challenging. Children behaving in ways that are perceived as challenging increases teacher stress, which increases the perception of behavior as challenging, demonstrating a stress-behavior cycle.

Self-efficacy. Research has also found a cyclical relationship between teacher self-efficacy and children’s behavior. Theorist Albert Bandura identified four main sources of self-efficacy: performance accomplishments, vicarious experience (modeling), verbal persuasion, and emotional arousal (Bandura, 1977, p. 80). These four areas are impacted by both classroom climate and workplace support. The next two paragraphs summarize studies relating teacher self-efficacy to the behavior of children in the classroom.

To explore the relationship between classroom climate with a focus on disturbances, teacher self-efficacy, and emotional exhaustion, researchers gathered data from teacher candidates in Germany who had finished their coursework and were beginning their field work. Teacher candidates completed the Maslach Burnout Inventory (Maslach, Jackson, & Leiter, 1996) to measure emotional exhaustion, the Teachers Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) to measure self-efficacy, and a scale developed by Baumert et al. (2008) to measure classroom disturbances. “The results imply that higher self-efficacy in classroom management is related to fewer classroom disturbances, which are positively related to emotional exhaustion” (Dicke et al., 2014, p. 7).

Gebbie et al. (2011) also explored the relationship between teacher self-efficacy and children’s challenging behavior. This study found that teachers with higher self-efficacy had fewer challenging behaviors. Increased challenging behaviors were associated with decreased self-efficacy. The study also found that teachers working with children who exhibit challenging behaviors experienced increased self-efficacy when they were supported with both professional learning and involvement in a professional learning community of other teachers working with children exhibiting challenging behaviors. Professional learning and involvement in a professional learning community of other teachers working with children exhibiting challenging behaviors is a support that a workplace could provide, relieving some of the classroom climate factors creating burnout. The following paragraph summarizes research on the early childhood workplace.

Workplace support. Lack of workplace support is also a challenge that could lead to director and teacher risk, adversity, and challenge (Welde, C. M., 2017). To understand the dynamics of the early childhood workplace, Paula Jorde Bloom developed The Early Childhood Work Environment Survey (ECWES). The ECWES includes ten dimensions: collegiality, professional growth, supervisor support, clarity, reward system, decision making, goal consensus, task orientation, physical setting, and innovativeness. Karen Appel-Drazin (2016) used this tool to investigate the relationship of the work environment, including leadership characteristics, to teacher retention.

Appel-Drazin recruited 150 teachers and 30 center directors from centers not affiliated with the public schools, located in a major Midwestern city, and either NAEYC accredited, in the process of NAEYC accreditation, or supervised by an agency with other early childhood centers that had NAEYC accreditation. Participants completed the ECWES voluntarily online. Descriptive analysis of responses was completed to find the means for the 10 dimensions and other quantitative measures including length of time in the profession, length of time working at the current center, and age of respondent. The Pearson product moment correlations were conducted to analyze the relationship of the dependent variable scores of the 10 dimensions and the independent variables of length of time in the profession and at the center. Other analysis included a two-way chi-square to examine the relationship between the variable of support and feedback from the dimension of supervisor support and the variable of commitment to the center from the Work Attitude section. The final analysis was a *t*-test for independent variables to determine the differences between the levels of the independent variable.

Appel-Drazin found “the *t*-test results of the dimension of Supervisor Support were higher for the committed group than the non-committed group and again provide an additional indication of the importance of support that teachers seek from their leaders” (p. 108). Supervisor support is defined as the degree of facilitative leadership providing encouragement, support, and clear expectations (Bloom, 2016, p. 49). Supervisor support impacts co-teacher relationships which is another research supported reason that teachers leave their positions, (Allen & Kelly, 2015, p. 471; Whitebook & Sakai, 2003).

Whitebook and Sakai (2003) examined occupational instability among child care center staff. In 1994, 92 centers participated in the study; a target group of 55 centers were seeking NAEYC Accreditation and an additional 37 were not seeking accreditation and were randomly selected and matched demographically as much as possible with the target group. The centers were located in California’s Silicon Valley and represented low, middle, and high income communities. Most of the centers operated with non-profit status and most operating fees were covered by parent payments. One director at each site was interviewed in 1996. One-hundred and fifty-seven classrooms in the 92 centers were observed in 1996 as well. The classrooms were preschool classrooms, so typically two classrooms from each center were included unless the center only had one preschool classroom. Whenever possible the same staff and classrooms were visited and interviewed as in 1994. The lead teacher was the one interviewed and observed, unless there was more than one teacher in the classroom. In a co-teaching classroom the teacher that assumed leadership was the one observed and both teachers were interviewed. Once the data were classified by staff current employment status in the centers the researchers explored differences between teaching staff who stayed and left their job and/or the field.

Analysis of variance, *t*-test, and chi-square analyses were used to compare professional and demographic characteristics of teaching staff and directors and identify factors associated with stability and instability of personnel. Discriminant function analysis was used to predict group memberships in relation to different education levels between those who stayed and those who left. Highly trained teaching staff were more likely to leave their jobs if they earned lower wages, worked in a climate with less stability of highly trained co-workers, and worked with a greater percentage of staff who did not have a bachelor's degree. Two of three of the findings related to co-workers.

Allen and Kelly (2015) summarize research related to the status and well-being of the early childhood workforce in Chapter Eleven of *Transforming the Early Childhood Workforce*. In their summary of retention research, they note “Educators and directors report leaving their jobs of the field because of concerns and pressures involving low pay, job instability, and changes in staff or leadership” (p. 471). Job instability and changes in staff or leadership are related to co-worker relationships. Reviewing the research related to the impact of co-workers on teacher turnover causes one to wonder whether center directors are prepared to improve co-worker relationships.

As noted when summarizing the findings from the *Closing the Leadership Gap* (2017) report, many center directors do not have the leadership qualification to support their successful implementation of items noted in the ECWES, including collegiality and supervisor support. Without this knowledge, support, and skillset, teachers are working in environments without strong co-worker collaboration and administrator support. This results in greater stress, adversity, and risk than teachers at a center with higher supervisor support.

What we know about resilience and its connection to education. All people, including center directors and early childhood educators, have an individual level of resilience to address the risk, adversity, and challenge they face on a daily basis. Resilience is determined by the individual, organizational conditions and systemic or macrosystem conditions (Aguilar, 2018, p. 5-6). The following reviews resilience focused research findings and individuals, educators, and leadership practices.

Elena Aguilar, author of *Onward*, explains that a person is born with a certain level of resilience. Those studying what impacts genetic resilience are just beginning their research to include findings that inform practices supporting resilience. While waiting for that information, research has also found that resilience is flexible. It can be eroded and strengthened (Beltman, Mansfield, & Harris., 2015; Doney, 2012; LeCornu, 2013). Knowing resilience is impacted by circumstances, Aguilar recommends early childhood teachers, and those supporting them, implement practices to build resilience to improve quality and consistency of teacher interactions for young children (Aguilar, 2018).

To investigate the resilience building process of novice teachers, Patricia Doney (2012) gathered data from 4 high school teachers during their initial year of teaching. Data sets included the following for each teacher: 6 interviews, a response to a written prompt on resilience, classroom observation each semester, relational maps developed each year, and work shadowing for one full day. These data were compiled into four case studies that went through cross-case analysis to identify similarities and differences. “The major finding of this investigation includes the notion that resilience is not an innate

personality trait, but rather a process that is both internal and external resulting from positive adaption to adversity” (p. 653).

The findings of Beltman et al. (2015) support that resilience is impacted by both a person’s internal being and external factors and further explore external factors with an investigation on the relationship between the work of school psychologists and teacher resilience. Using a qualitative approach, data included responses from four school psychologists and five teachers. These data were coded and analyzed for common findings. Results indicated that “In teachers’ experience, it was the local school ecology—and not specifically school psychologists—that most supported and sustained their resilience, and then in apparently ad hoc ways” (p. 18). This finding adds support that resilience is flexible and is impacted by the school, or organizational conditions.

The research of Rosie Le Cornu (2013) also focused on resilience, investigating the dynamic and complex interplay of individual, relational, and contextual conditions that operate over time to promote early career teacher resilience. Data were collected through two interviews from 60 early career teachers, one at the start of the school year and one near the end. An interview was also conducted near the end of the year with a member of the leadership team at each school where the teachers worked. A preliminary thematic analysis was completed. Researchers found that resilience is flexible and “The relationships that the early career teachers developed with their students, teaching colleagues, leaders, peers, family and friends, other professional staff, parents of students and themselves, all appeared to work together to promote their resilience” (p. 9). This finding provides support for further research related to resilient leadership practices that impact the adults in a center.

With a focus on scaffolding the development of resilience in young children, Devereux created an early childhood assessment, commonly referred to as the DECA (The Devereux Foundation, 2012). It is a standardized, norm-referenced behavior rating scale, grounded in resiliency theory (Chain, et al., 2010). The tool measures three areas: attachments/relationships, initiative, and self-regulation.

As the tool was implemented and research continued, Devereux acknowledged that many using the tool were early childhood teachers and the value of measuring and supporting early childhood teacher resilience (Devereux Center for Resilient Children, 2013). Devereux described children as cups whose resilience could vary in level and teachers as pitchers pouring resilience into children. A teacher cannot fill a child's resilience if they themselves have low resilience. To support resilience self-assessment and growth of the adults working with young children, Devereux created the Adult Resilience Survey abbreviated as DARS (The Devereux Foundation, 2013). The DARS includes the three areas of the DECA and add a fourth area: internal beliefs regarding the individual, the individual's life, and how effective the individual is at taking action in life.

As Devereux continued research development and related practices, the foundation recognized that teacher resilience is impacted by center director resilience and leadership practices (Ciarlante & Robitaille, 2019). They described center directors as the well of resilience where teachers fill their pitchers to then fill the cups of resilience of children. To support the assessment of resilient leadership, Devereux developed the Resilient Leadership Survey (DERLS), which has the same 23 items and four areas as in the DARS (The Devereux Foundation, 2016), but the items are worded to reflect

leadership practices. To grow resilient leadership, program directors are encouraged to complete both the DARS and DERLS and set a goal and action steps to grow in both. Through this research and visual imagery one can see how resilience of directors, teachers, and children are impacted by the microsystem of the center.

Resilience is impacted by the individual, organizational conditions (including the center's microsystem), and systemic conditions (other surrounding ecological systems). While everyone has a genetic resilience, it can be increased or decreased. (Beltman et al., 2015; Doney, 2012; LeCornu, 2013) The Devereux Foundation has developed adult resilience and resilient leadership surveys to support center directors and teachers in assessing their personal and professional resilience with a goal to increase resilience of adults working directly with children and leaders working directly with adults.

Review of connections between components of quality measurement tools and resilience measurement tools. A desired outcome of early childhood education is to provide positive child outcomes, which research has found to be related to the quality of a program. As noted earlier, there are multiple program quality components. There are also several quality program measurement tools. Often early childhood education reform has focused on quality improvement. In findings from a survey of 205 teachers, Bullough, Hall-Kenyon, and MacKay (2012) reported that even the most well-intentioned school reform is at risk of failing when the adults responsible are not practicing behaviors related to resilience, self-efficacy and hope. This led me to think about the relationship between the components of quality measurement tools and the four areas measured by both the DARS and DERLS: relationships, internal beliefs, initiative, and self-control. The following is a summary of the thought process.

High Scope's Program Quality Assessment (PQA) tool measures eight components of a program: daily routine, adult-child interactions, curriculum and instruction, learning environment, family engagement, staff qualifications, professional development, and program management. Of the eight components, my thought process connects seven of the components to the four areas measured by the DARS and DERLS. Adult-child interactions, family engagement, and program management are connected with the resilience of relationships and self-control. Curriculum and instruction connect with initiative. Professional development connects with both initiative and internal beliefs. Learning environment is related to relationships and initiative (Program Quality Assessment, 2003; The Devereux Foundation, 2013; The Devereux Foundation, 2016).

The Infant-Toddler Environment Rating Scale-Revised (ITERS-R) and the Early Childhood Environment Rating Scale-Revised (ECERS-R) measure seven program components: personal care routines and program structure, interactions, activities, space and furnishings, parents, staff, and language-reasoning. Of the seven components, my thought process connects six of the components to the four areas measured by the DARS and DERLS. Personal care routines and program structure, space and furnishings, and activities relate to initiative. Interactions, parents, and staff relate to relationships and self-control (Frank Porter Graham Child Development Institute of the University of North Carolina, 2018, ECERS-R; Frank Porter Graham Child Development Institute of the University of North Carolina, 2018, ITERS-R; The Devereux Foundation, 2013; The Devereux Foundation, 2016).

The CLASS by Teachstone measures three classroom components: adult-child interactions, curriculum and instruction, and learning environment. My thought process

connects all three to relationships and self-control as measured by DARS and DERLS (Teachstone, 2018; The Devereux Foundation, 2013; The Devereux Foundation, 2016).

The NAEYC Accreditation of Early Learning Programs measures nine program components: relationships; curriculum; teaching; assessment of child progress; health; staff competencies, preparation and support; families; community relationships; physical environment; and leadership and management. The researcher's thought process connects all nine components to the four areas measured by the DARS and DERLS. Relationships, families community relationships, and leadership and management relate to relationships and self-control. Curriculum, assessment of child progress, and physical environment relate to initiative. Teaching and staff competencies, preparation, and support relate to internal beliefs (The National Association for the Education of Young Children, 2018; The Devereux Foundation, 2013; The Devereux Foundation, 2016).

The Early Education Essentials Framework measures six program components: effective instructional leaders, collaborative teachers, involved families, supportive environments, ambitious instruction, and parent voice. My thought process connects all six components to the four areas measured by the DARS and DERLS. Effective instructional leaders are related to initiative. Collaborative teachers, involved families, and parent voice are related to relationships and self-control. Supportive environments are related to relationships, self-control, and initiative. Ambitious instruction is related to internal beliefs and initiative (Ehrlich et al., 2016; The Devereux Foundation, 2013; The Devereux Foundation, 2016).

Summary of the relationship between stress, resilience, and program quality.

There is an increased focus on improving the quality of early childhood education in the

United States of America. Tools have been developed to measure the quality of programs, with a goal that the data be used to determine quality improvement goals and action steps. The thought process of the researcher finds that of the components within the quality improvement tools, a majority of them align with the four areas of adult resilience and leadership resilience as measured by the DARS and DERLS. This thought process supports the writing of Jones, Bouffard and Weissbourd (2013) who noted “Interest in a better understanding of the social emotional health and resilience of teachers is becoming increasingly important as preschool programs work to improve the quality of education children receive”.

Resilience researchers have found that resilience is determined by the individual, microsystem or organizational conditions, and macrosystem or systemic conditions. Early Childhood Center quality is also impacted by microsystem and macrosystem conditions. This is why I included a thought process relating resilience and program quality.

The work of a center director and early childhood teacher requires resilience and self-efficacy to support sustainability and prevent burnout. The condition of compensation, children’s behavior, and workplace support is commonly a source of stress for center directors and teachers. Supporting the resilience of these professionals can buffer these conditions that, if not buffered, make turnover more likely.

Main Finding Three: Use of the DARS and DERLS may Positively Impact Resilience, Self-Agency

While this dissertation is focused on teacher turnover, the resilience of teachers and center directors, and resilient leadership practices; the overarching purpose of the research is to support positive outcomes for young children. Research has studied times

when children have faced adversity and resilience. This dissertation research has included reference to Bandura's theory of self-agency (Bandura, 1977) and Bronfenbrenner's theory of self-efficacy (Elder, 1996). Review of this research aligns with the development of Devereux's tools to measure resilience and provides value for using some of those tools in this study. Understanding these tools and how they relate to each other further explains how this dissertation relates to outcomes for young children even though data from young children were not gathered and analyzed.

Research related to an individual's resilience development and interactions with an adult outside the home. Glen Elder (2004, 1996, 1989) published several studies related to resilience. This included resilience of adolescence, World War II veterans, and children. The following reviews this research, connecting the findings with Bronfenbrenner's ecological model.

Crosnoe and Elder (2004) researched family dynamics, supportive relationships, and educational resilience during adolescence. Their research focused on the impact of parental relationships of an individual, as well as other microsystem relationships like friends, siblings, and teachers. Crosnoe and Elder found that these non-parental relationships could provide protective interactions that support resilience even when parental relationships put an adolescent at risk. This research is important to highlight because it connects resilience to the complex ecological systems theorized by Bronfenbrenner. Resilience is determined by both the individual and an individual's ecological systems. A child's resilience can be impacted by the child's teachers. A teacher's resilience can be impacted by the administrator and the teachers with whom they work with.

An individual can experience stressful situations as a result of an occurrence in any ecological system. For example, The Great Depression in America is a macrosystem level, stressful situation that trickled down to every individual in that macrosystem. Elder (1996) noted, “Human lives are typically embedded in social relationships with kin and friends across the life span,” (p. 112). This statement is supported by his research specific to the impact of the great depression. He found microsystem relationships could buffer or increase the adversity of the situation (1974).

Elder also partnered with Clipp (1989) to explore the relationship between combat experience and emotional health with a focus on impairment and resilience in later life. Using data from the archives of the Institute of Human Development that represented 149 World War II veterans, they completed the California Q-sort analysis that was developed by Jack Block in 1971. Their findings include noting the effects of combat are moderated or accentuated by personal and contextual influences. As a result, the veterans had different levels of resilience, (p. 338). Elder and Clipp provides evidence that the microsystem of an individual has impact on the individual’s resilience.

In alignment with Elder’s finding, Harvard’s Center on the Developing Child (2015) notes, “The single most common factor for children who develop resilience is at least one stable and committed relationship with a supportive parent, caregiver, or other adult”. Bronfenbrenner, Elder, and Harvard also highlight the impact of healthy child-adult relationships that span across time. From this research, over decades, healthy role models and relationships from childhood through adulthood have been found to build resiliency.

Glenn Elder (2004, 1996, 1989) partnered with other researchers to study resilience. His findings relate to various systems in Bronfenbrenner's ecological model, including interactions between these systems. Research specific to early childhood teacher resilience, incorporating one or more system of Bronfenbrenner's ecological model, informs the relationship between teacher turnover, adult resilience, and center directors' resilient leadership.

Research connecting Bandura's self-efficacy, Bronfenbrenner's self-agency, and resilience. Albert Bandura is an American psychologist who originated the social cognitive theory. At the core of social cognitive theory are self-efficacy beliefs Bandura defines self-efficacy as a person's belief that s/he can, "execute the behavior required to produce the outcomes" (Bandura, 1977, p. 79). Bandura identified these four main sources of self-efficacy: performance accomplishments, vicarious experience (modeling), verbal persuasion, and emotional arousal (Bandura, 1977, p. 80).

Performance accomplishments occur when a person executes a behavior to produce the outcome, strengthening self-efficacy. Vicarious experience refers to when a person observes another's behavior and witnesses whether the outcome was produced or not. Verbal persuasion is often used because of its ease in accessibility, but is weak in the results it attains for improving self-efficacy (Bandura, 1977, p. 82). Emotional arousal, the last of the four major sources, refers to the negative impact stress, anxiety, and fear, which can have an effect on self-efficacy. A person experiencing these emotions is less willing to execute the behavior required to produce outcomes.

Some characteristics of Bandura's self-efficacy theory can be summarized as a person's belief that a person can do something. Bronfenbrenner (1994) included self-

efficacy in his bio-ecological model and added to it self-agency. Self-agency is the extent people are able to steer their lives despite constraining forces of social justice. Self-agency is related to a person's self-efficacy. A person must believe they can execute a behavior required to produce outcomes (self-efficacy) to attain those outcomes (self-agency). If a person does not attain outcomes (self-agency) then it limits their belief that they can (self-efficacy). (Elder, 1996)

This review has highlighted that self-efficacy and self-agency are similar to each other, and highlights how they are similar to resiliency. Elder (1974) writes "Resilience connotes an image of the competent self, consisting of personal worth, of self-confidence, inner security, and self-control" (p. 11). This definition includes aspects of self-agency and self-efficacy, demonstrating a relationship.

Earlier in this chapter, research was shared that supported that resilience is both pre-determined and flexible. This section highlighted that self-efficacy and self-agency is also both pre-determined and flexible. Since there is flexibility and connection in their definitions, Figure 5 represents how they are independent and dependent with each other.

If resilience increases, it is likely that self-efficacy and self-agency increase. If resilience is to decrease, so may self-efficacy and self-agency. Elder (1974) supports this hypothesis by noting "Success experiences across different situations develop a repertoire of adaptive acts, an array of skills enabling resourcefulness and flexibility" (p. 11). By focusing on teacher resilience, we better understand teacher efficacy and self-agency so that we can improve those areas and increase teacher retention to benefit young children.

Research-based classroom and school strategies used to create environments that build resilience reflect the areas of the DARS and DERLS. Factors that diminish

self-efficacy, self-agency, and resilience are commonly referred to in research as risk factors. Risk factors are often characteristics of families and communities, or the microsystem and mesosystem of the individual (Doll, 2013). Study of risk factors, while of value, is not currently as much of a focus as the study of protective factors that build a person's resilience. The following highlights research that focusses on protective factors.

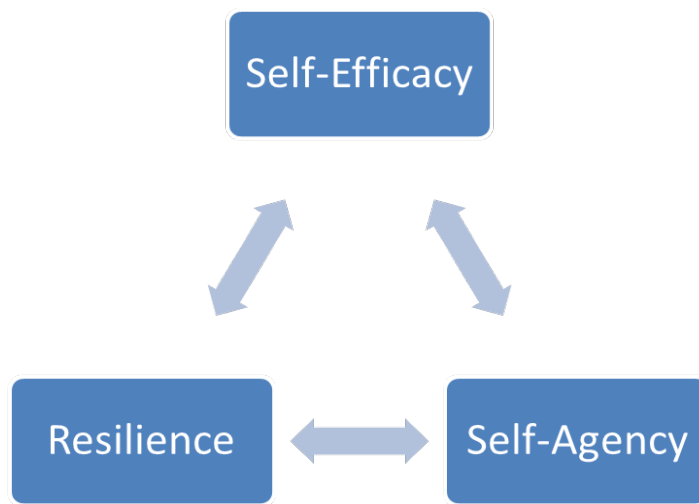


Figure 5. Connection between self-efficacy, self-agency, and resilience

Beth Doll (2013), recognizing, “resilience often emerges out of very personal interactions that occur between children and adults, and between children and other children,” researched enhancing resilience in classrooms (p. 400). The focus of her work was to develop and refine a practical strategy that teachers can use to create classroom environments that predispose their students to success. To do this, Doll defined six classroom beliefs that this dissertation connects with the four areas of the DARS and DERLS. Relationships on the DARS and DERLS relate to Doll’s (1), “...quality of the

relationships that exist between the teacher and students in the classroom; (2) the nature of the peer relationships that exist among classmates; and (3) the degree of collaboration and connectedness that exists between the classroom and students' families." Initiative on the DARS and DERLS relates to Doll's (4) "degree to which the students are empowered to set goals and make decisions on their own behalf." Self-control on the DARS and DERLS relates to Doll's (5) "degree to which the students are supported in managing their own behavior (academic self-control)." Internal beliefs on the DARS and DERLS relates to Doll's (6) "degree to which classrooms support students' confident expectations that they will succeed in class" (p. 401). Outlining how areas of the DARS and DERLS relate to how research has defined areas of resilient classrooms supports the use of the DARS and DERLS in measuring resilience of those working directly with children.

Jonathan Cohen also had a school focus when he studied the creation of a positive school climate as a foundation for resilience (2013). Different from Doll who focused on classrooms, Cohen focused on the practice of a school. This is similar to the difference between the DARS which focuses on the resilience of individual caregivers and the DERLS, which focuses on resilient leadership practices that affect all caregivers. Cohen highlights the American Psychological Associations' 2010 summary of factors that support development of resiliency. This resource was updated to define the "Road to Resilience" (2012). The current factors from the American Psychological Association relate to the four areas of the DARS and DERLS, as outlined in Table 1. Cohen continues in his review to relate these areas of resilience to what is covered on the National School Climate Center's Comprehensive School Climate Inventory. Within that inventory there are four areas: Safety, teaching and learning, interpersonal relationships, and institutional

Table 1 Relationship between DARS, DERLS, and Factors that Support the Development of Resiliency from the American Psychological Association

DARS and DERLS Area	Factors from the American Psychological Association
Relationships	Build your connections by prioritizing relationships and joining a group.
Internal Beliefs	Embrace healthy thoughts by keeping things in perspective, accepting change, maintaining a hopeful outlook and learning from the past.
Initiative	Find purpose by helping others, be proactive, move toward your goals, and look for opportunities for self-discovery.
Self-Control	Foster wellness by taking care of your body, practicing mindfulness, and avoiding negative outlets.

environment. Only interpersonal relationships relates to the items in resiliency, demonstrating that a focus solely on school climate does not address all opportunities to support development of resilience for children that have faced adversity. Using the DARS and DERLS instead of a school climate assessment gathers data that is specific to resiliency and covers more areas of resiliency

Summary of the adult impact on children’s development of resilience and protective factors, including how the DARS and DERLS relate. The DARS and DERLS were developed to support early childhood caregivers and leaders to self-assess

and growth their resilience and resilient practices. To reach this outcome, the developers aligned it to protective factors. Protective factors align with the components of Bandura's theory of self-efficacy and Bronfenbrenner's explanation of self-agency. Reviewing these theories, along with the findings of research like Glenn Elder's on a child's development of resilience, provides one with an understanding of how self-efficacy, self-agency, and resilience are connected. The research also highlights how adults outside a child's home can impact the resilience of the child, highlighting the value of measuring the resilience and resilient practices of those working with young children.

Conclusions

Research is clear on life outcomes that occur due to what a child experiences during their early years. Bronfenbrenner's ecological model demonstrates the multitude of variables that impact the relationships, experiences, and environments of young children. For many young children in America, one daily environment is an early learning center. While this research study did not propose to gather data specifically on children, it did have the goal of benefiting children from its findings.

The adults that young children engage with at a center have their own levels of resilience. This resilience is related to their self-efficacy and self-agency, which impacts their ability to consistently provide high quality early learning opportunities to young children. This dissertation is based on the hypothesis that using the DARS and DERLS to measure adult resilience and resilient leadership practices can provide insight as to the adults' abilities to successfully implement and maintain their positions as high quality early childhood educators.

On a daily basis, a center director and the teachers experience risk, adversity, and challenge, which may result in burnout. Resilience, as measured by the Center for Resilient Children (2020) is a person's ability to overcome risk, adversity, and challenge and it is thought that this ability can be developed. Early childhood programs often do not measure resilience, and do often measure classroom and program quality, which led the researcher to include a thought process that highlights the connection between resilience and areas of quality measurement tools.

Center directors have an impact on the quality of a center, including teachers and child outcomes. There are multiple theories of leadership to guide the practice of center directors so that quality is high and child outcomes are strong. In Michigan, there is a difference between research recommended qualifications and required qualifications for center directors, which could limit center directors' awareness of strategies to implement leadership theories like resilient leadership.

CHAPTER THREE

METHODS AND DATA ANALYSIS

Overview and Research Design

This research is designed to explore and examine the relationships between teacher turnover, early childhood teacher and director adult resilience, and resilient leadership practices. Sub-questions related to the main question include:

- What do the center director and at least one staff member who work at least ten hours a week self-report about resilience leadership practices at the center?
- What do a center director and at least one staff member who work with children at least ten hours a week self-report about their own adult resilience?
- What is the center's turnover rate of high quality early childhood professionals who decide to leave the education profession?
- What individual or center characteristics, other than resilience leadership and adult resilience, relate to turnover?

The study is a quantitative design. Many studies related to early childhood teacher turnover summarized in Chapter Two used a quantitative design. This study also incorporates a focus on resilience. Much of the research on resilience is based on a qualitative design. This study builds on the learning from qualitative research, by using it as a base to create a survey and take a quantitative approach. Using a quantitative approach for this study that included a focus on resilience continues to build on the already strong research foundation.

The design also employs hypothesis testing. The researcher hypothesized that there is a correlation between resilient leadership practices and adult resilience. The researcher also hypothesized that the higher the adult resilience the lower the turnover.

The data were analyzed using cross-sectional statistical analysis, rather than having a longitudinal focus. The areas of turnover, resilience, and resilient leadership are not static, and are impacted by several items. Gathering data reflective of a moment in time allows the researcher to compare the items in that moment, limiting intervening variables that may change over a longitudinal time period.

The conceptual model this research is designed to explore is the relationship between early childhood educator turnover, center educator and administrator individual adult resilience, and center resilient leadership practices. Figure 6 aligns with the study's hypothesis that center resilient leadership practices impacts both adult resilience of administrators and educators and early childhood educator turnover. In addition, adult resilience has a greater impact on early childhood educator turnover than center resilient leadership practices.

The representation of a hypothesis is that resilient leadership practices impact both individual adult resilience and teacher turnover and that individual adult resilience has the greater impact on turnover.

Researcher Role

The researcher was not a study participant. The data were gathered via a survey completed and submitted anonymously by the center director and teachers who worked directly with children at least ten hours a week at the center. The researcher does not and did not work at these centers or with the centers in any capacity. The researcher made

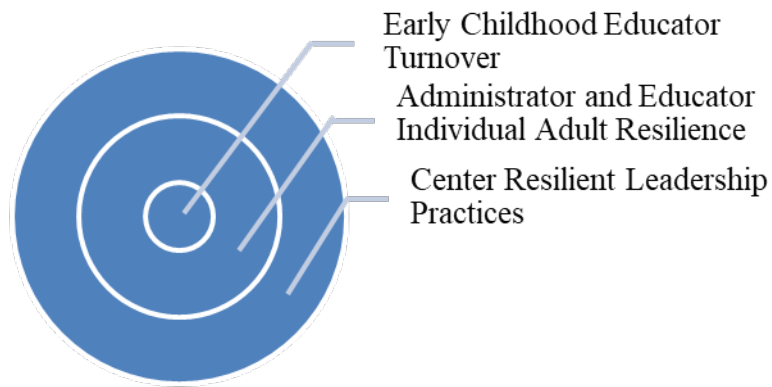


Figure 6. Conceptual Model

contact with each center via email and phone. In all communications, the researcher was clear about the opportunity to participate per IRB approved communication and methods to gather survey responses.

Setting

The study took place at licensed early childhood centers in an urban area of the Midwestern United States. This is an area where, at the time of this study, 38.4% of the residents were Black or African American. Prior to the pandemic, it was “a massive child care desert, ringed by affluent suburbs without much of a child care shortage” (Center for American Progress, 2019). The estimated child poverty rate was 50%.

There were approximately 818 licensed child care centers in this region. Of the 818, about 213 only served children who were school-age, and therefore were not eligible to participate in this study. Of the 605 eligible centers, about 111 were affiliated with a public school district or charter school and about 74 were affiliated with Head Start. The

remaining 420 centers were community based centers that were privately owned or part of a corporation.

When considering sample size, the researcher wanted to determine a participant population that would allow the findings to be generalizable to a larger population. A pandemic was occurring at the time of participation recruitment, so the researcher didn't know how many of the 605 eligible centers were actually operating. In addition, the researcher was asking participants to volunteer or self-select into the study. These factors lead the researcher to use Baker's (2012) calculation to determine a target sample size of 237 centers.

Recruitment for centers ended once the researcher anticipated the sample would likely be sizeable enough to do the analysis that would test the hypothesis. Other factors to determine ending recruitment included the opportunity had been available for over four months and the program year was coming to an end for many sites as the school year was ending. By the end of the study, 82 centers participated. Of these 82 centers, 61 submitted at least one response from a center director and one response from a teacher, 17 submitted a response from at least one center director, and 4 have at least one response from a teacher.

The geographic size of this area is about 673 square miles. Sites that participated were spread across all 673 square miles. With the setting spread across 673 square miles, some areas were denser in population than others. For example, some were urban and others suburban. The participation aligned with the density of the population. For example, more sites from urban areas participated than sites from suburban areas.

Participants

Participants were the sites themselves, with data being gathered from the center director(s) and teachers(s) who worked at least ten hours a week at these sites. Data from the center director(s) and teacher(s) were linked with an ID that was the name and address of the center for data collection. For analysis each center was assigned a numeric center identification number ranging from 1 to 82.

The center director is the person that hires, evaluates, and supervises employment with the teacher. The teachers include those who work at least ten hours a week and whose main work is to educate children enrolled at the center. This can include individuals working with children as young as infancy or as old as age five (prior to Kindergarten enrollment). The number of paid hours of work per week were in-line with the administration guidelines for the ECWES, which also gathers both teacher and administrator perspective (Bloom, 2016).

Data Collection Instruments

Data collection instruments include a researcher developed questionnaire (see Appendix A) and an adapted version of the DARS (see Appendix B), which were completed by every participant. An instrument completed only by teachers is an adapted version of the DERLS (see Appendix C). Adaptations were made to separate behavior based and self-awareness based questions as well as rating of items on a 6-point scale, rather than a 3-point scale because a three point scale provides data related to agreement (i.e., agree, disagree, neutral) whereas a 6-point scale forces choice either towards agree or disagree and provides more variability in levels of agreement or disagreement. Also, adaptations were made so that language addressed a teacher rather than a center director.

Instruments completed only by center directors were an adapted version of the DERLS (see Appendix D), and a center census (see Appendix E). Adaptations for the DERLS include rating the items on a 6-point scale rather than a 3-point scale.

These data collection instruments were compiled into a survey to send to licensed centers. The survey was built with logic so that all participants could start with the same survey link. All participants would complete the researcher developed questionnaire and DARS. Then they would be asked if they considered themselves an administrator or educator. Depending on that answer the participant would be directed to answer the DERLS and Center Census if an administrator and the DERLS adapted for teachers if an educator. Figure 7 provides a visual of the different collection instruments each participant completed, separated by administrator and educator roles.

These instruments were chosen to support awareness of items impacting turnover developed survey were based on factors related to turnover noted in the literature review. “...The DARS is a...tool that can be used by adults to nurture their own personal strengths” (Ball and Mackrain, 2012). The DERLS is a research-informed checklist, related to the DARS, to help professionals reflect on behaviors associated with resilient leadership (Wagner & Poyner, 2016). Data gathered from these tools provided the researcher with information needed to analyze the relationship between teacher turnover, staff and center director resilience, and resilient leadership practices from the perspective of both the administrator and educator.

Data Collection Procedures

Michigan’s Great Start to Quality website (<http://www.greatstarttoquality.org>) has a list of all licensed child care sites in the state that can be exported into an Excel file. To

Licensed Center	Administrator	Researcher Developed Questionnaire
		DARS
		DERLS
	Educator	Center Census
		Researcher Developed Questionnaire
		DARS
		DERLS (adapted for teachers)

Figure 7. Collection instrument completed by each participant separated by role.in comparison to adult and leadership resilience. The questions in the researcher

begin recruitment, the researcher exported the list of sites in the urban area of the Midwestern state and removed all licensed child care homes and group homes. The researcher used this list to email and phone each center to let them know about the opportunity to participate.

The initial email was sent on January 8, 2021 through the Qualtrics survey system to over 100 centers. No responses were received for over a week, so the researcher began phoning centers. Every center director the researcher talked with shared they did not receive it and asked the researcher to re-send the information. As a result, the researcher began sending the survey to individual centers one at a time through Qualtrics. The researcher then started receiving survey responses, and some centers shared they still had not received it. As a result, the researcher began sending the anonymous survey link

through Oakland University email to individual centers. If more than one center at a time was emailed, then the centers were blind carbon copied. Of the 185 surveys submitted to the researcher, 170 were submitted from the anonymous link and 15 were submitted through a Qualtrics email. Between January 20 and May 13, the researcher phoned and emailed centers every week to recruit participation, share participation progress, or celebrate completion in participation. If the researcher learned a site was not eligible to participate because they did not serve children in the specified age range, were choosing not to participate, or did not have the ability to participate at the time; the researcher noted this information so that the site would not be contacted again.

The researcher also worked with local entities that have relationships with the centers to connect with center directors and educators. The researcher shared about the opportunity during a local director meeting in January 2021, local Association for the Education of Young Children meeting in March 2021, local Head Start management team meetings in April 2021, and local team of early childhood site coaches April 2021. The survey was looked at 327 times, and the final sample includes 185 completed responses. The 185 responses were from 82 different centers with 61 had responses from at least one educator and one administrator, 17 had a response from at least one administrator, and 4 had at least one response from a teacher.

Individuals who responded to the survey provided their age as a demographic characteristic. Additional demographic questions, like gender and socioeconomic background, were not gathered. Due to the pandemic, recruitment as originally approved by IRB was modified once in January 2021 and again in February 2021 (See Appendix F

for original IRB Letter of Consent, Appendix G for the first modification IRB Letter of Consent, and Appendix H for the second modification IRB Letter of Consent).

All responses were stored securely in Qualtrics. For submission tracking, survey responses were downloaded in Excel about once a week, and compared with a licensed center tracking sheet to note whether there was one or more responses from an administrator and from a teacher at the site. The Qualtrics download and submission tracking sheet were kept on a secure external hard drive. Changes were saved by date so that historical data could be reviewed if needed.

Measures

As this section revisits the DARS and DERLS, a review of the tools is provided. The DARS is a reflective checklist with 23-items divided into four key areas: relationships, internal beliefs, initiative, and self-control. The information can be used to help individuals build on strengths, such as creativity and setting limits, so they can better cope with adversity and the stresses of daily life. The DERLS is a research informed checklist with 23-items divided into the four key protective factor areas that the DARS is divided into. It is to help professionals reflect on behaviors associated with resilient leadership.

DARS. In order to test if there were shared underlying constructs or "factors" for the group of survey items as organized by the Devereux Foundation for the DARS, the researcher ran a principle components factor analysis with varimax rotation. Factor analysis is a method used to assess the variability among observed, correlated items with the goal of identifying a potentially lower number of underlying constructs. For example, between 10 items, there may be as few as one and as many as 10 different underlying

constructs being measured. Principle components analysis estimates an eigenvalue solution to the multivariate equation suggested by the matrix made up of the survey items as variables, and retains as potential groupings any eigenvalue greater than one. The analysis then conducts a mathematical shift to maximize the variance between the retained solutions by re-estimating the vectors as orthogonal. The results of this analysis provided two critical pieces of information: (1) the number of underlying constructs measured by the items tested, and (2) the association (a correlation coefficient) between each item and that underlying construct. The second piece of information provided the text correspondence to the unmeasured construct needed to create a new name for the construct.

Factor analysis results demonstrated all of the items under relationships were part of the same construct, except for “I have a mentor or someone who shows me the way.” The researcher decided that this item did not fit in the relational construct and decided to remove it from the component, leaving four items for subsequent analysis. Factor analysis results demonstrated all of the items under internal beliefs were part of the same construct, and all of the items under initiative were part of the same construct. The final items, grouped under self-control, also made the same construct once the researcher moved the item that asked for respondents to rate “I can calm myself down” as a behavior statement. The researcher kept the “I can calm myself down” responses that were self-statements.

DERLS. To determine DERLS components, both an exploratory and a confirmatory factor analysis were completed. New variables were established to group items in line with how DERLS groups items into the categories of relationships, internal

beliefs, initiative, and self-control. The new variables were separated by responses from teachers and responses from administrators so that the analysis could reflect their different perspectives. As the analysis was conducted with these new variables, it was discovered that the analysis could not be completed because the teacher specific variables had 86 missing submissions since the administrators did not respond to the teacher variables, and the administrator variables had 99 missing submissions since the teacher did not respond to the administrator variables. This is because the survey was set-up so that administrators did not have access to questions designed for teachers and teachers did not have access to questions designed for administrators.

To establish DERLS constructs that could be used in analysis a *t*-test was completed between the teacher and administrator responses. The *t*-test analysis examines the difference observed between the means of two groups compared to the combined variability across these groups (the standard error of the mean). As such, this analysis determines whether the size of the difference between the two groups' means is larger than could reasonably be expected to occur by chance, given the amount of variation there was in this measure across the entire sample. For this analysis, a probability level of $p < .05$ was used to argue for significance. There was not a significant difference between the group responses. In fact, there was a great deal of agreement between how the teacher and administrator responded. As a result, their responses were combined to create four composite variables

Survey. In addition to creating composite variables for the four areas of the DARS and DERLS, responses were adjusted to create analyzable variables for age and categorical variables for an early childhood degree preceding a Bachelor's degree in the

early childhood profession, years working at the current center, individual position turnover percent at or greater than twenty-two as it is the median between 11% and 33% that prior research results demonstrate to be the average turnover percent for the profession, whether the individual anticipates staying at the current center five or more years, turnover rate for current year at or higher than twenty-two percent, turnover rate for previous year at or higher than twenty-two percent, and the center has half or more of the staff that had worked five years or less. The final variable created from responses was continuous for the average number of years of experience of staff at the center. Detail regarding how these variables were created is in Appendix L. The appendix also references how the data included additional variables from other sources, like the variable indicating whether or not the center is accredited by the National Association for the Education of Young Children, which were added to the data set for analysis.

Turnover data were gathered through the center census in Appendix E by asking the center director various questions. For example, the center director was asked how many positions they have at their program and how many individual people have filled those positions in the past 12 months. The number of positions was divided by the number of people and then multiplied by 100 to attain a percent. This percent was analyzed along with the percent provided by the center director when they answered, “Every year about what percent of your staff do you lose?”

Data Analysis

Once the composite variables for the DARS and DERLS were established as relationships, internal beliefs, initiative, and self-control each composite variable was analyzed with other variables using either a One-Way Analysis of Variance (ANOVA) if

the predictor (e.g., turnover rate is at or higher than 22%) was categorical or Linear Regression if the predictor (e.g., turnover rate for current year in percent) was continuous. ANOVA analysis compares the size of differences observed among means between groups (the mean square distance between groups) with the difference of each observation from its group mean observed within each group (the mean square distance within groups). As such, this analysis determines whether or not at least one group differs significantly from any of the others. If the F-test identified significant differences overall, I further examined the individual contrasts between groups in a post-hoc comparison, using the Fisher Least Square Distance (LSD) test.

Ordinary Least Squares (OLS) regression analysis builds on the correlational association between two continuous variables, and uses calculus to solve the least-squares-distance estimation to find the best fitting line minimizing the distance between all observed points. As such, this analysis provides two critical points of information: (1) the strength of association (R) and its related amount of variance explained by the predictor (R^2); and (2) the amount of estimated linear relationship between predictor and outcome (B). Regression analysis also supplies each estimate with an associated significance, to determine the extent to which the observed estimate could have occurred by chance. For this analysis, I use the standard alpha level of .05 to argue for significance. However, I also consider the size of the relationship in an educational context, to consider the "educational" significance in a meaningful way. This resulted in the findings of statistical significance represented in Table 2 and Table 3. Variables not represented in Table 2 and Table 3 did not have any areas of significance with the DARS and DERLS composite variables.

Table 2 Statistical Significance for DARS Composite Variables as the Outcome and Various Predictor Variables as Noted in the First Column. $p < .05$ is Bolded.

Predictor Variable	Relationships	Internal Beliefs	Initiative	Self-Control
Quality Rating (ANOVA)	$p = \text{n.s.}$	$p = .035$	$p = \text{n.s.}$	$p = \text{n.s.}$
Quality Rating (Linear Regression)	$p = \text{n.s.}$	$p = .026$	$p = \text{n.s.}$	$p = \text{n.s.}$
Age (ANOVA)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .022$	$p = .038$
Age (Linear Regression)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .017$	$p = \text{n.s.}$
EC Degree preceding bachelors (Linear Regression)	$p = \text{n.s.}$	$p = .008$	$p = \text{n.s.}$	$p = \text{n.s.}$
Individual anticipates staying at current center 5 or more years (ANOVA)	$p = .016$	$p = .003$	$p = .032$	$p = .009$
Current role – how long (Linear Regression)	$p = \text{n.s.}$	$p = .023$	$p = \text{n.s.}$	$p = .047$
Current center – how long (Linear Regression)	$p = \text{n.s.}$	$p = .001$	$p = .042$	$p = .007$
Turnover Rate for Current Year in % (continuous) (Linear Regression)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .046$
Turnover Rate for Current year is at or higher than 22% (categorical) (ANOVA)	$p = \text{n.s.}$	$p = .042$	$p = .034$	$p = .008$
Turnover rate for previous year in % (Linear Regression)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .016$	$p = \text{n.s.}$
Every year, about what % of staff do you lose? (Linear Regression)	$p = \text{n.s.}$	$p = .016$	$p = \text{n.s.}$	$p = \text{n.s.}$

Table 3 Statistical Significance for DERLS Composite Variables as the Outcome and Various Predictor Variables as Noted in the First Column. $p < .05$ is Bolded.

Predictor Variable	Relationships	Internal Beliefs	Initiative	Self-Control
Access to Dental Benefits (ANOVA)	$p = .050$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
Program Model (Linear Regression)	$p = \text{n.s.}$	$p = .030$	$p = \text{n.s.}$	$p = \text{n.s.}$
Does center have half or more of staff that have worked 5 years or less? (ANOVA)	$p = .002$	$p = .002$	$p = .011$	$p = .010$

was designed to gather responses related to turnover variables found in previous research and to also analyze those. Since some of the turnover variables were categorical, the analysis also included crosstabs and binary logistic regressions.

Cross-tabulation (or, alternately, Chi-Square analysis) uses categorical predictors and outcomes, comparing the observed frequency of each cell to the expected frequency one would expect under the assumption of no relationship. In this analysis, the overall result concerning whether or not there is a relationship between predictor and outcome is tested by the chi-square test statistic (χ^2). In addition, the likelihood of there being more or less in any given cell of the cross-tabulation is tested with the standardized adjusted

residual. This statistic is considered significant if it is greater than 1.98 (hence more in the cell than predicted by chance) or less than -1.98 (hence fewer in the cell than predicted by chance). In this analysis, the argument for significance for both the chi-square and the standardized adjusted residual was set at $p < .05$.

Binary logistic regression analysis uses the log-odds of the dichotomous outcome to preserve the presumption of linear relationship in regression. Thus, it more accurately estimates the incremental relationship between a continuous predictor and the likelihood of shifting value in the dichotomous outcome, from not transferring to transferring. Like a linear regression analysis, the logistic regression provides two critical points of information: (1) the amount of variance in the probability of the outcome explained by the predictor (Nagelkerke R^2) that measures the strength of the association; and (2) the amount of estimated linear relationship between predictor along with the odds of the outcome (β). To make sense of this coefficient, the exponential conversion shows the percent difference from a 1:1 odds relationship. Logistic regression analysis also supplies each estimate with an associated significance tested with a Wald test statistic, to determine the extent to which the observed estimate could have occurred by chance. For this analysis, I use the standard alpha level of .05 to argue for significance.

Analysis resulted in the findings of statistical significance represented in Table 4 and Table 5. Variables not included in Table 4 and Table 5 did not have a significant relationship with variables reflective of turnover.

Table 4 Statistical Significance for Center-Wide Variables Reflective of Turnover and Reported by the Administrator as Outcome Variables and Various Predictor Variables as Noted in the First Column. $p < .05$ is Bolded. Highlighting Signifies the Predictor Variable is Center-Wide.

Predictor Variable	Turnover current year in %: cont.	Turnover previous year in %: cont.	Turnover previous year at or higher than 22%: cat.	Every year, about % of staff lost? cont.	Average # of years of experience for staff: cont.
Accreditation Status (ANOVA)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .040$
Quality Rating (ANOVA)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .011$	$p = \text{n.s.}$
BA in ECE (ANOVA)	$p = .014$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p < .000$	$p = \text{n.s.}$
Degree beyond bachelor's (ANOVA)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .001$	$p = \text{n.s.}$
Graduate Degree in ECE: Focus in Education or Administration (Linear Regression)	$p = \text{n.s.}$	$p = .009$	$p = \text{n.s.}$	$p = .038$	$p = \text{n.s.}$
EC Degree preceding bachelor's (ANOVA)	$p = .024$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
EC Degree preceding bachelor's (Linear Regression)	$p = .032$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .003$	$p = \text{n.s.}$
Education not specific to EC (ANOVA)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .024$	$p = \text{n.s.}$
# of paid teachers working 10 or more hours a week (Linear Regression)	$p = \text{n.s.}$	$p = .026$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
Access to dental benefits (ANOVA)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .014$
Description of Role (Linear Regression)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .006$
Classroom colleague also completed the survey (Crosstab)	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .045$	$p = \text{n.s.}$	$p = \text{n.s.}$

Table 5 Statistical Significance for Individual Variables Reflective of Turnover and Reported by Each Participant as Outcome Variables and Various Predictor Variables as Noted in the First Column. $p < .05$ is Bolded.. Highlighting Signifies the Predictor Variable is Center-Wide.

Predictor Variable	Worked at current center = or > 1 yr: cat.	# of yrs working at current center: cont.	Ind. position turnover rate: cont.	Ind. position turnover rate = or > 50%: cat.	Anticipate d time in role: cont.	Anticipate d time at center: cont.	Anticipated time employed in childcare or school: cont.	Anticipated staying at center, possibly in role, = or > 5 Yrs: cat.
Quality Rating: cont.	$p = .002$	$p = .030$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .009$	$p = .004$	$p = \text{n.s.}$
Quality Rating: cat.	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .040$	$p = .042$	$p = \text{n.s.}$	$p = .028$	$p = .030$	$p = \text{n.s.}$
Center supports T.E.A.C.H. Scholarship: cat.	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .047$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .017$
Programmin g Model: cont.	$p = \text{n.s.}$	$p = .004$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
Age: cont.	$p = \text{n.s.}$	$p = .000$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
Receives paid time off: cat.	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = .045$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
Role in the center at least 10 hours a week: cat.	$p = \text{n.s.}$	$p = .010$	$p = \text{n.s.}$	$p = .048$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$
Access to medical benefits: cat.	$p = .033$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$	$p = \text{n.s.}$

The plan for analysis included reviewing statistical significance of DARS composite variables as the outcome and various predictor variables, DERLS composite variables as the outcome and various predictor variables, center-wide variables reflective of turnover and reported by the administrator as outcome variables and various predictor variables, and individual variables reflective of turnover and reported by each participant as outcome variables and various predictor variables. Those relationships that found to be significant and the direction of the significance were compared with the research questions to determine which to use for further analysis.

Analysis begins with answering the main research question: What is the relationship between a center's resilience leadership practices, the adult resilience of the center director and teaching staff that work with children at least ten hours a week, and the turnover of staff who work at least ten hours a week. Each DARS and DERLS composite variable that was significantly related to another variable is included. ANOVAs are reported in a table format that includes the number of responses, mean(s), and standard deviation(s) organized from lowest to highest mean. A summary description includes the variances (F), degrees of freedom (df), and probability of obtaining results at least as extreme (p). The summary ends with a concluding statement that translates the statistical results into more common language. Linear regression results are summarized in a paragraph that includes the sample correlation coefficient (r) as it measures the closeness of association of the points in a scatter plot to a linear regression line based on those points and p-value (p), the proportion of the variance for a dependent variables that is explained by independent variables (R^2) and p-value (p), and how one of each of the variables is impacted by the other in standard deviation(s).

Analyses continued to answer the first sub-question: How do the center director and staff who work at least ten hours a week self-report resilience leadership practices at the center? The first analysis measured whether teachers and administrators had responses statistically different from each other for the DERLS. Then descriptive statistics on the means answers were analyzed to determine if they were significantly related to variables other than those representing turnover, like access to dental benefits. Findings from this process were further explored if there was statistical significance.

The second sub-question was answered next: How do center director and each staff member who works with children at least ten hours a week self-report their own adult resilience? Similar to the DERLS, the analysis measured whether or not teachers and administrators had responses statistically different from each other. Then descriptive statistics on the means were analyzed. Findings from this process were further explored if there was statistical significance.

The plan for analysis for the third sub-question began differently than with the other two. The third sub-question was, “What is the center’s turnover rate of high quality early childhood professionals who decide to leave the education profession?” As the plan was developed, it was clear that the responses did not include data to do the analysis. This is further explained in Chapter Four.

The analysis concluded to answer the fourth and final sub-question: What are factors in the center, other than resilience leadership and adult resilience that research has demonstrated relate to turnover? Each center-wide and individual variable reflective of turnover that was significantly related to another variable is included. ANOVAs are reported in a table that includes the number of responses, means, and standard deviations,

organized from lowest to highest mean. A summary description includes the variances (F), degrees of freedom (df), and probability of obtaining results at least as extreme (p). The first notation like this is in Chapter Four under the heading, “Anticipate staying at the current center 5 or more years”. The summary ends with a concluding statement that translates the statistical results into more common language. Linear regression results are summarized in a paragraph that includes the sample correlation coefficient (r) as it measures the closeness of association of the points in a scatter plot to a linear regression line based on those points and p-value (p), the proportion of the variance for a dependent variables that is explained by an independent variables (R^2) and p-value (p), and how one variables is impacted by the other in standard deviations. Cross-tabulation (Chi-Square) results are summarized in a paragraph that includes both the chi-square value and significance. Following the summary paragraph is a table that provides the total counts, percent within the outcome variable, and adjusted residual for the outcome variable. The Binary logistic regression summary includes the Nagelkerke R-square, Chi-Square, significance, and Wald statistic. It closes with a summary statement that includes the percent change when there is one point of difference.

CHAPTER FOUR

RESULTS

The findings in Table 4 and Table 5, along with the analysis process described in Chapter Three, provide insight to answer the main research question: What is the relationship between a center's resilience leadership practices, the adult resilience of the center director and teaching staff who work with children at least ten hours a week, and the turnover of staff who work at least ten hours a week. There were several variables that related to turnover, many of which reflect statistical significance to one or more DARS composite variables, and one which relates to all DERLS composite variables.

Individual Turnover Variables Related to DARS

There were three variables related to responses reflecting the individual that have significance with one or more of the DARS variables. In these analyses, the DARS variable is the outcome variable. The predictor variables that have significance were "Do you anticipate staying at the current center 5 or more years?" "How much longer do you anticipate staying in your current role at the center?" and "How much longer do you anticipate staying at the current center?"

Anticipates Staying at the Current Center 5 or More Years

Overall I observed a difference between those who anticipate staying at the current center five or more years and those who do not in DARS composite for relationships ($M = .13$, $SD = .92$ and $M = -.23$, $SD = 1.11$, respectively; $F = 5.893$; $df = 184$; $p = .016$), internal beliefs, ($M = .17$, $SD = .82$ and $M = -.29$, $SD = 1.21$, respectively; $F = 9.282$; $df = 184$; $p = .003$), initiative, ($M = .12$, $SD = .95$ and $M = -.22$, $SD = 1.04$,

respectively; $F = 4.646$; $df = 184$; $p = .032$), and self-control ($M = .14$, $SD = .96$ and $M = -.25$, $SD = 1.01$, respectively; $F = 6.982$; $df = 184$; $p = .009$). Table 6 displays the differences observed for each group. In this table, the anticipation of staying at the current center is listed from lowest to highest mean including standard deviation.

Professionals who do not anticipate staying at the current center five or more years scored the lowest on the DARS composite for relationships, internal beliefs, initiative, and self-control.

Length of Time Anticipated Staying in Current Role at the Center

These data result in a moderate and significant correlation between anticipation of staying in the current role at the current center and DARS composite for internal beliefs, $r(184) = .167$, $p = .023$. The relationship indicates that one can predict a small portion of professionals' anticipation of staying at the current center, $R^2 = .028$, $p = .023$, through the professional's self-report of internal beliefs. The specific relationships estimated found that, on average, an increase of one standard deviation of how much longer the professional anticipates staying in their current role at their current center was related to .167 standard deviation increase in DARS composite internal beliefs. In other words, when a person's self-reported DARS composite for internal beliefs increases, so does that person's anticipation of staying in their current role at their current.

These data result in a low magnitude, but significant correlation between anticipation of staying in the current role at the current center and DARS composite for self-control, $r(184) = .146$, $p = .047$. The relationship indicates that one can predict a small portion of professionals' anticipation of staying at the current center, $R^2 = .021$, $p = .047$, through the professional's self-report of self-control. The specific relationships

Table 6 Differences in Anticipation of Staying at Current Center and DARS Composite Variables

Anticipation of Staying at Current Center	N	Relationships		Internal Beliefs		Initiative		Self-Control	
		M	SD	M	SD	M	SD	M	SD
Does not anticipate staying at the current center five or more years	67	-.23	1.11	-.29	1.21	-.22	1.04	-.25	1.02
Anticipates staying at current center five or more years	118	.13	.92	.17	.82	.12	.95	.14	.96
Total	185	.000	1.00	.000	1.00	.000	1.00	.000	1.00

estimated found that, on average, an increase of one standard deviation of how much longer the professional anticipates staying in their current role at their current center was related to .146 standard deviation increase in DARS composite self-control.

How Much Longer the Professional Anticipates Staying at the Current Center

These data result in a weak and significant correlation between anticipation of staying at the current center and DARS composite for internal beliefs, $r(184) = .056, p = .001$. The relationship indicates that one can predict a small portion of professionals' anticipation of staying at the current center, $R^2 = .056, p = .001$ through the professional's

self-report of internal beliefs. The specific relationships estimated found that, on average, an increase of one standard deviation of how much longer the professional anticipates staying in their current role at their current center was related to a .237 standard deviation increase in DARS composite internal beliefs.

These data result in a weak and significant correlation between anticipation of staying at the current center and DARS composite for initiative, $r(184) = .149, p = .042$. The relationship indicates that one can predict a small portion of professionals' anticipation of staying at the current center, $R^2 = .022, p = .042$, through the professional's self-report of initiative. The specific relationships estimated found that, on average, an increase of one standard deviation of how much longer the professional anticipates staying in their current role at their current center was related to .149 standard deviation increase in DARS composite initiative.

These data show a moderate and significant correlation between anticipation of staying at the current center and DARS composite for self-control, $r(184) = .199, p = .007$. The relationship indicates that one can predict a small portion of professionals' anticipation of staying at the current center, $R^2 = .039, p = .007$, through the professional's self-report of self-control. The specific relationships estimated found that, on average, an increase of one standard deviation of how much longer the professional anticipates staying in their current role at their current center was related to .199 standard deviation increase in DARS composite self-control.

Center-wide Turnover Variables Related to DARS

There were four variables related to responses reflecting the centers that have significance with one or more DARS composite variables. In these analyses, the DARS

variable is the outcome variable. The predictor variables that have significance were derived from, “What is the turnover rate for the center in the current year?” “Is the turnover rate for the current year at or higher than 22%?” “What is the turnover rate for the center in the previous year?” and “Every year, about what percent of your staff do you lose?”

What is the Turnover Rate for the Center in the Current Year?

These data show a moderate and significant correlation between turnover rate for the center in the current year and DARS composite for self-control, $r(85) = .215$, $p = .046$. The relationship indicates that one can predict a small portion of the turnover rate for the center for the current year, $R^2 = .046$, $p = .046$, through the professional’s self-report of self-control. The specific relationships estimated found that, on average, an increase of one standard deviation of the turnover rate for the center in the current year was related to .215 standard deviation decrease in DARS composite self-control.

Is the Turnover Rate for the Current Year at or Higher than 22%?

Overall, I obtained a difference between centers that have a turnover rate at or higher than twenty-two percent for the current year and those that do not in the DARS composite for internal beliefs ($M = -.39$, $SD = 1.37$ and $M = .11$, $SD = .91$, respectively; $F = 4.266$; $df = 85$; $p = .042$), initiative ($M = -.26$, $SD = .93$ and $M = .19$, $SD = .94$, respectively; $F = 4.628$; $df = 85$; $p = .034$), and self-control ($M = -.41$, $SD = 1.10$ and $M = .17$, $SD = .84$, respectively; $F = 7.3$; $df = 85$; $p = .008$). Table 7 shows the differences observed for each group. In this table, the turnover rate for the current year being at or higher than twenty-two percent is listed from the lowest to highest mean including standard deviations. Centers that have a turnover rate that is at or higher than twenty-two

percent have professionals with lower DARS composite for internal beliefs, initiative, and self-control than centers that have a turnover rate lower than twenty-two percent.

Table 7 Differences in Centers that Have a Turnover Rate at or Higher than Twenty-Two Percent for the Current Year and DARS Composite Variables

Turnover Rate for the Year the Study was Completed	N	Internal Beliefs		Initiative		Self-Control	
		M	SD	M	SD	M	SD
Turnover Rate is = or > than 22%	31	-.39	1.37	-.26	.93	-.41	1.10
Turnover Rate is < than 22%	55	.11	.91	.19	.94	.17	.84
Total	86	-.07	1.12	.03	.96	-.07	.97

What is the Turnover Rate for the Center in the Previous Year?

These data show a moderate and significant correlation between turnover rate for the center in the year the study was completed and DARS composite for initiative, $r(85) = .260, p = .016$. The relationship indicates that one can predict a small portion of the turnover rate for the center for the previous year, $R^2 = .067, p = .016$, through the professional's self-report of initiative. The specific relationships estimated found that, on average, an increase of one standard deviation of the turnover rate for the center in the

previous year was related to .260 standard deviation decrease in DARS composite for initiative.

Every Year, about what Percent of your Staff do you Lose?

These data show a moderate and significant correlation between the percent of staff a center loses every year and DARS composite for internal beliefs, $r(85) = .259, p = .016$. The relationship indicates that one can predict a small portion of the percent of staff a center loses every year, $R^2 = .067, p = .016$, through the professional's self-report of internal beliefs. The specific relationships estimated found that, on average, an increase of one standard deviation of the percent of staff a center loses every year was related to .259 standard deviation decrease in DARS composite internal beliefs.

Center-Wide Variable Related to DERLS

Overall I observed a difference between centers that have half or more of the staff that have worked five years or less and those that do not in DERLS composite for relationships ($M = .21, SD = .71$ and $M = -.38, SD = .96$, respectively; $F = 10.626; df = 85; p = .002$), internal beliefs ($M = .22, SD = .78$ and $M = -.39, SD = .92$, respectively; $F = 10.746; df = 85; p = .002$), initiative ($M = .22, SD = .82$ and $M = -.30, SD = 1.00$, respectively; $F = 6.784; df = 84; p = .011$), and self-control ($M = .17, SD = .77$ and $M = -.34, SD = 1.00$, respectively; $F = 6.951; df = 84; p = .010$). Table 8 shows the differences observed for each group. In this table, the centers that have half or more of the staff that have worked five years or less is listed from lowest to highest mean including standard deviation. Centers with more experienced staff have professionals with lower DERLS composite for relationships, internal beliefs, initiative, and self-control than centers with less experienced staff.

Table 8 Differences in Centers that Have Half or More of Staff that Have Worked Five or More Years or Less and DERLS Composite Variables

Length of Time Staff Have Worked at Center	N	Relationships		Internal Beliefs		Initiative		Self-Control	
		M	SD	M	SD	M	SD	M	SD
Half or more of the staff have worked more than five years	32	-.38	.96	-.39	.92	-.30	1.00	-.34	1.00
More than half of the staff have worked five years or less	54	.21	.71	.22	.78	.22	.82	.17	.77
Total	86	-.01	.86	-.01	.88	.02	.92	-.02	.89

Sub-Question: Center Staff Self-Report Resilience Leadership Practices

Understanding how the administrators and teachers who work at least ten hours a week self-report resilience leadership practices is another focus of this research. To answer the question, descriptive statistics on the means of the DERLS were analyzed. The descriptive results were separated by teacher and administrator responses. Figure 8 is a bar graph summarizing the results.

Answering this sub-question resulted in opportunity to explore what other characteristics relate to the center director and staff reports of resilient leadership practices. Significance was found between variables in addition to the significance as to whether the center has half or more staff who have worked five years or less. There was

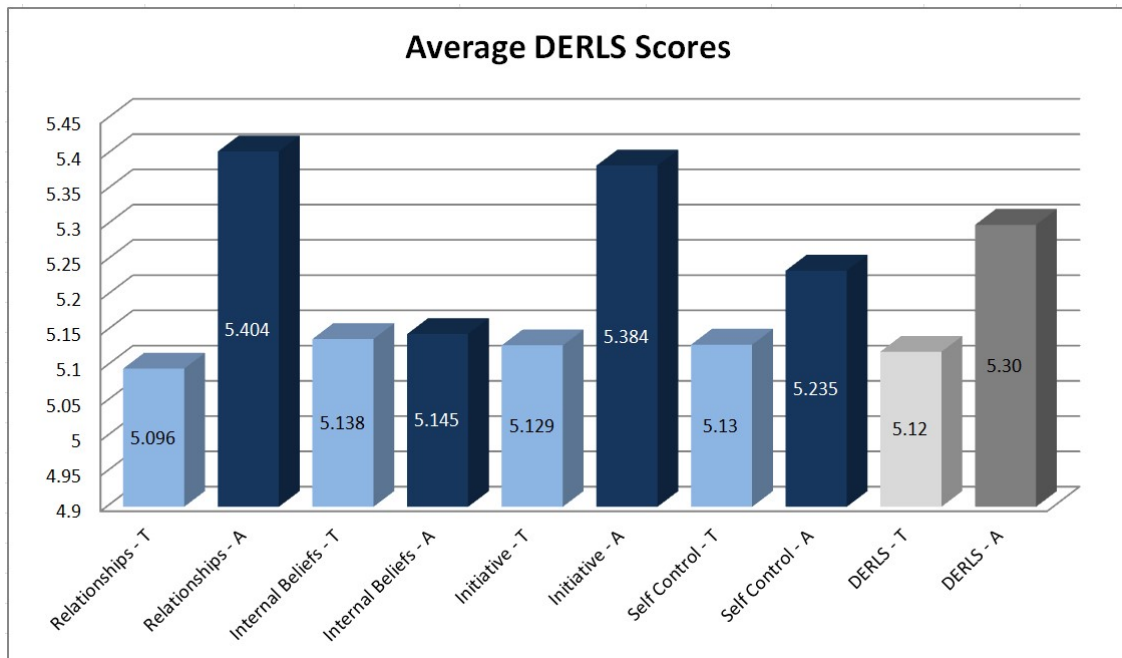


Figure 8. Average DERLS Scores in the areas of relationships, internal beliefs, initiative, self-control, and overall separated by “T” for teacher and “A” for administrator.

also significance between DERLS-Relationships and access to dental benefits and DERLS-Internal Beliefs and the program model

Review of Significance between Dental Benefits as Predictor and DERLS Composite for Relationships as Outcome

Overall I observed a difference in DERLS composite for relationships between professionals who have access to dental benefits and those who do not ($M = .03$, $SD = .99$ and $M = -.60$, $SD = 1.09$, respectively; $F = 3.905$; $df = 184$; $p = .050$). Table 9 shows the differences observed for each group. In this table, the centers that have half or more of the staff who have worked five years or less is listed from lowest to highest means including standard deviations. Professionals who did not have access to dental benefits

reported lower DERLS composite results for relationships than professionals with access to dental benefits.

Table 9 Differences in Professionals with Access to Dental Benefits and DERLS Composite for Relationship

Access to Dental Benefits from Employer or Household Member	N	M	SD
No access to dental benefits	10	-.60	1.09
Access to dental benefits	175	.03	.99
Total	185	.000	1.00

Since the N is 10 out of 185 respondents, the researcher looked at descriptors for those that represent the 10 professionals that do not have access to dental benefits. The professionals work in a Head Start or private child care center. The centers are either rated with three or four stars in Great Start to Quality, or the center has an empty star. They range in age from 25 to 63 years old. Six of the professionals have a bachelor's degree in early childhood education or related field. Six of them are teachers and four are administrators. There doesn't seem to be another area of the data where all 10 have the same response.

Review of Significance between Program Model as Predictor and DERLS Composite for Internal Beliefs as Outcome

These data show a moderate and significant correlation between the program model and DERLS composite for internal beliefs, $r(85) = .235, p = .030$. The relationship indicates that one can predict a moderate portion of the program model, $R^2 = .235, p = .030$, through the DERLS composite for internal beliefs. The specific relationships estimated found that, on average, an increase of one standard deviation of the program model was related to .235 standard deviation increase in DERLS composite internal beliefs. Table 10 provides descriptive information related to program model and DERLS composite for Internal Beliefs.

Sub-Question: Administrator and Teacher Self-Report Their Own Adult Resilience

How the administrators and teachers that work at least ten hours a week self-report their own adult resilience is another finding from this research. To answer the question, descriptive statistics on the means of the DARS were analyzed. The descriptive results were separated by teacher and administrator responses. Figure 9 is of a bar graph summarizing the results.

Sub-Question: Early Childhood Professionals Who Leave the Profession

The research design was intended to find the turnover rate of high quality early childhood professionals who decide to leave the profession. In reviewing the questions asked, and responses submitted, there is not enough data to run an analysis to answer this question. The analysis does show findings related to similar topics. For example, the average length of time professionals anticipate staying in their current role at their current center is 3.76 years. The researcher anticipated that the average length of time

Table 10 Descriptive for Program Model and DERLS Composite for Internal Beliefs

Program Model	N	M	SD
Only in-person	25	-.33	1.00
Only virtual	14	.09	.67
Both in-person and virtual	44	.11	.85
Not currently offering programming	3	.43	.53
Total	86	-.01	.88

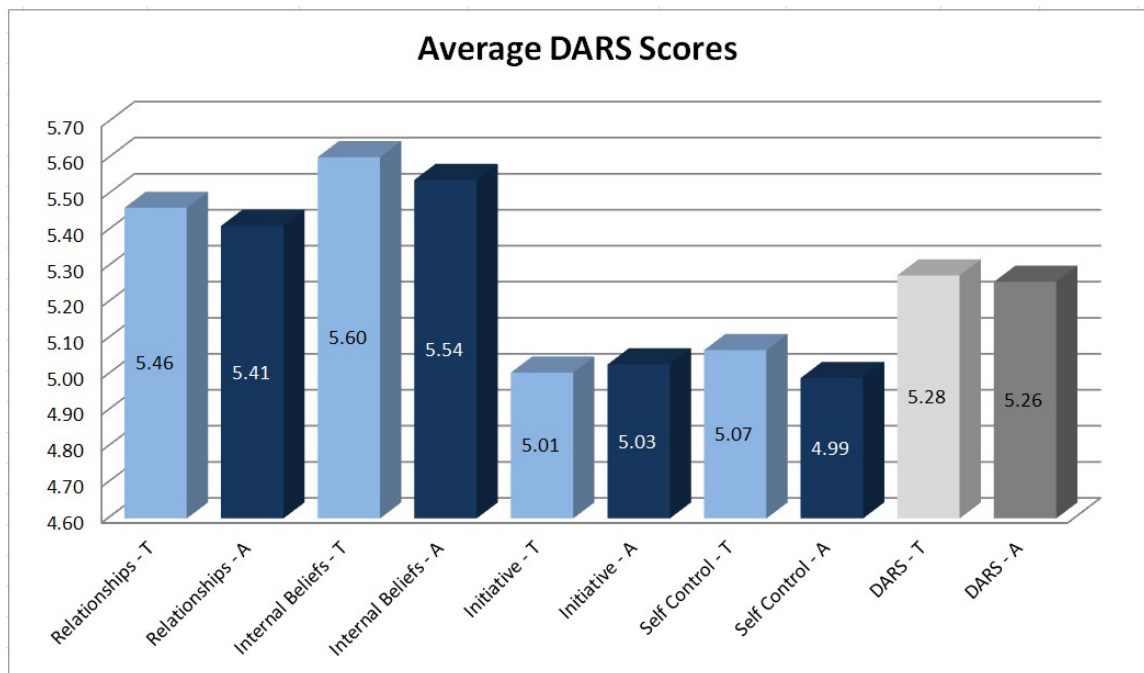


Figure 9. Average DARS Scores in the areas of relationships, internal beliefs, initiative, self-control, and overall separated by “T” for teacher and “A” for administrator. average anticipated time professionals plan to stay employed in a child care or school setting.

professionals anticipate staying in their current center would be the same or higher, yet it is a bit lower at 3.75815. This signifies the data for these responses could be caused by respondents not reading the questions closely or completely. The researcher did find the average length of time professionals anticipate staying employed at a child care center or school was longer at 4.33, which means most responded they planned five years or more, which is the same as the median.

Another area for caution in this analysis is it does not take into count professionals that may be retiring. Ten participants were 62 years or older, signifying eligibility for retirement. Twenty-two participants were 57 years through 61 years, meaning they may not have selected to stay employed in child care or school for five or more years due to plans for retirement. Further research in this area would need to be done to better understand how retirement may impact the

Sub-Question: Analysis with Turnover Variables as Outcomes

Analysis of variables reflective of turnover as an outcome found significance in relation to the age, benefits and qualifications of the professional. There is also significance in relation to the quality of the center as measured by accreditation and Michigan's Great Start to Quality. While previous research has found significant relationship between compensation and co-worker relationships, this study did not

Review of Significance between Accreditation or Quality Rating of a Program and Variables that Represented Turnover

There are both center-wide and individual variables that represented turnover and were significantly related to predictor variables, which were related to accreditation or quality rating. Accreditation as a predictor is only significantly related to center-wide

turnover variables (i.e., the percent of staff a program loses ever year). Quality rating as a categorical variable is significantly related to both center-wide and individual variables reflective of turnover. Quality rating as a continuous variable is significantly related to individual variables that represented turnover. The Great Start to Quality Rating was used as both a categorical variable and a continuous variable because each star rating (i.e, zero, one, two) can be considered distinct groups or interpreted as having an infinite number of values. It can be interpreted as having an infinite number of values between them because there is a range of scores in different categories in between each star rating number.

Center-wide variables that represented turnover. Significance was found between the accreditation and quality rating of a center when they were categorical predictor variables and variables representing turnover were the outcome variables. The outcome variables that were significantly related are the average number of years of experience for staff and the percent of staff a center loses ever year. The following will provide more information from the ANOVA results.

Accreditation as predictor variable with percent of staff a program loses every year as outcome variable. Overall I observed a difference in the center's accreditation status and the average number of years of experience for administrators ($M = .4.74$, $SD = 3.132$ and $M = 9.50$, $SD = 6.364$, respectively; $F = 4.353$; $df = 85$; $p = .040$). Table 11 shows the differences observed for each group. In this table, the accreditation status of the center is listed from lowest to highest mean including standard deviation.

Administrative staff at centers that are accredited centers have fewer years of experience than administrators at centers that are not accredited.

Table 11 Difference in a Center's Accreditation Status and the Average Number of Years of Experience for Administrative Staff.

Accreditation Status of the Center	N	M	SD
Not Accredited	84	4.74	3.132
Accredited	2	9.50	6.364
Total	86	4.85	3.252

Quality rating as predictor with average number of years of experience for staff as outcome. Overall I observed a difference in the quality rating of a site and the percent of staff the center loses every year ($F = 3.518$; $df = 83$; $p = .011$). Table 12 shows the differences observed for each group. In this table, the quality rating of the site is listed from lowest to highest mean including standard deviation. Sites with no quality rating had the least amount of turnover, followed by sites with a 4-star rating, then a 3-star rating, then a 5-star rating, and sites with a 2-star rating.

Individual variables that represented turnover. Significance was found between the quality rating of a center when it was both continuous and categorical. Two of the four outcome variables were significantly related to quality rating when both variables were continuous and categorical. They are the anticipated length of time at the current center and the anticipated length of time employed in child care or a school.

Working at the current center one or more years and the number of years working at the current center were only significantly related when the quality rating was a continuous

Table 12 Differences in Quality Rating of Site and Percent of Staff the Center Loses Every Year

Quality Rating of Site	N	M	SD
Quality rating not available	21	5.095	9.3896
4-star rating	31	6.355	9.2179
3-star rating	29	8.672	10.200
5-star rating	2	12.500	10.607
2-star rating	1	40.000	.
Total	84	7.387	10.206

variable. Individual position turnover rate and the individual turnover rate greater than 50% were only significantly related when the quality rating was a categorical variable. The Great Start to Quality Rating was used as both a categorical variable and a continuous variable because each star rating (i.e, one, two, three) can be considered distinct groups or interpreted as having infinite number of values between them because

there is a range of scores in different categories in between each star rating number. The following will provide more information from the logistic regression, linear regression, ANOVA, and Crosstab results.

Quality rating continuous as predictor with four turnover variables outcomes.

The Nagelkerke R-square, which measures the strength of an association, for the analysis between the quality rating of a center as a continuous predictor variable and working at the current center one more year as a categorical outcome variables was .102, indicating a weak but significant overall model fit using this one variable ($\chi^2 = 9.496, p = .002$). The quality rating of a center negatively contributed to a professional working at the current center one or more year (Wald = 9.299, $p = .002$). On average, every one point increase in Great Start to Quality rating decreased the likelihood of a professional working at the current center one or more year by about 34%. These results indicate an important ongoing relationship between a center's great start to quality rating and time a professional is at a center. As the Great Start to Quality Rating increased, the number of professionals at the center who worked there one year or more decreased.

The data showed a moderate, significant correlation between the quality rating of a center and number of years working at the current center, $r(181) = .16, p = .030$; anticipated length of time at current center, $r(181) = .194, p = .009$; and anticipated length of time employed in child care or a school, $r(181) = .211, p = .004$ when the quality rating of the center was a continuous variable rather than categorical. These relationships indicate that one can predict a moderate portion of the number of years the staff has worked at the center, $R^2 = .026, p = .030$; a large portion of the anticipated length of time at the current center, $R^2 = .038, p = .009$; and a large portion of the

anticipated length of time employed in child care or a school, $R^2 = .045$, $p = .004$ by the quality rating of a center. The specific relationship estimated found that, on average, an increase of one standard deviation of quality rating predicted an increase in number of years working at the current center by .463, anticipated length of time at current center by .194, and anticipated length of time employed in child care or a school by .172. In other words, the quality rating of the center is positively related to length of time professionals are at the center.

Quality rating categorical as predictor with four turnover variables as outcomes. Overall, I observed a difference in the quality rating of a site and the individual position turnover percent ($F = 2.569$; $df = 181$; $p = .040$), anticipated length of time at current center ($F = 2.791$, $df = 181$, $p = .028$), and anticipated length of time employed in child care or school ($F = 2.737$, $df = 181$, $p = .030$). Table 13 shows the differences observed for each group, which does not include centers with a one-star rating because no sites with a one-star rating participated. In this table, the quality rating of the site is listed from lowest to highest, including mean and standard deviation. Sites with 2-star and 5-star ratings had the lowest mean for individual position turnover percent, as well as anticipated length of time in the current center and anticipated length of time employed in child care or school. Sites with 3-star rating had the highest mean for individual position turnover percent. Sites with four-star ratings had the highest mean for anticipated length of time at current center and anticipated length of time employed in child care or school. In other words, a site without a quality rating had an average turnover rate of 4.98% for individual positions. In addition, a professional at a site without a quality rating anticipated staying at the current center about 3.18 years longer.

Crosstab analysis found a significant relationship between the quality rating for a center and the individual position turnover rate being at or greater than 50% ($\chi^2 = 9.921$, $p = .042$). The results agree that we should reject the null hypothesis and accept the alternative hypothesis, i.e., infer that Great Start to Quality rating is related to whether a person is in a position with a turnover rate at or higher than 50%. Table 14 summarizes

Table 13 Differences in Quality Rating of Site and Individual Position Turnover Percent, Anticipated Length of Time (LoT) at Current Center, and Anticipated Length of Time (LoT) Employed in Child Care or a School.

Site Quality Rating	N	Individual Position Turnover Percent		Anticipated LoT at Current Center		Anticipated LoT Employed in Child Care or a School	
		M	SD	M	SD	M	SD
Quality rating not available	47	4.979	16.69	3.18	.27	3.82	1.72
2-star rating	1	.000	.	2.00	.	5.00	.
3-star rating	55	18.509	30.70	3.94	1.55	4.46	1.20
4-star rating	76	8.211	21.93	4.02	1.5	4.56	1.05
5-star rating	3	.000	.000	2.67	2.08	3.67	2.31
Total	182	10.31	24.15	3.74	1.65	4.33	1.34

the findings from the analysis. Those at a center with a 3-star rating are most likely to be in a position with a turnover rate at or higher than 50%.

Review of Significance between Staff Qualification Information and Variables that Represented Turnover

When analyzing the significance between variables that represented turnover and variables that represented staff qualifications, the only significant relationships were when the turnover variables were center-wide. The predictor variables are Bachelor's in Early Childhood Education, a degree beyond Bachelor's, a graduate degree in early

Table 14 Comparing the Percent of Professionals in a Position with a Turnover Rate at or Higher than 50% from Centers with Different Great Start to Quality Ratings.

Quality Rating	N of Cases	Percent in a Position with a Turnover Rate at or Higher than 50%	Adj Residual
Not Available	47	8.5%	-1.7
2-star rating	1	0%	-.4
3-star rating	55	29.1%	3.0
4-star rating	76	13.2%	-1.0
5-star rating	3	0%	-.8
Total	182	16.5%	

Note: $\chi^2 = 9.921, p = .042$

childhood education, an early childhood degree preceding Bachelor's, and education not specific to early childhood. Due to all outcome variables being continuous, either an ANOVA or Linear Regression analysis was completed and summarized.

Bachelor's in early childhood education as predictor with both percent of turnover in the current year and percent of staff lost every year as outcomes.

Overall, I observed a difference in whether or not the administrator has a Bachelor's degree in early childhood education (BA in ECE) and the turnover rate for the center for the current year ($M = 19.53$, $SD = 22.679$ and $M = 37.60$, $SD = 42.37$, respectively; $F = 6.233$; $df = 85$; $p = .014$) and the percent of staff the center loses every year ($M = 5.114$,

Table 15 Differences in whether and Administrator has BA in ECE and Turnover Rate for Center for Current Year and the Percent of Staff the Center Loses Every Year.

Administrator has BA in ECE	Turnover Rate for Current Year			Percent of Staff Center Loses Every Year		
	N	M	SD	N	M	SD
Yes	66	19.53	22.679	66	5.114	7.0142
No	20	37.60	42.371	20	14.650	14.7122
Total	86	23.73	29.216	86	7.331	10.1206

$SD = 7.0142$ and $M = 14.650$, $SD = 14.7122$, respectively; $F = 16.039$; $df = 85$; $p < .000$).

Table 15 shows the differences observed for each group. In this table, whether the administrator has a BA in ECE is listed from lowest to highest mean including standard deviation. Administrators who have a BA in ECE work at centers with lower turnover for the current year and with lower percent of staff that the center loses every year. In other words, an administrator with a BA in ECE has a mean turnover percent of 5.114 every year, with a mean percent of 19.53 for the center for the year data was gathered.

Degree beyond a Bachelor's as predictor with percent of staff lost every year as outcome. Overall I observed a difference in whether the administrator has a degree beyond a Bachelor's in early childhood education (BA in ECE) or related field and the percent of staff the center loses every year ($F = 5.760$; $df = 85$; $p = .001$). Table 16 shows the differences observed for each group. In this table, whether or not the administrator has a degree beyond BA in ECE or related field is listed from lowest to highest mean including the standard deviation. Administrators who have a degree beyond BA in ECE or related field work at centers with a lower percent of staff the center loses every year.

Graduate degree in early childhood education as predictor with both percent of turnover in the previous year and percent of staff lost every year as outcomes.

The data showed a moderate, significant correlation between the administrator having a graduate degree in early childhood education with a focus in education or administration and the center turnover rate for the previous year, $r(85) = .279$, $p = .009$. This relationship indicates that one can predict a small portion of the center turnover rate for the previous year, $R^2 = .078$, $p = .009$, by the administrator having a graduate degree in early childhood education with a focus in education or administration. The specific

Table 16 Differences in whether Administrator has a Degree Beyond a BA in ECE or Related Field and Percent of Staff the Center Loses Every Year

Administrator has Degree Beyond BA in ECE or Related Field	N	M	SD
Master's Degree and Education Specialist Degree	3	3.667	5.5076
Master's Degree	41	5.134	7.8143
None of the Above	26	5.846	7.3127
No Response	16	16.063	14.9464
Total	86	7.331	10.1206

relationship estimated found that, on average, an increase of one standard deviation of the administrator having a graduate degree in early childhood education with a focus in education or administration predicted an increase in the center rate for the previous year of 16.977.

These data also show a moderate and significant correlation between the administrator having a graduate degree in early childhood education with a focus in education or administration and the percent of staff the center loses every year, $r(185) = .224, p = .038$. The relationship indicates that one can predict a small portion of the administrator having a graduate degree in early childhood education with a focus in education or administration, $R^2 = .050, p = .038$, through the percent of staff the center

loses every year. The specific relationships estimated found that, on average, an increase of one standard deviation of the administrator having a graduate degree in early childhood education with a focus in education or administration to a -3.10 standard deviation in the percent of staff the center loses every year. In other words, an administrator having a graduate degree as described is at a center with a lower percent of staff that turns over every year than an administrator that does not have a graduate degree as described.

Early childhood degree preceding Bachelor's as predictor with three turnover variables as outcomes. For this study, an early childhood degree preceding a Bachelor's could be a Child Development Associates from the Council for Professional Recognition or an Associate Degree. These data show a moderate and significant correlation between the administrator having an undergraduate degree in early childhood education and the percent of staff the center loses every year, $r(85) = .312, p = .003$. The relationship indicates that one can predict a small portion of the administrator having an undergraduate degree in early childhood education, $R^2 = .097, p = .003$, through the percent of staff the center loses every year. The specific relationships estimated found that, on average, an increase of one standard deviation of the administrator having an undergraduate degree in early childhood education to a .312 standard deviation increase in the percent of staff the center loses every year.

The data showed a moderate, significant correlation between having an early childhood degree preceding a Bachelors and the center turnover rate for the current year, $r(185) = .232, p = .032$. This relationship indicates that one can predict a small portion of the center turnover rate for the current year, $R^2 = .232, p = .032$, by the administrator

having an early childhood degree preceding a Bachelors. The specific relationship estimated found that, on average, an increase of one standard deviation of having an early childhood degree preceding a Bachelor's predicted an increase in the center turnover rate for the current year of 4.586 points.

Overall I observed a difference in the administrator having an early childhood degree preceding a Bachelors and the turnover rate for the current year in percent ($M = 38.50$, $SD = 39.105$ and $M = 20.36$, $SD = 25.631$, respectively; $F = 5.275$; $df = 85$; $p = .024$). Table 17 shows the differences observed for each group. In this table, the administering having an early childhood degree preceding a Bachelor's is listed from lowest to highest mean including standard deviation. Administrators without an early childhood degree preceding a Bachelor's work at centers with a lower turnover rate for the current year.

Table 17 Difference in an Administrator Having an Early Childhood Degree Preceding a Bachelors and the Turnover Rate for the Current Year in Percent

Has a Degree Preceding a Bachelors	N	M	SD
No	70	20.36	25.631
Yes	16	38.50	39.105
Total	86	23.73	29.216

Education not specific to early childhood as predictor with percent of staff lost every year as outcome. Overall I observed a difference in whether an administrator has education not specific to early childhood and the percent of staff that is lost every year ($M = 10.353$, $SD = 13.0706$ and $M = 5.356$, $SD = 7.0782$, respectively; $F = 5.263$; $df = 85$; $p = .024$). Table 18 shows the differences observed for each group. In this table, the administrator having education not specific to early childhood is listed from lowest to highest mean including the standard deviation. Administrators with education not specific to early childhood have a lower percent of staff lost every year.

Review of Significance between Variables Representing Center-level Decisions or Personal Characteristics and Variables that Represented Turnover

There are both center-wide and individual variables that represented turnover significantly related to predictor variables related to center-level decisions or personal characteristics. Predictor variables are either related to center-wide variables or individual variables that reflected turnover. The following will provide a summary by center-wide outcome variables and then individual outcome variables.

Individual variables that represented turnover. Linear regression analysis found significance between the program model with the number of years the professional had worked at the current center as well as age with the number of years the professional had worked at the current center. ANOVA analysis found significance between access to dental benefits with the average number of years of experience for staff. Cross-tab analysis found significance between whether a classroom colleague completed a survey with the center turnover rate of 22% or higher the previous year through. The following will provide more information from the analysis.

Table 18 Difference in an Administrator Having Education not Specific to Early Childhood and the Percent of Staff that is Lost Every Year.

Has a Degree Not Specific to Early Childhood	N	M	SD
No	52	5.356	7.0782
Yes	34	10.353	13.0706
Total	86	7.331	10.1206

Number of paid teachers working ten or more hours a week as predictor with turnover in the previous year as outcome. The data showed a moderate, significant correlation between the number of paid teacher positions and the center turnover rate for the previous year, $r(85) = .240, p = .026$. This relationship indicates that one can predict a small portion of the center turnover rate for the previous year, $R^2 = .058, p = .026$, by the number of paid teacher positions. The specific relationship estimated found that, on average, an increase of one standard deviation of the number of paid teacher positions predicted an increase in the center turnover rate for the previous year of -1.319 points. This means if a center increases the number of paid teacher positions, the turnover rate was lower for the previous year.

Access to dental benefits and description of role as predictors with average number of years of experience for staff as outcome. Overall I observed a difference in the average number of years of experience for the staff between those that have access to

dental benefits and those that do not ($M = 1.00$, $SD = 2.00$ and $M = 5.04$, $SD = 3.191$, respectively; $F = 6.238$; $df = 85$; $p = .014$). Table 19 shows the differences observed for each group. In this table, the centers that have half or more of the staff who have worked five years or less listed from lowest to highest mean, including standard deviation. Centers with more experienced staff have professionals with higher access to dental benefits than centers with less experienced staff. dental benefits is limited to ten. This adds further limitation to the ten by only representing those that have worked five years or less, resulting in four.

The data showed a moderate, significant correlation between the role of the professional and the average number of years of experience, $r(85) = .292$, $p = .006$. This relationship indicates that one can predict a small portion of the average number of years of experience, $R^2 = .086$, $p = .006$, by the role of the professional. The specific relationship estimated found that, on average, an increase of one standard deviation of the role of the professional predicted the average number of years of experience of -1.836 points.

Classroom colleague also completed a survey as predictor with turnover in the previous year is at or higher than 22% as outcome. Crosstab analysis found a significant relationship between whether a classroom colleague also completed a survey and the center turnover in the previous year being at or higher than 22% ($\chi^2(86) = 4.008$, $p = .045$). The results agree that we should reject the null hypothesis and infer that a classroom colleague completing a survey is related to whether the center turnover rate for the previous year was at or higher than 22%. Table 20 summarizes the findings from the

Table 19 Differences in Average Number of Years of Experience for Staff at Center and Access to Dental Benefits

Length of Time Staff Have Worked at Center	N	Mean	SD
Half or more of the staff have worked five years or less	4	1.00	2.000
More than half of the staff have worked more than five years	82	5.04	3.191
Total	86	4.85	3.252

Table 20 Comparing Whether a Classroom Colleague of the Participant also Completed a Survey and whether the Center Had a Turnover Rate at or Higher than 22% the Previous Year.

Action of Classroom Colleague	N of Cases	Center Turnover Rate the Previous Year was at or Higher than 22%	Adj Residual
Did not complete a survey	80	41.3%	-2.0
Completed a survey	6	83.3%	2..0
Total	186	44.2%	

Note: $\chi^2 = 4.008, p = .045$

analysis. Those who had a classroom colleague also complete a survey were most likely to be at a center with a turnover rate at or higher than 22% the previous year.

This finding creates more questions than actions to be taken in relation to turnover. For example it notes there is a relationship, but does not provide why that relationship occurred. It is further discussed in Chapter Five of this dissertation, including participants with a relevant colleague completing the survey. The significance could be due to an outlier or small group of outliers.

Individual variables that represented turnover. Linear regression analysis found significance between the number of paid teachers working ten or more hours a week with the turnover rate for the previous year as well as the description of a person's role with the average number of years of experience. ANOVA analysis found significance between center supported T.E.A.C.H. Scholarship participation with the anticipated length of time in the current role; received paid time off with individual position turnover rate; and the role in the center at least ten hours a week with the number of years worked at the current center. Cross-tab analysis found significance between the center supported T.E.A.C.H. Scholarship participation with anticipated staying at current center, possibly in the current role, five or more years; role in the center at least ten hours a week with the individual position turnover rate being at or higher than 50%; and access to medical benefits with the individual position turnover rate being at or higher than 50%. The following will provide more information from the analysis.

Center supports T.E.A.C.H. Scholarship participation as predictor with both individual anticipates staying in the current center, possibly in the current role, five or more years and anticipated time in current role as outcomes. Crosstab analysis found a

significant relationship between the center supporting T.E.A.C.H. Scholarship participation and the individual anticipating staying in the current center, possibly in the current role, five or more years ($\chi^2 (182) = 5.702, p = .017$). The results agree that we should reject the null hypothesis and infer that a center supporting T.E.A.C.H. Scholarship participation is related to whether a person anticipates staying in the current center, possibly in the current role, five or more years. Table 21 summarizes the findings from the analysis. Those at a center that supports T.E.A.C.H. Scholarship participation are most likely to anticipate staying at the current center five or more years.

Table 21 Comparing Professional Anticipation to Stay at the Current Center Five or More Years and the Center Supporting T.E.A.C.H. Scholarship Participation.

The Center Supports T.E.A.C.H. Scholarship Participation	N of Cases	Individual Anticipates Staying at the Current Center, Possibly in the Current Role, 5 or More Years	Adj Residual
No	45	48.9%	-2.4
Yes	137	68.6%	2.4
Total	182	63.7%	

Note: $\chi^2 = 5.702, p = .017$

Overall I observed a difference in the center supporting T.E.A.C.H. Scholarship participation and the length of time a professional anticipates staying in the current role at the current center ($M = 3.33$, $SD = 1.803$ and $M = 3.90$, $SD = 1.58$, respectively; $F = 3.997$; $df = 181$; $p = .047$). Table 22 shows the differences observed for each group. In this table, the centers that support T.E.A.C.H. Scholarship participation were listed from lowest to highest mean including standard deviation. Centers that support T.E.A.C.H. Scholarship participation have a higher amount of professionals that anticipate staying in the current role at the current center.

Table 22 Differences in Center Support for T.E.A.C.H. Scholarship Participation and the Length of Time a Professional Anticipated Staying in the Current Role at the Current Center

Center Support for T.E.A.C.H. Scholarship Participation	N	M	SD
Center does not support T.E.A.C.H. Scholarship Participation	45	3.33	1.803
Center supports T.E.A.C.H. Scholarship Participation	137	3.90	1.58
Total	182	3.76	1.657

Both program model (e.g., in-person, virtual, in-person and virtual, not currently offering programming) and age of individuals as predictors with number of years working at the current center as outcome. These data showed a moderate and

significant correlation between the program model (i.e., in-person, virtual, not offering program, or both in person and virtual) and the number of years the professional has been working at the current center, $r(85) = .310, p = .004$. The relationship indicates that one can predict a small portion of the number of years the professional has been working at the center, $R^2 = .096, p = .004$, by the program model. The specific relationships estimated found that, on average, an increase of one standard deviation of the program model was related to -.310 standard deviation decrease in the number of years the professional has been working at the current center.

While May and Ingersoll (2011) found age has a U-shaped relationship with turnover, and so [they] control for teachers younger than 30 and older than 50, the categorical variable that designated whether the professional is 30 or older was not significantly related to variables reflective of turnover. These data showed a moderate and significant correlation between the age of the professional and the number of years the professional has been working at the current center, $r(184) = .275, p < .000$. The relationship indicates that one can predict a small portion of the number of years the professional has been working at the center, $R^2 = .076, p < .000$, from the age of the professional. The specific relationships estimated found that, on average, an increase of one standard deviation of the age was related to .275 standard deviation increase in the number of years the professional has been working at the current center.

Receives paid time off as predictor with individual position turnover rate as outcome. Overall I observed a difference in the staff that receive paid time off and individual position turnover rate ($M = 9.341, SD = 22.8017$ and $M = 25.778, SD = 39.6887$, respectively; $F = 4.087; df = 184; p = .045$). Table 23 shows the differences

Table 23 Differences in staff that receive paid time off and individual position turnover rate years working at the center than an administrator.

Receives Paid Time Off	N	M	SD
Receives paid time off	176	9.341	22.8017
Does not receive paid time off	9	25.778	39.6887
Total	185	10.141	23.9905

observed for each group. In this table, the professionals that receive paid time off were listed from lowest to highest mean including standard deviation. Professionals that receive paid time off have a lower turnover rate than professionals that do not receive paid time off.

Role in the center at least ten hours a week as predictor with both number of years working at the current center and individual position turnover rate at or greater than 50% as outcomes. Overall I observed a difference in the role of the professional and the number of years the professional has been working at the center ($M = 3.818$, $SD = 3.7351$ and $M = 5.614$, $SD = 5.5784$, respectively; $F = 6.769$; $df = 184$; $p = .010$). Table 24 shows the differences observed for each group. In this table, the role of the professional is listed from lowest to highest mean including standard deviation. Teachers have fewer Crosstab analysis found a significant relationship between the professional's role in the center at least ten hours a week and the individual position turnover rate being at or

Table 24 Differences in Role of the Professional and Number of Years the Professional has been Working at the Center

Role of the Professional	N	M	SD
Teacher	99	3.818	3.7351
Administrator	86	5.614	5.5784
Total	185	4.653	4.7553

greater than 50% ($\chi^2(185) = 3.912, p = .048$). The results agree that we should reject the null hypothesis and infer that the role a professional is in at least ten hours a week is related to whether the individual position turnover rate is at or greater than 50%. Table 25 summarizes the findings from the analysis. Those in a teacher role are most likely to be in an individual position with a turnover rate at or greater than 50% whereas those in a center director or administrator role are less likely to be in an individual position with a turnover rate at or greater than 50%.

Access to medical benefits as predictor with having worked at the center one year or more as outcome. Crosstab analysis found a significant relationship between access to medical results agree that we should reject the null hypothesis and infer that access to medical benefits is related to having worked at the center one year or more. Table 26 summarizes the findings from the analysis. Those with access to medical benefits are least likely to have worked at the center less than a year.

Table 25 Comparing the Role the Professional is in at Least 10 Hours a Week and the Individual Position Turnover Rate at or Greater Than 50%.

Role of the Professional	N of Cases	Individual Position Turnover Rate is at or Greater than 50%	Adj Residual
Center Director	86	10.5%	-2.0
Teacher	99	21.2%	2.0
Total	185	16.2%	

Note: $\chi^2 = 3.912, p = .048$

Table 26 Comparing Access to Medical Benefits and the Individual Having Worked at the Center One Year or More

Has Access to Medical Benefits	N of Cases	Worked at the Center Less than a Year	Adj Residual
No	5	40.0%	2.7
Yes	180	10.0%	-2.1
Total	185	10.8%	

Note: $\chi^2 = 4.541, p = .033$

CHAPTER FIVE

DISCUSSION

The purpose of this study was to determine if there is a relationship between center director and early childhood teacher resilience, resilient leadership practices, and turnover at licensed child care centers. The data were analyzed to answer this question, as well as four sub-questions. The following sections will summarize the findings in relation to the main research question and sub-questions, and include how the findings relate or do not relate to the literature.

Review of Critical Findings Related to Research Questions

There were six main findings from this study. First, there were significant relationships between several variables representing turnover and all four areas of the DARS, which are relationships, initiative, internal beliefs, and self-control. The second is there are not as many variables significantly related to the DERLS as there are the DARS. The third is that there is not a significant difference in how the center director and teacher self-report resilient leadership practices. The fourth is that there is not a significant difference in how the administrator and teachers self-report their adult resilience. The fifth is a summary of what is needed to determine more information about high quality early childhood professionals who leave the profession. The last is that there are three categories of variables significantly related to variables that reflected turnover.

Main Research Question: There are Significant Relationships between Several Variables Representing Turnover and all Four Areas of the DARS

The variables representing turnover speak to both past turnover and anticipation for retention. This aligns with the literature review that highlighted how resilience is connected to other variables that research has found related to turnover. This includes program quality, professional qualifications, and center supports for educational staff.

The analysis found that the longer a person anticipates staying in their role, at their center, or in the profession, the higher their adult resilience rating. The analysis also found that the higher the center's turnover rate, the lower the individual adult resilience rating. This supports the hypothesis that if early childhood teachers have high resilience the center's turnover will be less than if the early childhood teachers have low resilience.

There are not as Many Variables that Reflected Turnover Significantly Related to DERLS as there are DARS

There is one variable that reflected turnover and is significantly related to the DERLS areas of relationships, internal beliefs, initiative, and self-control. That variable is whether the center had new staff because half or more had worked five years or less. Centers with new staff actually had higher DERLS ratings than centers with half or more of their staff that had worked more than five years. More research is needed to understand why this is the case. Could it be that more experienced staff do not experience as much resilient leadership practices because they have themselves developed those practices to implement?

Sub-Question: How the Center Director and Teacher Self-report Resilient Leadership Practices

While there is not a significant difference between how center directors and teachers self-rated DERLS practices, on average center directors self-rated the implementation of the practices at a higher level than teachers. The focus on DERLS also included the finding of significance between both DERLS with both access to dental benefits and program model. Professionals with access to dental benefits self-reported higher DERLS composite for relationships than those that did not. This makes one wonder what could be connected to both relationships and access to dental benefits. For example, access to dental benefits included whether it was from the employer or someone else in the staff members household. Further analysis could determine whether there is a difference in the relationships between access to benefits and the relationships component of DERLS by separating access to dental benefits provided by the employer from access to dental benefits provided by someone in the household.

In addition, a professional's rating of DERLS in the area of internal beliefs was rated differently based on the program model. A center not currently offering programming had the highest DERLS rating in the area of internal beliefs. This could be representative of the impact of the pandemic on the community and professionals feeling it best to quarantine at home than have professionals, children, and families broadening their exposure by being with each other at a center. The practices of their employer aligning, while also still providing compensation to them, could result in a higher rating of internal beliefs on the DERLS.

Sub-Question: How the Center Director and Teacher Self-report their Adult Resilience

Similar to how the center director and teacher self-report resilient leadership practices, there is not a significant difference of their self-reported adult resilience. This could be for a variety of reasons including for most sites there was one teacher rather than multiple teachers that participated, the center director is the one who shared the opportunity with the teachers so they may have chosen one that may have provided higher ratings than others, or the center director is part of the same community as the teacher so their resilience levels are impacted by similar external factors. What is important to note is that teachers self-reported adult resilience a bit higher than center directors. There are also multiple reasons why this could be, including center directors have had many more decisions to make like when to return to in-person learning that could lower a person's resilience.

Sub-Question: High Quality Early Childhood Professionals who Leave the Profession

As noted in Chapter Four, there was not sufficient data to answer this question. This is included as a subject in the main finding section because it was a research sub-question. Future research could include gathering information from the center director related to what professionals plan to do after ending their role at the center. The options could include no longer working in the profession.

Sub-Question: Relationship between Variables that Reflected Turnover and other Categories

There were significant relationships between three categories of variables and variables that reflected turnover. The three categories of variables are program quality,

qualifications, and center level decisions or personal characteristics. The following paragraphs will summarize each category.

Program quality. There is significant relationship between the NAEYC Accreditation or Great Start to Quality rating of a center and both center-wide and individual variables that reflected turnover. While Great Start to Quality is designed so that the higher the number of stars a center has the higher the quality, the higher the number of stars a center had did not relate to lower turnover or higher anticipation of a professional staying. This warrants further analysis and research. For example, Great Start to Quality has different categories that are measured like staff qualifications and professional development. Analysis or research could explore the relationship between turnover and each category of Great Start to Quality to see if there is a difference by Great Start to Quality category.

Qualification of the center director. The qualification of the center director had an impact on variables that reflected turnover. Centers with lower turnover had a center director with Bachelor's in early childhood education, a degree beyond Bachelor's in early childhood education, a graduate degree in early childhood education with a focus in education or administration, or a degree not specific to early childhood education. Centers with higher turnover had a center director with an undergraduate degree in early childhood. Some of these findings align with the literature review noting an administrator should have at least an undergraduate degree in early childhood education and a qualification in administration. It could also represent that a Bachelor's degree or higher provides a center director with an understanding of leadership theory and implementation

as the research recommends. This finding both aligns with prior research, and provides information for further related research.

Further related research could include analyzing whether there is a difference in the relationship between turnover and the major of the Bachelor's or graduate degree. In similar fashion, analysis could test for the relationship between turnover and level of degree (i.e., Bachelor's in comparison to Masters that are both in early childhood education). Future research could also explore the center director's leadership theory implementation through self-assessment and teacher assessment of leadership practices using tools that measure leadership theories different from resilient leadership practices.

Center level decisions, personal characteristics, or a combination. There are several variables that were significantly related to variables that reflected turnover. Some of them are supported by prior research and others need further analysis or research to understand why they have different results. To summarize the findings they are organized as center level, personal characteristics, or a combination of both.

Center level. The analysis found that the number of paid teacher positions, opportunity to be compensated for time off, and center support for participation in the T.E.A.C.H. Scholarship was associated with lower turnover. The center level decision to offer programming that is in-person, virtual, both in-person and virtual, or not offering programming was also related to the number of years the professional had been working at the center and unique to this study as it was related to the pandemic occurring at the time of the study. Prior research summarized in Chapter Two does support some of these findings, like opportunity to be compensated for time off and center support for

participation in T.E.A.C.H. being associated with lower turnover. Future research could explore many aspects of these findings.

Future research may explore why an increase in the number of paid teacher positions resulted in lower turnover. Is it because there is more support when all staff are present in case a child needs one-on-one support? Is it related to having enough staff to meet required adult-child ratios even when a team member has to be out due to illness? Does it mean an increase number of paid teachers also provides opportunity for paid time off or paid planning time?

Center support for participation in the T.E.A.C.H. Scholarship being related to lower turnover also garners interest in more research to understand this finding. Is it due to the T.E.A.C.H. contract obligation of the professional to stay with the center for a period of time? Does the professional sense greater value in their work from the program as the program is investing in them personally? Does participation in T.E.A.C.H. also result in the professional learning theory and practices better equipping them to do their job?

Lastly, future research could explore why a program moving from offering only in-person, to only virtual, to both, to not currently offering programming results in a decrease in the number of years the professional has been working at the center. Is this because the program implementation choice aligns with the choice the professionals would have made? Is it representative of professionals having opportunity to inform the decision of the center? Research could explore how centers made these decisions to better understand this finding.

Personal characteristics. This dissertation found administrators have more years of experience than caregivers, floaters, assistant teachers, and teachers; more years working at the center; and are less likely than teachers to be in a role with an individual position turnover at or greater than 50%. This finding aligns with research that administrators have more experience, time at the center, and lower turnover than teachers. It also aligns with the finding that administrators often move from a teacher role at their center, to an administrative role at the center, which is why the length of time at the center is longer.

Combination of center level and personal characteristics. Variables that are a combination of center level and personal characteristics include access to dental benefits, access to medical benefits and an increase in a person's age. This is because access to dental and medical benefits could have been through the center or a household member. All three of these variables were also associated with lower turnover which aligns with prior research.

Unique to this research was the finding that those who had a classroom colleague also participate in the research were more likely to be at a center with a higher turnover rate than a professional who did not have a classroom colleague participate in the research. Future research could explore why this finding may have occurred. Is it due to one colleague sharing the opportunity with another rather than the center director selecting the teachers that participate, resulting in greater diversity in perspective? Could it be that a center with higher turnover is eager to find a solution, so they encouraged as many professionals to share their perspective as possible resulting in them having

colleagues submit the survey? Other researcher questions could be developed from doing a literature review more specific to this finding as well.

Implications of Findings

Implications of the findings can be difficult to summarize because there were so many areas this research covers. To maintain the focus, the implications summarized here align with areas summarized in Chapter 2. This summary includes the impact of the administrator, qualifications, leadership theories, program quality, challenges for early childhood professionals, and resilience.

No Significance between Compensation and Variables that Reflected Turnover

Different than prior research (Allen & Kelly, 2015; Hall-Kenyon et al., 2013; Park-Jadotte et al., 2002; Whitebook & Sakai, 2003), significance between compensation and variables affiliated with turnover was not found. Perhaps this is because the mean hourly compensation for administrators is \$24.07 and for educators it is \$18.26. The range for administrators is from \$8.00 to \$52.00 and for educators it is from \$8.00 to \$30.00. While the lower end of the range is in-line with inadequate compensation found in other research, the mean from participants in this research is higher.

Another aspect to consider in relation to this finding is those that chose to volunteer to take part in this research. Many are professionals in a program that receives federal or state grant funding rather than solely tuition paid by families. Federal and state funded programs may be able to compensate educators and administrators at higher rates than programs solely funded by tuition.

Implications in Relation to the Administrator

The review of prior literature highlighted studies that included the impact of the administrator at a center (Jorde- Bloom , 1988; Russell, Williams, & Gleason-Gomez, 2010; Carver- Thomas & Darling- Hammond , 2017) . The research findings were different as a result of including the administrator. The literature review also highlighted research study limitations when the administrator was not included (Fleming, Mackrain, and LeBuffe, 2013; Park-Jadotte et al., 2002). This research analysis did not find significant impact of the administrator through the DERLS analysis, causing the researcher to ponder why.

This could be because in many sites the administrator was the main contact between the researcher and the teacher. Administrators were informed only one teacher perspective was needed to participate and all teachers could choose to participate. The data shows most sites chose to have just one teacher participate.

When the administrator communicated the opportunity to teachers, they may have may have self-selected a teacher to participate, rather than offering every teacher equal opportunity to participate. In addition, an administrator may have given a teacher the impression participation is required. These unmeasured variables could impact the result of the DERLS due to the administrator consciously or unconsciously choosing an educator who may score the DERLS higher than another educator would have, the educator having the perception that the administrator may see the results and not wanting to provide lower DERLS scores that might offend the administrator, and the educator having the desire to follow the leadership of the administrator and being compliant in submitting a response.

Implications in Relation to Qualifications

The qualification of teachers and administrators is an area of significance when both DARS and variables affiliated with turnover were the outcome. In some areas the significance is positively related, like a center supporting T.E.A.C.H. Scholarship participation having professionals that anticipate staying in their current role at the current center for a longer period of time than professionals at a center that does not support T.E.A.C.H. scholarship participation. In addition, this research found alignment with the findings of *Transforming the Workforce for Children Birth through Age 8* (2015) in that when an administrator has a Bachelor's degree in early childhood education, the turnover rate for the center for the current year as well as every year is lower. In addition, when the administrator attains a graduate degree in ECE or related field, the percent of staff the center loses every year is lower than when the administrator at a site does not have this degree. This warrants further research and, perhaps, improvement in policy and practice to support both investment in T.E.A.C.H. and administrators in attaining at least an undergraduate degree in early childhood education.

Implications in Relation to Leadership Theories

The research found more experienced staff rated the DERLS lower than less experienced staff. This is an important finding and warrants further research as well. While the researcher is aware that some sites were in transition of their administrator and so an administrator was supporting two sites rather than one, those data were not included in analysis to learn if this had a significant impact. Another possibility is self-reported DARS from administrators is lower than the self-reported DARS of teachers. Could an administrator's self-report of DARS have an impact on their ability to ensure DERLS

were implemented? For example, if an administrator self-rated self-control as 4.99 then the DERLS for self-control may be 4.99 or lower.

Implications of Program Quality

Similar to variables for qualifications, variables for program quality were significantly related both to items for DARS and variables affiliated with turnover. The significance to DARS items is specific to those in the internal beliefs composite variable. An increase in quality as noted by star rating does not align with a decrease in turnover or an increase in DARS composite variables related to internal beliefs. Further research and analysis can better report why this occurs. If the goal of improving quality is to reduce turnover then further research is needed to understand why this didn't occur for these centers.

The Level of Stress, Adversity, and Challenge for Professionals

The findings demonstrate investment in dental benefits and paid time off reduces turnover and/or increases the likelihood for a professional to stay. Access to dental benefits also increases the DERLS composite for relationships. While this research did not find significance in compensation and access to medical benefits significantly related to DARS, DERLS, or reducing turnover; previous research has and it is recommended that research continue to include gathering data related to these variables for analysis.

A unique aspect of this research is that it occurred during a pandemic; creating a unique area of stress, adversity, and challenge for early childhood professionals. The variable related to program model found significance when analyzed with the DERLS composite for internal beliefs as the outcome. A program offering only in-person learning at this time had a negative relationship with DERLS composite for internal beliefs,

whereas a program that was offering both in-person and virtual had positive relationships with DERLS. This is important for policy and practitioners to consider as we prepare to end the pandemic and reduce turnover at the same time.

The pandemic has further highlighted the need for investment in an already fragile early education system, creating a unique impact at the chronosystem level. The sustainability of high quality early childhood education has been further impacted by increased needs of families, lack of funding, and increased accountability. The additional stress, adversity, and challenge brought by the pandemic without investment at the macrosystem level had resulted in many early childhood centers closing, without new centers opening. If adults in households with young children are going to return to work, the macrosystem needs to make an investment in early childhood education.

Implications in Relation to Resilience

This research found DARS and DERLS composite variables in the areas of relationships, internal beliefs, initiative, and self-control have significant relationship to variables affiliated with turnover including both turnover rates, how long staff anticipate being in their current role, center, and profession; and experience of staff. This implies research should continue to study the impact of adult resilience and leadership resilience in relation to high quality teacher turnover, so that practices and policies can be adopted to reduce turnover.

While not significant, administrators did rate themselves higher in implementing resilient leadership practices than teachers rated resilient leadership practices. This is in-line with the finding of Paula Jorde Bloom as she developed the Early Childhood Work

Environment Survey. (2016). The implication is that both teacher and administrator voice should be gathered, and separated to determine if there is a significant difference.

This research also found significance between DARS and other areas that research has found related to turnover, including the age of the professional, qualification of the professional, and quality rating of the program. Further research could look more specifically at these areas, to better understand how the items within relate to each other. These findings can also inform future policy and practice.

Unique to this Research

The research took place during a worldwide pandemic related to the novel coronavirus. Logistically, it limited the researcher's ability to visit sites as both Oakland University and state mandates did not permit visits to licensed child care centers. As a result, all recruitment and participation occurred virtually. In addition, the pandemic created limited ability for early childhood professionals to participate in research. Many licensed centers closed during the pandemic or did not have additional staff in classrooms so that a teacher could leave the classroom and complete a survey submission. These limitations attributed to the limited number of participating sites.

That leads to another limitation for the research. In order for the findings to reflect all licensed centers in the urban Midwestern state, at least 262 licensed centers needed to have at least one teacher and one administrator participate. While 82 centers participated, only 61 had at least one response from an administrator and one response from a teacher. This is 23% of the 262, which was the number of centers needed for the research to be representative of all licensed centers in the area. It is also 10% of the entire population of 615 eligible sites. If all 82 sites are included, even the ones that just have a response from

one administrator or one teacher, then 13.33% participated. If the sites had been randomly drawn the findings might be more generalizable, which is something for future research to consider.

Directions for Future Research

This study provides a few avenues to direct future research. First and foremost is to conduct a similar study with the goal of increasing participation to have the findings represent a specific geographic area. Participation could possibly be increased by offering a financial incentive. Findings from the current study could be used to support applications for funding. Dissemination of these findings could encourage teachers and administrators to participate if an opportunity were offered in the future.

There were also some questions remaining from this study that were still unanswered. For example, when early childhood educators leave their role, were they leaving the profession? Similarly, there were questions that this study has created for future studies to build on. For example, there was greater significance between the DARS and how long professionals anticipate staying in their role, at their center, or employed at a child care or school than there was between the DARS and turnover variables like turnover rate for the current year, whether the current year had a turnover rate at or higher than 22%, and the turnover rate for the previous year. What is happening from the time professionals plan to stay and the time professionals leave that perhaps could be intervened to reduce turnover?

While the researcher had hoped to look at center-specific situations, the number of participants limited the ability to do this quantitatively. Future research could use another method, like mixed or qualitative, to gather center-specific findings related to this

topic. Similarly, the findings did not note much significance between DERLS items and other variables. If more center-specific situations could be analyzed, with more teacher responses from a center, would the findings for DERLS be much different?

The literature review found connection between variables reflecting turnover and variables represented in the DARS and DERLS. The DARS and DERLS have twenty-three items each in the areas of relationships, initiative, internal beliefs, and relationships. Studying these areas and how they relate to turnover will inform policy makers and professionals on actions to take at a center level, with little cost, to reduce turnover. As a result, it is recommended to include these items, areas, and tools as part of similar research in the future.

Conclusions for the Field

This research, as well as prior research, has found a significance between various variables and high quality early childhood professional turnover. This research both supports the findings of some variables from prior research and also demonstrates the significance of resilience as described in the DARS and DERLS. As the field considers practices and policy to reduce the turnover rate of high quality early childhood professionals, the considerations should also explore the DARS items for relationships, internal beliefs, initiative, and self-control.

While this research did not find significance between DERLS items and variables reflective of turnover, it did find significance between DERLS items and the length of experience of early childhood professionals. The field should consider that finding, and how it may relate to the DARS item regarding mentorship under relationships. It could be reflective of opportunity to invest in the leadership development of field professionals.

As the field triangulates practices with research and policy, this area should be considered as part of those conversations to better understand the need for investment.

APPENDIX A
IRB APPROVAL



December 17, 2020

Protocol #: IRB-FY2020-81

Research Team:
Tamara Arakelian
Julie Ricks-Donnen

Based on applicable federal regulations, the following study, "What is the relationship between early childhood teacher turnover, adult staff resilience and resilient leadership practices at licensed early childhood centers?" has been determined to be Exempt, with the following categories Category 2.(ii). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording). Any disclosure of the human subjects' responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation.

Notes for Researcher(s):

Please note that Oakland University has mandated a temporary stoppage of all in-person human subjects research procedures. An exception to the stoppage may be obtained for research with special circumstances from the Vice President for Research, Dr. David Stone. Please email Dr. Judette Haddad at haddad@oakland.edu to request an exception.

Permission from Research Site(s):

Please note the following:

- This IRB exemption determination letter means that this research has met one or more of the federal criteria for exemption per 45 CFR 46.104- Exempt Research.
- Before the research is initiated, permission to conduct research at a given site must be obtained from all research locations listed in the IRB submission. You must keep copies of all such permission letters for your files.
- It is the responsibility of each researcher to follow all applicable policies and procedures of any outside institution where the research will be conducted.

Letter and Consent Document:

This letter along with the IRB date-stamped consent document can be found in Cayuse in the Submission Details page under Letters and Attachments, respectively.

APPENDIX B

IRB AMMENDMENT: JANUARY 2021



Institutional Review Board

January 22, 2021

Protocol #: IRB-FY2020-81

Research Team:

Tamara Arakelian

Julie Ricks-Doneen

The IRB has reviewed the Modification submission and determined that the changes listed below do not affect the exemption status of the study. The following study, "What is the relationship between early childhood teacher turnover, adult staff resilience and resilient leadership practices at licensed early childhood centers?" remains Exempt per federal regulations.

The approved modifications are the following:

- The addition of a research recruitment flyer to broaden the means of research advertisement

This submission includes the following approved document:

- Research Recruitment Flyer

You are approved to implement the aforementioned modifications. Please retain a copy of this notification for your records.

This letter can also be found in Cayuse under the [Letters](#) tab in the [Submission Details](#) page.

If you have any questions, please contact the IRB office.

Thank you.

The Oakland University IRB

APPENDIX C

IRB AMMENDMENT: FEBRUARY 2021



February 24, 2021

Protocol #: IRB-FY2020-81

Research Team:
Tamara Arakelian
Julie Ricks-Doneen

The IRB has reviewed the Modification submission and determined that the changes listed below do not affect the exemption status of the study. The following study, "What is the relationship between early childhood teacher turnover, adult staff resilience and resilient leadership practices at licensed early childhood centers?" remains Exempt per federal regulations.

The approved modifications are the following:

- Change in time to complete survey. Survey only takes 20 minutes
- Change in three recruitment documents to reflect the accurate completion time for survey
- Change in consent document to reflect accurate completion time for survey

This submission includes the following approved documents:

- Flyer
- Phone Script
- Recruitment Letter
- Consent Form Version 2/24/2021

The REVISED IRB approved (date-stamped) consent document has been published under Attachments in the Submission Details page. Please download the IRB date stamped consent and use it in consenting participants.

You are approved to implement the aforementioned modifications. Please retain a copy of this notification for your records.

This letter can also be found in Cayuse under the Letters tab in the Submission Details page.

If you have any questions, please contact the IRB office.

APPENDIX D

PARTICIPANT QUESTIONNAIRE

What is the name of the center where you work? _____

Your first and last name initials. For example, if your name is Jonnie Smith you would enter JS: _____

The first and last name initials of the adults that teach in the same classroom as you. For example, if the other teacher's name is Jonnie Smith you would enter JS. If more than one person teaches in the same classroom, enter the initials for each person with a space in between them: _____

How old are you?: _____ years _____ Months

Select the highest qualification you have attained:

- ☐ High School Graduate or GED
- ☐ CDA
- ☐ Associates Degree in early childhood education or child development
- ☐ Bachelor Degree in early childhood education or related field with focus on teaching children from birth through age five
- ☐ Master Degree in early childhood education or related field with focus on teaching children from birth through age five
- ☐ Doctoral Degree in early childhood education or related field with focus on teaching children from birth through age five

How many years have you been working in the early childhood profession. If this is the first year, note less than one year. _____

How many years have you been working at the current center. If this is the first year, note less than one year. _____

Hourly compensation: _____

Average number of weekly working hours at the center: _____

Do you receive dental benefits from the center? Yes or No

- ☐ If no, do you have dental benefits from a family member or another source?

Do you receive medical benefits from the center? Yes or No

- ☐ If no, do you have dental benefits from a family member or another source?

Do you receive paid time off for sick time, vacation time, holiday time, or another reason? Yes or No

- ☐ If yes, how many hours of paid time off do you receive? _____

Does your center participate in the T.E.A.C.H. scholarship? Yes or No

○ If yes, are you participating in this program? Yes or No

Select the title that best describes your role:

- Teacher
- assistant teacher
- floater
- caregiver
- Other, please describe: _____

In the past 12 months, how many people have been in your role before you and including yourself? _____

How much longer do you anticipate staying in your current role at the center?

APPENDIX E

ADULT RESILIENCE SURVEY (DARS)

RESILIENCE SURVEY (DARS)

Take time to reflect and complete each item on the survey below. There are not right answers. For a free copy of the DARS visit www.centerforresilientchildren.org.

Self-statements related to relationships, internal beliefs, and self-control						
	Not at all like me	Not usually like me	Probably not like me	Somewhat like me	Usually like me	Very much like me
I have good friends who support me						
I have a mentor or someone who shows me the way						
My role as a caregiver is important						
I have personal strengths						
I am creative						
I have strong beliefs						
I am hopeful about the future						
I am lovable						
I am flexible						
I can calm myself down						

Behavior statements related to relationships, initiative, and self-control						
	Never	Seldom	Sometimes	Often	Almost Always	Always
I provide support to others						
I am empathetic to others						
I trust my close friends						
I communicate effectively with those around me						
I try many different ways to solve a problem						
I have a hobby that I engage in						
I seek out new knowledge						
I am open to new ideas						
I laugh often						
I am able to say no						
I can ask for help						
I express my emotions						
I set limits for myself						
I can calm myself down.						

Adapted from the Devereux Foundation (2013).

APPENDIX F

DEVEREUX RESILIENT LEADERSHIP SURVEY (DERLS): ADAPTED FOR TEACHERS

This survey is adapted from the DERLS, which was created to support leaders as they reflect on how to promote the capacity of resilience in staff. Take time to reflect and complete each item on the survey below. There are not right answers! For more information about resilient leadership and the DERLS, visit our website at centerforresilientchildren.org and go to Adults -> Resilient Leadership.

Developed by Rachel Wagner, MSW, & Nefertitis B. Poyner, Ed. D. from the Devereux Advanced Behavioral Health Center for Resilient Children

Relationships						
	Never	Seldom	Sometimes	Often	Almost Always	Always
The director of the program I work at cultivates supportive team work.						
The director of the program I work at challenges staff to do their best.						
The director of the program I work at works side-by-side with staff as needed.						
The director of the program I work at encourages staff to show empathy to others.						
The director of the program I work at fosters trust with staff.						

Internal Beliefs						
	Never	Seldom	Sometimes	Often	Almost Always	Always
The director of the program I work at delegates to encourage staff ownership.						
The director of the program I work at nurtures staff strengths.						
The director of the program I work at encourages staff creativity.						
The director of the program I work at demonstrates that he or she values staff diversity.						
The director of the program I work at creates a common vision and mission with staff.						
The director of the program I work at models and encourages positivity and optimism.						

Initiative						
	Never	Seldom	Sometimes	Often	Almost Always	Always
The director of the program I work at models and teaches effective communication						
The director of the program I work at encourages collaborative problem-solving with staff.						
The director of the program I work at praises and celebrates staff contributions.						
The director of the program I work at supports staff development and learning.						
The director of the program I work at is open to new ideas from staff.						
The director of the program I work at enjoys staff and shares positive moments.						
The director of the program I work at strives for manageable workloads for staff.						
The director of the program I work at encourages staff to ask for help.						

Self-Control						
	Never	Seldom	Sometimes	Often	Almost Always	Always
The director of the program I work at validates the feelings of staff.						
The director of the program I work at establishes clear and fair expectations of staff.						
The director of the program I work at encourages staff to be flexible.						
The director of the program I work at shares healthy coping strategies with staff.						

Adapted from: 2016 The Devereux Foundation. All rights reserved. The Devereux Center for Resilient Children (DCRC) grants permission to reproduce copies of the DERLS for educational purposes. Based on the original work the DARS, by Mary Mackrain.

Devereux Center for Resilient Children / 444 Devereux Dr. Vallanova, PA 19085
/ (866) 872-4697 / www.centerforresilientchildren.org

APPENDIX G

DEVEREUX RESILIENT LEADERSHIP SURVEY (DERLS)

This survey is adapted from the DERLS, which was created to support leaders as they reflect on how to promote the capacity of resilience in staff. Take time to reflect and complete each item on the survey below. There are not right answers! For more information about resilient leadership and the DERLS, visit our website at centerforresilientchildren.org and go to Adults -> Resilient Leadership.

Developed by Rachel Wagner, MSW, & Nefertitis B. Poyner, Ed. D. from the Devereux Advanced Behavioral Health Center for Resilient Children

Relationships						
	Never	Seldom	Sometimes	Often	Almost Always	Always
I cultivate supportive team work.						
I challenge staff to do their best.						
I work side-by-side with staff as needed.						
I encourage staff to show empathy to others.						
I foster trust with staff.						

Internal Beliefs						
	Never	Seldom	Sometimes	Often	Almost Always	Always
I delegate to encourage staff ownership.						
I nurture staff strengths.						
I encourage staff creativity.						
I demonstrate that I value staff diversity.						
I create a common vision and mission with staff.						
I model and encourages positivity and optimism.						

Initiative						
	Never	Seldom	Sometimes	Often	Almost Always	Always
I model and teach effective communication						
I encourage collaborative problem-solving with staff.						
I praise and celebrate staff contributions.						
I support staff development and learning.						
I am open to new ideas from staff.						
I enjoy staff and share positive moments.						
I strive for manageable workloads for staff.						
I encourage staff to ask for help.						

Self-Control						
	Never	Seldom	Sometimes	Often	Almost Always	Always
I validate the feelings of staff.						
I establish clear and fair expectations of staff.						
I encourage staff to be flexible.						
I share healthy coping strategies with staff.						

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Devereux Center for Resilient Children / 444 Devereux Dr. Vallanova, PA 19085 / (866) 872-4697 / www.centerforresilientchildren.org

APPENDIX H
CENTER CENSUS

What is the name of the center? _____

What is the address of the center? _____

If you are currently offering programming, is it in-person, virtual, or both?

- ☐ Only in-person (face-to-face)
- ☐ Only virtual
- ☐ Both in-person and virtual
- ☐ Not currently offering programming

How many total paid teacher positions working ten or more hours a week does the center have?

How many individual people have filled those positions in the past 12 months? _____

For the previous school year, how many new people did you hire? _____

For your answer to the previous question; is that more, less, or the same as in the last 5 years?

- ☐ More
- ☐ Less
- ☐ Same

Every year, about what percent of your staff do you lose?

About what percent of the teachers have been with the center for:

- ☐ 0 – 5 years: _____
- ☐ 6 – 10 years: _____
- ☐ 11 – 15 years: _____
- ☐ 16 – 20 years: _____
- ☐ More than 20 years: _____

APPENDIX I
PERMISSION FROM THE DEVEREUX FOUNDATION

Tammy Arakelian
Oakland University
47100 Maplebrook
Northville, MI 48168
(c) 248-231-1557
tlarakelian@oakland.edu

June 6, 2021

Nefertiti Poyner
Devereux Center for Resilient Children
444 Devereux Dr.
Villanova, PA 19085
1-866-872-4687
npoyner@devereux.org
dcrc@devereux.org

Dear Nefertiti Poyner,

I appreciate the communication we have had over email regarding the use of the DARS, DERLS, and an adapted version of the DERLS in my dissertation. I am now completing the doctoral dissertation at Oakland University entitled "What is the relationship between early childhood teacher turnover, adult staff resilience and resilient leadership practices at licensed early childhood centers?" I would like your permission to reprint in my dissertation excerpts from the following:

The Devereux Foundation. (2013). Devereux Adult Resilience Survey. The Devereux Center for Resilient Children (DCRC). Retrieved from https://centerforresilientchildren.org/wp-content/uploads/Devereux-Adult-Resilience-Survey-DARS_full.pdf

The Devereux Foundation. (2016). Devereux Resilient Leadership Survey. The Devereux Center for Resilient Children (DCRC). Retrieved from <https://centerforresilientchildren.org/wp-content/uploads/DERLS-Full-Version.pdf>

The excerpts to be reproduced are each:

DARS item

DERLS item

DERLS item adapted for teachers

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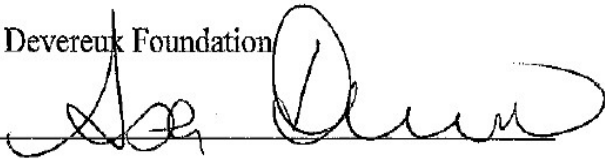
If these arrangements meet with your approval, please sign this letter where indicated below and return it to me. Thank you very much.

Sincerely,

Tammy Arakelian

Tammy Arakelian
Doctoral Candidate
Oakland University

PERMISSION GRANTED FOR THE
USE REQUESTED ABOVE:

The Devereux Foundation
By: 

Title: Director, DCFE

Date: 6/9/21

APPENDIX J

COPYRIGHT APPROVAL FOR FIGURE 4



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Portion Type	Chart/graph/table/figure	Distribution	Worldwide
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Title	What is the relationship between early childhood teacher turnover, adult staff resilience and resilient leadership practices at licensed early childhood centers?	Institution name	Oakland University
		Expected presentation date	2021-08-13
Instructor name	Tammy Arakelian		

ADDITIONAL DETAILS

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Editor of portion(s)	N/A	Author of portion(s)	Allen, LaRue; Kelly, Bridget Burke; National Research Council (U.S.). Committee on the Science of Children Birth to Age 8: Deepening and Broadening the Foundation for Success, Board on Children, Youth, and Families
Volume of serial or monograph	N/A		
Page or page range of portion	359		
		Issue, if republishing an article from a serial	N/A
		Publication date of portion	2015-01-01

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APPENDIX K
STEPS TAKEN TO CLEAN DATA

Data cleaning included the following steps:

- Download from SPSS into Qualtrics to learn the alpha to numeric conversion
- Download from SPSS into Excel to recognize inconsistencies and make adjustments.

For example a participant noted that they have been working at their center for 2023 years and the response was place with 20 years based on the understanding that the participant meant 20-23 years. Another participant noted they have been part of the profession for 100 years and this response was adjusted to 10 years based on the understanding that the participant accidentally entered an additional zero.

- Age was converted from a month/year data input to the number of years in age the respondent was at the time they submitted the survey.
- Some data fields were added so both categorical and continuous variables could be analyzed. This includes age, degree beyond a bachelors, early childhood degree preceding a bachelors, education not specific to early childhood education or related field, years in early childhood profession, years working at the current center, individual position turnover at or greater than twenty-two percent for both current and previous year, individual anticipates staying at current center five or more years, center turnover rate for current and previous year at or higher than twenty-two percent, and whether the center has half or more of the staff that have worked five years or less.
- To make the experience of staff categorical, if a respondent noted 50% or more of the staff had been with the program 0 – 5 years the response was coded as one, recognizing the staff is less experienced than if the response noted 50% or more of staff had 6 or more years of experience.

- To determine the average number of years of experience of staff, the value of the response for each area (e.g., 0 – 5, 6 – 10, 11 – 15, 16 – 20, 20+) was multiplied by the midpoint (e.g., 3, 8, 13, 18, 25). The totals were added and divided by the sum of the percentages entered.
- Accreditation status was populated from the list of accredited sites on the NAEYC website in June, 2021.
- Great Start to Quality status was populated from the public listing of licensed sites in June 2021.
- Classroom colleague was created by looking at groups of submissions by site, and comparing the initials of the respondent with the initials of those the respondent teaches within the same classroom.

Once these steps were complete, the data had to then be coded to recognize yes responses as one, no responses as zero, and missing responses with a space. This was done in Excel. In addition, alpha responses for the DARS and DERLS were converted into numeric in Excel.

When the data were saved in Excel, and converted to SPSS, it did not transfer correctly. As a result, once in SPSS, the data were reviewed and if incorrect it was copied from the correct Excel document and pasted into SPSS. For each column of data, after the data were copied and pasted from Excel, frequencies and descriptives were run to ensure accuracy. This meant some of the data were converted from string to numeric, the number of decimals was limited to zero or one, and the width was reduced as well. After the data were clean, analysis began and is described in the body of the dissertation.

APPENDIX L

CODE BOOK

Data Set Description: Of the 327 people who opened the survey between January 20, 2021 and May 13, 2021; 185 submitted a response. Of the 185 responses, 86 were from administrator and 99 from teachers. When compiled by center, there were 82 centers represented. Of the 82 centers 61 had at least one response from a center director and one response from a teacher, 17 had a response from at least one administrator, and 4 had at least one response from a teacher.

Variable Name	Variable Label	Units – Category description or unit measure
Individual ID	Last 4 digits of cell phone.	4 digits
Center ID		Numeric 1 through 82 12, 15, 33, and 82 just have teacher perspective 37, 40, 54, 59, and 69 through 81 just have administrator perspective.
Accreditation Status	Center is Accredited by the National Association for the Education of Young Children	1=Yes
Quality Rating	Center's Great Start to Quality Rating from the State of Michigan	0 = Empty Star 1 2 3 4 5
Classroom Colleague	Classroom colleague submitted a survey	1 = Yes 0 = No
Age (in years) - Categorical	30 years and older	1 = Yes 0 = No
Age (in years) - Continuous	Age of individual	Numeric 21 through 66
BA in EC	Bachelors degree in Early Childhood	1=Yes 0=No
Degree beyond a Bachelors	Degree beyond a Bachelors in ECE or Related Field	1 = Master's Degree 2 = Master's Degree and Education Specialist Degree 3 = No
Degree beyond a Bachelors	Graduate Degree in ECE: Focus in Education or Administration	1 = Education 2 = Administration 3 = Masters in Education and Specialist in Administration

Variable Name	Variable Label	Units – Category description or unit measure
Early Childhood Degree Preceding Bachelors		1 = Yes 0 = No
Early Childhood Degree Preceding Bachelors: Type	Child Development Associate Associates Degree None of the Above	1 = Child Development Associate 2 = CDA and Associates Degree 3 = Associates Degree 4 = No
Education not specific to Early Childhood Education or Related Field		1 = Yes 0 = No
Education not specific to Early Childhood Education or Related Field: Type	Masters Degree Bachelors Degree Associates Degree Education Specialist Degree	1 = Associates 2 = Bachelors 3 = Masters 4 = Education Specialist 5 = Does not Apply to me
Years in the Early Childhood Profession	Less than 1 year or more than 1 year Note the number of years if 1 or more	1=Less than 1 year 2=more than 1 year Varies from 0 to 36
Years working at the current center	Less than 1 year or more than 1 year	0 = One Year or More than One year 1 = Less than One year
Years working at the current center	Note the number of years if 1 or more	Varies from 0 to 25
Hourly Compensation		Varies from 8 to 52
Average Hours a week working at the center	37.5 hours or more per week	1 = Yes 0 = No
Benefits	Has access to dental benefits from Center or Household Member Has access to medical benefits from Center or Household Member	1 = Yes 0 = No
Paid time off	Receives paid time off as a	1 = Yes

Variable Name	Variable Label	Units – Category description or unit measure
	benefit (e.g., sickness, vacation, personal business)	0 = No
T.E.A.C.H. Scholarship Participation	Center Support	1 = Yes 0 = No
	Current Individual Participation	
Description of Role	Description of Role	1 = Administrator 2 = Center Director 3 = Teacher 4 = Assistant Teacher 5 = Floater 6 = Caregiver
Turnover	Individual Position Turnover Rate	Varies from 0 to 98
	Individual Position Turnover % at or greater than 50%	1 = Yes 0 = No
	How much longer do you anticipate staying in your current role at the current center?	.5 = Less than a year 1 = 1 Year 2 = 2 years 3 = 3 years 4 = 4 years 5 = 5 or more years
	How much longer do you anticipate staying at your current center?	
	How much longer do you anticipate staying employed at a child care center or school?	
	Individual anticipates staying at the current center, possibly in the current role, 5 or more years.	
DARS self-statements related to relationships, internal beliefs, and self-control	I have good friends who support me	1 = Not at all like me 2 = Not usually like me 3 = Probably not like me 4 = Somewhat like me 5 = Usually like me 6 = Very much like me
	I have a mentor or someone who shows me the way	
	My role as a caregiver is important	
	Never	
	I have personal strengths	
	I am creative	
	I have strong beliefs	
	I am hopeful about the future	
	I am lovable	

Variable Name	Variable Label	Units – Category description or unit measure
	I am flexible	
	I can calm myself down	
DARS behavior statements related to relationships, initiative, and self-control	I provide support to others	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	I am empathetic to others	
	I trust my close friends	
	I communicate effectively with those around me	
	I try many different ways to solve a problem	
	I have a hobby that I engage in	
	I seek out new knowledge	
	I am open to new ideas	
	I laugh often	
	I am able to say no	
	I can ask for help	
	I express my emotions	
	I set limits for myself	
	I can calm myself down.	
Role in the center at least 10 hours a week	Center Director or Educator	1 = Center Director 2 = Teacher
DERLS for Teachers – Relationships	The director of the program I work at cultivates supportive team work.	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	The director of the program I work at challenges staff to do their best.	
	The director of the program I work at works side-by-side with staff as needed.	
	The director of the program I work at encourages staff to show empathy to others.	
	The director of the program I work at fosters trust with staff.	
DERLS for Teachers – Internal Beliefs	The director of the program I work at delegates to encourage staff ownership.	1 = Never 2 = Seldom 3 = Sometimes

Variable Name	Variable Label	Units – Category description or unit measure
	The director of the program I work at nurtures staff strengths.	4 = Often 5 = Almost Always 6 = Always
	The director of the program I work at encourages staff creativity.	
	The director of the program I work at demonstrates that he or she values staff diversity.	
	The director of the program I work at creates a common vision and mission with staff.	
	The director of the program I work at models and encourages positivity and optimism.	
DERLS for Teachers - Initiative	The director of the program I work at models and teaches effective communication	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	The director of the program I work at encourages collaborative problem-solving with staff.	
	The director of the program I work at praises and celebrates staff contributions.	
	The director of the program I work at supports staff development and learning.	
	The director of the program I work at is open to new ideas from staff.	
	The director of the program I work at enjoys staff and shares positive moments.	
	The director of the program I work at strives for manageable workloads for staff.	
	The director of the program I work at encourages staff to ask for help.	

Variable Name	Variable Label	Units – Category description or unit measure
DERLS for Teachers – Self-Control	The director of the program I work at validates the feelings of staff.	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	The director of the program I work at establishes clear and fair expectations of staff.	
	The director of the program I work at encourages staff to be flexible.	
	The director of the program I work at shares healthy coping strategies with staff.	
DERLS for Center Directors – Relationships	I cultivate supportive team work.	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	I challenge staff to do their best.	
	I work side-by-side with staff as needed.	
	I encourage staff to show empathy to others.	
	I foster trust with staff.	
DERLS for Center Directors – Internal Beliefs	I delegate to encourage staff ownership.	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	I nurture staff strengths.	
	I encourage staff creativity.	
	I demonstrate that I value staff diversity.	
	I create a common vision and mission with staff.	
	I model and encourages positivity and optimism.	
DERLS for Center Directors – Initiative	I model and teach effective communication	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	I encourage collaborative problem-solving with staff.	
	I praise and celebrate staff contributions.	
	I support staff development and learning.	
	I am open to new ideas from staff.	

Variable Name	Variable Label	Units – Category description or unit measure
	I enjoy staff and share positive moments.	
	I strive for manageable workloads for staff.	
	I encourage staff to ask for help.	
DERLS for Center Directors – Self-Control	I validate the feelings of staff.	1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Almost Always 6 = Always
	I establish clear and fair expectations of staff.	
	I encourage staff to be flexible.	
	I share healthy coping strategies with staff.	
Center Census	Programming Model	1 = Only in-person (face-to-face) 2 = Only virtual 3 = Both in-person and virtual 4 = Not currently offering programming
	# of paid teacher positions working 10 or more hours a week	Varies from 0 to 50
	Turnover Rate for Current Year in %	Varies from 0 to 125
	Turnover Rate for current year is at or higher than 22%	1 = Yes 0 = No
	Turnover Rate for Previous Year in %	Varies from 0 to 220
	Turnover Rate for previous year is at or higher than 22%	1 = Yes 0 = No
	Is the current turnover rate more, less, or the same as the previous year?	1 = Less 2 = More 3 = Same
	Every year about what percent of your staff do you lose?	Varies from 0 to 40
	Does the center have half or more of the staff that have worked 5 years or less? If yes the staff is less experienced.	1 = Yes 0 = No
	What is the average number of years of experience for staff?	Varies from 0 to 14

APPENDIX M
LITERATURE REVIEW SUMMARY

Main Finding One: The Center Director has an Impactful Role			
First Supporting Idea:	Supporting Statement	Research Reference	Figure Number and Title
The center director role impacts various ecological systems of the child and center.	Exploring the impact of the center director when placed as an individual in a program's ecological model.	Bronfenbrenner, 1994	3: Center Director as Individual in Bronfenbrenner's Ecological Model is based on <i>Ecological Models of Human Development</i> by Urie Bronfenbrenner (1994).
	A linear model reflecting the impact and role of the center director.	Harrist et al., 2007	4: Program Leader in the Ecological Systems of a Program is from Harrist et al. (2007).
	How the knowledge and competencies of a center director impact other aspects of a program.	Adapted from Allen & Kellye, 2015	5: Factors that contribute to quality professional practice and ultimately to improve child outcomes.

Main Finding One: The Center Director has an Impactful Role				
Second Supporting Idea:	Authors	Summary	How Director Could have been Included	Limitation
The role and impact of the center director warrants including them in research, which reduces limitations of the research.	Fleming, Mackrain, and LeBuffe (2013)	The review included common and unique stressors, effects of stressors, how stress impacts adult ability, programs promoting adult resilience, and the Devereux approach to fostering adult resilience.	The review did not specify the role of the center director in relation to teacher resilience.	This limited the results so that recommendations to change the resilience of the early childhood educator only related to the individual, rather than expanding to recommendations related to organizational conditions.
	Park-Jadotte,	"...reviewed evaluations of	Not including data on the	As a result of this limitation and

	Golin, and Gault (2002)	federal, state, and local efforts ...” that rewarded further education and training with compensation.	center director (e.g., length of time center director was in role) and how that data related to other data points limited the study.	others, researchers were not able to do a meaningful comparison and instead provided a summary of the findings from each program.
	Authors	Summary	Analysis	Findings
	Russell, Williams, & Gleason-Gomez (2010)	Implemented a pilot study to determine whether the teacher's age, perceptions of fair pay, receipt of employer-sponsored health insurance, and administrative support, as operationalized by the Competing Values Framework (CVF), predicted antecedents of turnover	Data were analyzed in various ways, including mean, binary logistic regression, Wald statistics, Odds Ratios, and linear multiple regression.	Results indicate teachers thoughts of leaving their current job were significantly related to employer sponsored health insurance and perception of directors’ coordinating skills. Perceptions of fair pay also predicted teachers’ thoughts of leaving their current job.
	Carver-Thomas & Darling-Hammond (2017)	Data from the U.S. Department of Education, National Center for Education Statistics Schools and Staffing Survey (SASS) from 2011-2012 and Teacher	Descriptive statistics and differences of means were used to test results to identify differences in turnover rates across teacher and school characteristics. A logistic regression	Following dissatisfaction with assessment and accountability issues, dissatisfaction with administrative support was the most noted reason for

		Follow-up Survey (TFS) from 2012-2013 were used to understand why teacher turnover matters and what can be done to decrease turnover.	model was then used to examine the relationship between teacher turnover and a series of school characteristics, teacher characteristics, and eight workplace conditions. One of the eight workplace conditions was administrative support.	turnover.
	Jorde- Bloom (1988)	Explored whether center directors and teachers rate the center they work in the same or different.	629 individuals working in either for-profit or non-profit state licensed centers at least 20 hours a week completed the ECWES. 94 of the participants were in administrative positions and 535 were in teaching positions.	Analysis of variance found a statistically significant difference in administrator and teacher center climate rating in all ten dimensions of the ECWES, with 8 of the dimensions having a statistical difference at $p < .01$. A separate analysis was done only including full-time employed administrators and teachers and, in all dimensions, the differences were even stronger.

Main Finding One: The Center Director has an Impactful Role				
Third Supporting Idea	What are the research recommended qualifications?	How does the Midwestern State where research took place connect?	What is a way to estimate how many center directors have the research recommended qualification?	What support is available to attain an administrator recommended qualification?
There are research recommended qualifications for a center director.	<i>Transforming the Early Childhood Workforce</i> recommends an early childhood professional attain an undergraduate degree in early childhood education, at the Bachelor's level, with specialized coursework in-line with the role of the professional (2015, pp. 509-511).	The McCormick Center published a report titled, "Closing the Leadership Gap," that assessed each state in America on a ten-point scale (2017). The score for the Midwestern state where the research took place is two out of ten.	Many center directors step into a center director position from a teaching role (Catron & Groves, 1999), meaning they have a teacher qualification without an administrator qualification.	In the mesosystem, to support program leaders in attaining a research recommended qualification, the Midwestern state offers the T.E.A.C.H. scholarship program. T.E.A.C.H. scholarships significantly reduce the financial cost of attaining a degree (T.E.A.C.H. Early Childhood Michigan, 2019).

Main Finding One: The Center Director has an Impactful Role					
Fourth Supporting Idea	Supporting Statements	Source	Organization	Description	Impact on Teacher Retention (prevent burnout)
There are multiple leadership	Pedagogical leadership is applicable and	Abel, Talan, & Masterson,	McCormick Center	The program leader's	

theories to guide the work of the center director.	implementation can have positive impact on staff.	2017		work in instructional leadership and family engagement.	
		Pacchiano, Wagner, and Lewandowski, 2019, p. 27	The Early Essentials Framework	Instructional leadership, parent voice, and involved families	Implementing pedagogical leadership can "...nurture trust, collective understanding, and responsibility for excellence and improvement among staff and families [emphasis added],"
	Distributed leadership benefits both center directors and teachers.	Hughes and Pickeral, 2013	National School Climate Center	Eleven issues of practice briefs with a focus on sustaining a quality educational climate	"When teachers are included throughout the decision-making process, they are more likely to implement and sustain change with fidelity to quality practice" (p. 27).
		Leadership Theory	Source	Definition	
Resilient leadership theory shares characteristics in common with both transactional and transformational leadership theories.		Transformational Leadership	Burns, 1978	The ability for a leader to engage with staff that inspired them to new levels of energy, commitment, and moral purpose.	
		Transactional Leadership	Bass, 1985, as cited in Dartey-	"... a transaction in which followers' needs are met if their performance measures	

			Baah, 2015	up to their explicit or implicit contracts with their leader.”
		Resilient Leadership	Robb, 2000, as cited in Darthey-Baah, 2015	“...A resilient organization as one that is: [...] able to sustain competitive advantage over time through its capability to do two things simultaneously: deliver excellent performance against current goals; and effectively innovate and adapt to rapid, turbulent changes in markets and technologies (Robb, 2000, p. 27).”

Main Finding Two: A Center Setting is Representative of Research Related to Stress, Resilience, and Program Quality				
First Supporting Idea	Supporting Statements	Source	Methodology	Findings
Center directors and teachers experience stress, adversity and challenge.	Low compensation and limited access to health care cause stress, adversity, and challenge.	Hall-Kenyon and Colleagues (2013)	Review of about 30 articles about teacher well-being	“Low wages have been a long-standing and serious problem in early childhood education affecting teacher turnover and job satisfaction,” (p.155)

		Russell, Williams, & Gleason- Gomez, 2010	78 teachers employed full time at an early childhood center in good standing with the Texas Department of Family and Protective Services in central Texas participated. Data were analyzed various ways including mean, binary logistic regression, Wald statistics, Odds Ratios, and linear multiple regression.	Researchers found health insurance is one of the variables that significantly predicted teachers' commitment to staying in their position. Health insurance also significantly predicted leaving a job.
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	The classroom climate can be a source of stress, including when children exhibit challenging behavior.	Welde, 2017	Eight directors and three child development services coordinators were interviewed to gain insight into the issue of turnover among Army child-development center directors working outside the continental United States military centers. Interview responses were coded and analyzed, resulting in the emergence of five themes related to the nature of the work, what aspects of the work environment impact director decision to stay in their position, and what aspects outside the work environment impact director decision to stay in their position.	The five themes are: No typical day: demanding, fast-paced, stressful, long, busy day; the challenge of staffing; for the love of working with children; creating a center: relationships with staff and parents; and sources of support (p. 122).
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		Gilliam, 2005	This research analyzed expulsion rates for prekindergarten through twelfth grade students.	He found the expulsion rate of preschool children is 3.2 times greater than that of K-12 students. Gilliam found, "The teacher's level of self-reported job stress also was related significantly to the likelihood of expelling, and contributed to the prediction of expulsion even when class setting, size, and student age were controlled," (Gilliam, 2005, p. 2).
		Baumert and colleagues (2008)		"The results imply that higher self-efficacy in classroom management is related fewer classroom disturbances, which are positively related to emotional exhaustion," (Dicke et al., 2014, p. 7).

		Gebbie and colleagues (2011)		Teachers with higher self-efficacy had fewer challenging behaviors. Increased challenging behaviors decreased self-efficacy.
	Lack of workplace support can be a source of stress, adversity, and challenge.	Appel-Drazin, 2016	150 teachers and 30 center directors from centers not affiliated with the public schools, located in a major Midwestern city, and either NAEYC accredited, in the process of NAEYC accreditation, or supervised by an agency with other early childhood centers that had NAEYC accreditation completed the ECWES voluntarily online. The final data analysis was a <i>t</i> -test for independent variables to determine the differences between the levels of the independent variable.	"...the <i>t</i> -test results of the dimension of Supervisor Support were higher for the committed group than the non-committed group and again provide an additional indication of the importance of support that teachers seek from their leaders," (p. 108).

		Whitebook & Sakai, 2003	92 centers participated in the study; a target group of 55 centers were seeking NAEYC Accreditation and an additional 37 were not seeking accreditation and were randomly selected and matched demographically as much as possible with the target group. Analysis of variance, <i>t</i> -test, and chi-square analyses were used to compare professional and demographic characteristics of teaching staff and directors and identify factors associated with stability and instability of personnel.	Highly trained teaching staff were more likely to leave their jobs if they earned lower wages, worked in a climate with less stability of highly trained co-workers, and worked with a greater percentage of staff who did not have a Bachelor's degree. Two of three of the findings related to co-workers.
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Main Finding Two: A Center Setting is Representative of Research Related to Stress, Resilience, and Program Quality			
Second Supporting Idea	Supporting Statement	Source	Findings
Research includes resilience and its connection to education.	Resilience is flexible. It can be eroded and strengthened.	Doney, P., 2012	“The major finding of this investigation includes the notion that resilience is not an innate personality trait, but rather a process that is both internal and external resulting from positive adaptation to adversity,” (p. 653).
		Beltman and colleagues, 2015	“In teachers’ experience, it was the local school ecology —and not specifically school psychologists—that most supported and sustained their resilience, and then in apparently ad hoc ways,” (p. 18).
		Le Cornu, R., 2013	“The relationships that the early career teachers developed with their students, teaching colleagues, leaders, peers, family and friends, other professional staff, parents of students and themselves, all appeared to work together to promote their resilience,” (p. 9).
	Resilience is determined by the individual, organizational conditions, and systemic or macrosystem conditions. (Aguilar, 2018, p. 5-6)	The Devereux Foundation, 2012, 2013, 2016	Developed the Early Childhood Assessment (DECA) to measure individual children’s resilience, Adult Resilience Survey (DARS) to measure individual caregiver resilience, and Resilient Leadership Survey (DERLS) for those leading caregivers to measure resilient leadership practices.
		Bullough, Hall-Kenyon and MacKay, 2012	“...even the most well-intentioned school reform is at risk of failing when the adults responsible are not practicing behaviors related to resilience, self-efficacy and hope.”

Main Finding Two: A Center Setting is Representative of Research Related to Stress, Resilience, and Program Quality			
Third Supporting Idea	Quality Measurement Tools	Source	Findings
Almost all of the program and classroom quality measurement components seem related to the components measured by resilient tools, demonstrating that measuring and growing resilience may have an impact on program quality.	High Scope's Program Quality Assessment (PQA)	Program Quality Assessment. (2003).	High Scope's Program Quality Assessment (PQA) tool measures eight components of a program: daily routine, adult-child interactions, curriculum and instruction, learning environment, family engagement, staff qualifications, professional development, and program management. Of the eight components, the researcher's thought process connects seven of the components to the four areas measured by the DARS and DERLS.
	The Infant-Toddler Environment Rating Scale-Revised (ITERS-R)	Frank Porter Graham Child Development Institute of the University of North Carolina. (2018).	The Infant-Toddler Environment Rating Scale-Revised (ITERS-R) and the Early Childhood Environment Rating Scale-Revised (ECERS-R) measures seven program components: personal care routines and program structure, interactions, activities, space and furnishings, parents, staff, and language-reasoning. Of the seven components, the researcher's thought process connects six of the components to the four areas measured by the DARS and DERLS.
	The Early Childhood Environment Rating Scale-Revised (ECERS-R)		
	CLASS by Teachstone	Teachstone. (2018).	The CLASS by Teachstone measures three classroom components: adult-child interactions, curriculum and instruction, and learning environment. The researcher's thought process connects all three to relationships and self-control as measured by DARS and DERLS.

	NAEYC Accreditation for Early Childhood Programs	NAEYC, 2017	The NAEYC Accreditation of Early Learning Programs measures nine program components: relationships; curriculum; teaching; assessment of child progress; health; staff competencies, preparation and support; families; community relationships; physical environment; and leadership and management. The researcher's thought process connects all nine components to the four areas measured by the DARS and DERLS.
	Early Education Essentials Framework	Ehrlich, S. B., Pacchioano, D. M., Stein, A. G., Luppescu, S. (2016).	The Early Education Essentials Framework measures six program components: effective instructional leaders, collaborative teachers, involved families, supportive environments, ambitious instruction, and parent voice. The researcher's thought process connects all six components to the four areas measured by the DARS and DERLS.

Main Finding Three: Use of the DARS and DERLS by early childhood teachers and center directors supports awareness to positively impact resilience, self-agency, and self-efficacy which can support resilience development of children.			
First Supporting Idea	Author	Overview of Study	Findings
An individual's resilience development is impacted by interactions with an adult outside the home.	Crosnoe and Elder (2004)	Researched family dynamics, supportive relationships, and educational resilience during adolescence. Their research focused on the impact of parental relationships of an individual, as well as other microsystem relationships like friends, siblings, and teachers.	Found that these non-parental relationships could provide protective interactions that support resilience even when parental relationships put an adolescent at risk.

	Elder (1974 and 1996)	The impact of the great depression	Found microsystem relationships could buffer or increase the adversity of the situation
	Elder and Clipp (1989)	Using data from the archives of the Institute of Human Development that represented 149 World War II veterans, they completed the California Q-sort analysis that was developed by Jack Block in 1971	Their findings include noting the effects of combat are moderated or accentuated by personal and contextual influences.
Second Supporting Idea	Author	Term	Findings
Bandura’s self-efficacy, Bronfenbrenner’s self-agency, and resilience are connected.	Bandura, 1977, p.79	Self-Efficacy	Self-efficacy is person’s belief that s/he can, “...execute the behavior required to produce the outcomes,”
	Elder (1974 and 1996)	Self-Agency	Self-agency is a person’s ability to do what they believe they can do in relation to their ecological systems
			A person must believe they can execute a behavior required to produce outcomes (self-efficacy) to attain those outcomes (self-agency). If a person does not attain outcomes (self-agency) than it limits their belief that they can (self-efficacy).
	Hypothesis		Support for Hypothesis
	If resilience increases, it is likely self-efficacy and self-agency increase. If resilience is to decrease, so may self-efficacy and self-agency.		“Success experiences across different situations develop a repertoire of adaptive acts, an array of skills enabling resourcefulness and flexibility,” (Elder, 1974, p. 11).
Third Supporting Idea	Source	Risk Factors and/or Protective Factors	Findings

Research-based classroom and school strategies used to create environments that build resilience reflect the areas of the DARS and DERLS.	Doll, 2013	Risk factors are often characteristics of families and communities, or the microsystem and mesosystem of the individual Developed a practical strategy that teachers can use to create protective factors in classroom environments	All six of the beliefs developed by Doll reflect the areas measured by the DARS and DERLS
	Cohen, 2013	Highlights how a school can implement the protective factors, also known as, “Road to Resilience,” factors developed by the American Psychological Association (2012).	The current factors from the American Psychological Association’s summary of factors that support development of resilience reflect the four areas of the DARS and DERLS

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