

Utah State University

DigitalCommons@USU

---

All Graduate Theses and Dissertations

Graduate Studies

---

5-2022

## Toddler Internalizing and Externalizing Problem Behaviors and Child Care Provider Mental Health

Danielle M. Jensen Egan  
*Utah State University*

Follow this and additional works at: <https://digitalcommons.usu.edu/etd>



Part of the [Social and Behavioral Sciences Commons](#)

---

### Recommended Citation

Jensen Egan, Danielle M., "Toddler Internalizing and Externalizing Problem Behaviors and Child Care Provider Mental Health" (2022). *All Graduate Theses and Dissertations*. 8462.

<https://digitalcommons.usu.edu/etd/8462>

This Thesis is brought to you for free and open access by the Graduate Studies at DigitalCommons@USU. It has been accepted for inclusion in All Graduate Theses and Dissertations by an authorized administrator of DigitalCommons@USU. For more information, please contact [digitalcommons@usu.edu](mailto:digitalcommons@usu.edu).



TODDLER INTERNALIZING AND EXTERNALIZING PROBLEM BEHAVIORS  
AND CHILD CARE PROVIDER MENTAL HEALTH

by

Danielle M. Jensen Egan

A thesis submitted in partial fulfillment  
Of the requirements for the degree

of

MASTER OF SCIENCE

in

Human Development and Family Studies

Approved:

---

Lisa K. Boyce, Ph.D.  
Major Professor

---

Audrey C. Juhasz, Ph.D.  
Committee Member

---

Sarah S. Tulane, Ph.D.  
Committee Member

---

D. Richard Cutler, Ph.D.  
Interim Vice Provost  
of Graduate Studies

UTAH STATE UNIVERSITY  
Logan, Utah

2022

Copyright © Danielle Jensen Egan

All Rights Reserved

## ABSTRACT

Toddler Internalizing and Externalizing Problem Behaviors  
And Child Care Provider Mental Health

By

Danielle Jensen Egan, Master of Science

Utah State University, 2022

Major Professor: Dr. Lisa K. Boyce  
Department: Human Development and Family Studies

Caregiver depression, particularly maternal depression, has repeatedly been shown to be a risk factor for the development of internalizing and externalizing behaviors in young children. Gaps still exist in the research regarding the mental health of other caregivers that directly interact with children's lives. Increasingly more children spend a great deal of time in child care settings. Less is known about child care provider stress and depression in relation to toddler internalizing and externalizing problem behaviors.

Previous investigations found that child care provider education, experience, and interactions with the children influence quality. These variables are also related to toddler problem behaviors. Other factors such as child care provider mental health have yet to be explored fully to understand its influence on the development of internalizing and externalizing behaviors in toddler aged children.

This research sought to explore the associations among child care provider stress and depression and toddler internalizing and externalizing problem behaviors. Extant data

from the Utah State University Child Care Access Means Parents in School (CCAMPIS) grant were analyzed. Additional child care providers in Utah were sampled, as well as parents in their program who had toddler aged children.

Results indicated that a high number of toddlers in the sample showed higher levels of negative emotionality and depression symptoms compared to previous research with children in child care. Toddler aged male children showed higher levels of activity and impulsivity. In contrast to previous research, higher family income was associated with higher toddler peer aggression. Additionally, high levels of child care provider stress were correlated with higher levels of peer aggression. This small correlation and cross-sectional research study points to the need for further research to look at these and possible mediating variables further.

(86 Pages)

## PUBLIC ABSTRACT

### Toddler Internalizing and Externalizing Problem Behaviors And Child Care Provider Mental Health

Danielle Jensen Egan

Caregiver depression, particularly maternal depression, has repeatedly been shown to be a risk factor for the development of problem behaviors in young children. Problem behaviors fit within two categories: internalizing and externalizing. Externalizing behaviors include peer aggression, defiance, and impulsivity. Internalizing behaviors include generalized anxiety, withdrawal, separation distress, depression, and inhibition to novelty.

Gaps still exist in the research regarding the mental health of other caregivers that directly interact with children's lives. Increasingly more children spend a great deal of time in child care settings. Less is known about child care provider stress and depression in relation to toddler problem behaviors.

Previous investigations found that child care provider education, experience, and interactions with the children influence quality. These variables are also related to toddler problem behaviors. Other factors such as child care provider mental health have yet to be explored fully to understand its influence on the development of problematic behaviors in young children.

This research sought to explore the associations among child care provider stress and depression and toddler internalizing and externalizing problem behaviors. Data from

the Utah State University Child Care Access Means Parents In School (CCAMPIS) grant were analyzed. Additional child care providers in Utah were sampled, as well as parents in their program who had toddler aged children.

Results indicated that a high number of toddlers in the sample showed higher levels of negative emotionality and depression symptoms compared to previous research with children in child care. Toddler aged male children showed higher levels of impulsivity. In contrast to previous research, higher family income was associated with higher toddler peer aggression. Additionally, high levels of child care provider stress were correlated with higher levels of peer aggression. This small exploratory research study points to the need for further research to look at these variables and other possible contributing factors.

## ACKNOWLEDGMENTS

The process of completing this requirement of my master's program was supported by several individuals, without whom I would never have been able to complete this final proposal.

My sincerest and deepest gratitude to Lisa Boyce my major advisor, who stuck with me for the long haul and who continually asked how she could support me in any way. Her patience and dedication are what got me to this point, and without whom I would have given up so many times. In addition, thanks to Lisa for the use of the Child Care Access Means Parents in School (CCAMPIS) data set.

To my committee members Audrey Juhasz and Sarah Tulane, who have been supportive and patient with me as I have worked towards completing this proposal. Special thanks to Audrey who helped with so many of my questions, especially in regard to the CCAMPIS data and SPSS. I truly was grateful for your willingness to listen and answer my many questions.

To my husband who continually pushed me and reminded me that I was capable of finishing if I would put my mind to it and move forward. You provided more support for me emotionally than I can thank you for.

Thanks to my friends and family who offered advice and supported me all along the way in so many ways. Thanks to my father, Wallace, who offered advice that helped me to push myself past the doubt of getting to the finish line. Finally, thanks to Kristie Egan who has provided so much support during this last hurdle to complete this proposal.

Danielle M. Jensen Egan

## CONTENTS

	Page
ABSTRACT.....	iii
PUBLIC ABSTRACT .....	v
ACKNOWLEDGMENTS.....	vii
INTRODUCTION .....	1
Summary .....	4
REVIEW OF THE LITERATURE .....	6
Toddler Internalizing and Externalizing Behaviors .....	8
Theoretical Construct .....	13
Contributing Factors.....	15
Child Care.....	20
Research Questions .....	27
METHODS .....	29
Research Design .....	29
Sample Size and Participants .....	29
Sampling Procedures.....	30
Sample Demographics.....	31
Measures.....	32
RESULTS .....	38
Description of Child Internalizing and Externalizing Behaviors .....	38
Description of Maternal and Provider Stress and Depression.....	39
Research Question 1 .....	41
Research Question 2.....	46
Summary .....	51
DISCUSSION.....	53
Prevalence of Problem Behaviors .....	53
Maternal and Provider Stress and Depression.....	55
Internalizing Behavior .....	56
Externalizing Behaviors .....	58
Limitations.....	61
Implication for Practice and Future Directions .....	64

REFERENCES ..... 68

## LIST OF TABLES

	Page
Table 1 Means and Standard Deviations of Key Measures for Children .....	39
Table 2 Children Scoring in the Area of Concern for Internalizing and Externalizing Subscales .....	39
Table 3 Means and Standard Deviations of Key Measures for Mothers and Providers.....	40
Table 4 Mothers and Providers Scoring in Area of Concern for Stress and Depression .....	40
Table 5 Intercorrelations of Child, Maternal, and Teacher Demographics and Child Internalizing Outcomes .....	42
Table 6 Correlations Between Maternal Stress and Depression and Child Internalizing Outcomes.....	43
Table 7 Correlations Among Provider Stress and Depression and Child Internalizing Outcomes.....	44
Table 8 Correlations Among Maternal Stress and Depression and Provider Stress and Depression .....	45
Table 9 Summary of Hierarchical Linear Regression for Child Internalizing Behavior .....	46
Table 10 Intercorrelations of Child, Maternal, and Provider Demographics and Child Externalizing Outcomes .....	48
Table 11 Correlations Among Maternal Stress and Depression and Child Externalizing Outcomes .....	49
Table 12 Correlations Between Provider Stress and Depression and Child Internalizing Outcomes .....	50
Table 13 Summary of Hierarchical Linear Regression for Child Peer Aggression.....	51

## CHAPTER I

### INTRODUCTION

Child problem behaviors including withdrawal, depression, anxiety, aggression, and attention problems impact later development in many ways. Some of these outcomes related to early problem behaviors include juvenile delinquency, poor school outcomes, mental illness, psychopathology, and problems developing relationships (Beijers, Riksen-Walravan, Putnam, & Jong, 2013; Eisenberg et al., 2001; Gravener et al., 2012; Masten et al., 2014; Valiente et al., 2012). Internalizing and externalizing behaviors are both considered problem behaviors; however, they are both unique considering the developmental outcomes associated with them. Internalizing behaviors are directed at one's self and include anxiety, depression, and withdrawal. In opposition, externalizing behaviors are directed outside the individual and are described as aggression, disruptiveness, and difficulty staying focused (Eisenberg et al., 2001). These behaviors have been studied a great deal in school-aged children. Researchers now recognize that these problem behaviors can be studied in younger children.

Mantymaa et al. (2012) reported problem behaviors evident at age two remain consistent at age five. In fact, 7% of the 2-year-olds in their sample demonstrated internalizing behaviors, 14% demonstrated externalizing, and 6% demonstrated both internalizing and externalizing behaviors. This illustrates the ability of identifying problem behaviors earlier, however more research still needs to be done to identify antecedents that may influence the development of these behaviors at such an early age. Early identification may allow for intervention, which can be more effective when

implemented at a younger age (Holtz et al., 2015; Mäntymaa et al., 2012; Masten et al., 2014).

A great deal of research has found connections between internalizing and externalizing problem behaviors and later negative outcomes. Outcomes related to future emotional and social wellbeing and school success have been consistently documented. Both internalizing and externalizing behaviors have been shown to have negative outcomes such as lower school success, later psychopathology, and difficulty connecting with peers (Eisenberg et al., 2001; Mäntymaa et al., 2012; Masten et al., 2014; Murray, J. et al., 2010; Valiente et al., 2012). These negative outcomes have pushed researchers to pursue understanding problem behaviors and what influences their development.

Developmental theories can be applied to social situations or problems in order to provide a unique lens that can help us understand more about the phenomenon. Bioecological theory was developed over a lifetime by Urie Bronfenbrenner and assists in providing ideas to the possible antecedents of the development of early internalizing and externalizing problem behaviors. According to bioecological theory, the interactions or proximal processes that an individual has with those around them as well as the environment can impact that individual's development (Bronfenbrenner & Morris, 2006). This provides a viewpoint of how interactions with others may influence the development of both internalizing and externalizing behaviors in toddlers.

Many family variables have been explored by researchers, and many have focused on parental depression. Having a parent with depression has been shown to relate to the development of early problem behaviors including both internalizing and externalizing behaviors (Edwards & Hans, 2015; Mäntymaa et al., 2012). If the child's primary

caregiver, often the mother in many studies, has depression it can impact the direct interactions they have with the child. This may be demonstrated through biological risk, criticism directed towards the child, as well as hostility and intrusiveness (Gravener et al., 2012; Mäntymaa et al., 2004). Given the vast research regarding parental mental health, it is important to recognize the other non-parental caregivers who can influence the development of the child. More research is needed to provide understanding of how the mental health of other caregivers may influence the development of early internalizing and externalizing problem behaviors.

Child care providers serve a great number of children, and the care that toddlers receive in their programs can influence their overall development both positively and negatively (Kryzer et al., 2007). Some previous research has showed positive outcomes for children who have been in child care, including in areas of language and cognition (Arace et al., 2021). Contradictory results have been found by others that show no real impact from child care on development and behaviors of children in child care (Arace et al., 2021; Kryzer et al., 2007). Finally, there is research that has linked early child care and increased rates of toddler internalizing and externalizing problem behaviors, as well as other related negative outcomes (Arace et al., 2021, Crockenberg, & Leerkes, 2005; Goelman et al., 2014; Jeon et al., 2014; Gunner et al., 2010; Lemay et al., 2014; Morrissey, 2009; Watermura et al., 2011).

For this reason, researchers have begun to examine possible antecedents of child care that do relate to negative outcomes including early problem behaviors. Most of this research focuses on center child care, and in particular the quality of care (Jeon et al., 2014). The degree of influence on rates of internalizing and externalizing behaviors

depends on the quality of the center. Low-quality care, such as indicated by lower quality classroom interactions and inadequate classroom environment, has been related to higher rates of internalizing and externalizing behaviors (Lemay et al., 2014; Goelman et al., 2014; Watamura et al., 2011). This finding leads to questions regarding what influences child care quality, and what other factors may be involved.

Previous investigations found that child care provider education, experience, and direct interactions with the children influence quality. Child care quality has been connected to problem behaviors during toddlerhood (Lemay et al., 2014). Other factors such as child caregiver mental health have yet to be explored fully to understand its influence on the development of internalizing and externalizing behaviors in young children. Few studies have focused on child care provider mental health, but those that have, primarily investigated center child care and preschool age children (Jeon et al., 2014).

### **Summary**

Internalizing and externalizing problem behaviors in childhood have been shown to contribute to later negative outcomes. Maternal mental health has consistently been related to rates of problem behaviors in children, but gaps still exist in the research regarding the mental health of other caregivers that directly interact with children's lives (Gao et al., 2007; Goelman et al., 2014; Mäntymaa et al., 2004). This study seeks to fill this gap in the research by focusing on both center and family child care providers. Specifically, mental health of child care providers, including stress and depression will be explored to exam their relation with early problem behaviors. Specifically, this study

seeks to examine the relation between child care provider mental health and internalizing and externalizing problem behaviors in toddlers between the ages of 11-36 months. It also seeks to understand how child care provider stress and depression may influence the development of both toddler internalizing and externalizing problem behaviors above and beyond that of parental mental health.

## CHAPTER II

### REVIEW OF THE LITERATURE

A myriad of negative behaviors exhibited by young children potentially contribute to several undesirable developmental outcomes later in life (Cole et al., 2008; Murray et al., 2010). Problem behaviors have often been studied in school aged and more recently preschool aged children (Murray et al., 2010). For children between 12-36 months there has been a gap in the research regarding problem behaviors which include both internalizing and externalizing behaviors.

Young children normally exhibit behaviors that are considered problematic in older children, but for their age group it is considered normal, and the behaviors are often transient (Briggs-Gowan et al., 2006). For example, the “terrible twos” is a statement often used to explain misbehavior during 24-36 months. High frequencies of behaviors, extreme behavior, and behavior rated above a cut off level as described by a diagnostic tool can persist as children age (Briggs-Gowan et al., 2006). Problem behaviors as discussed in this research fit within the category of being persistent, frequent, and/or above a cut off level on a diagnostic tool. These persistent early problem behaviors are related to later problem behaviors and negative outcomes, making it important to be able to identify problem behaviors early.

Externalizing behaviors are often easy to identify as they are directed outward at an individual or the environment. Because of the disruptive nature of these behaviors, externalizing behaviors have received a great deal of attention in the research related to school-age children. Internalizing problem behaviors are much harder to detect at times. This, however, does not mean that internalizing problem behaviors are less important.

Indeed, internalizing problem behaviors especially in young children may not be identified until they become very serious (Cole et al., 2008; Mäntymaa et al., 2012). Young children, specifically 12-36 months can demonstrate both internalizing and externalizing problem behaviors (Edwards & Hans, 2015; Mäntymaa et al., 2012; Masten et al., 2005).

Past research largely focused on internalizing and externalizing behaviors in school-aged children, however recent studies have begun to recognize both behaviors in younger children. According to Mäntymaa et al. (2012) this previous lack of early recognition may be due to lack of diagnostic measures to assess problem behaviors in younger children. More recent research with the capability to measure problem behaviors earlier, show rates of early mental health psychopathy of 15-20% in samples (Mäntymaa et al., 2012). Most of the assessments used to detect problem behaviors were not appropriate for younger age groups. However, more recent research has reported that children who display internalizing and externalizing behaviors early on are more likely to demonstrate these behaviors later (Cole et al., 2008; Henniger & Luze, 2012; Mäntymaa, et al., 2012; Murray, J. et al., 2010). Masten et al. (2014) reported that externalizing behaviors can be detected early in childhood and remain consistent. Cole et al. (2008) and Murray et al. (2010) emphasized early problem behaviors are risk factors for demonstrating psychopathology later in childhood. This has led to current research exploring the pathways between internalizing and externalizing behaviors in toddlers, specifically identifying the prevalence of these problem behaviors, related negative child outcomes, and contributing factors.

## **Toddler Internalizing and Externalizing Behaviors**

### **Prevalence**

A great deal of growth and learning takes place in the first few years of life, this includes physical, cognitive, social, and emotional development. Edwards and Hans (2015) state that early emotional and social problems can manifest themselves very early on, even in the first couple years. As part of the Project on Human Development in Chicago Neighborhoods, Infant Assessment Unit (PHDCN IAU); Edwards and Hans selected 417 infants and their primary caregivers. Primary caregivers in this study were 98% mothers. The sample was made up of 217 male infants and 195 female infants. Additionally, the sample consisted of 52.7% Latino/Hispanic, 26.9% African American/Black, 16.9% Caucasian/White, and 3.9% children from other backgrounds. Of the families in the study 40% received some type of government or public financial assistance. Edwards and Hans (2015) found that of the 417 children in their sample, 9% manifested internalizing problems, 9% demonstrated externalizing behaviors, and a total of 14% showed behaviors in both categories at two-and-a-half-years-old as reported by parents on the Child Behavior Checklist (CBCL). Children who had co-occurring behaviors at this age were more likely to have behavior problems at age five (Edwards & Hans, 2015). Of the children who demonstrated either internalizing, externalizing, or co-occurring behaviors at two-and-a-half-years-old, 51% of them still demonstrated behavior problems at five-years-old.

Using a sample drawn from the European Early Promotion Project (EEPP) longitudinal study, Mäntymaa et al. (2012), the researchers sought to determine if internal and external problems that were apparent at age two would be present at age five.

Children were assessed for behavior problems and emotional well-being or difficulties at two and five years old. At age two, 7% of 96 children in the sample exhibited internalizing behaviors, and 14% demonstrated externalizing problem behaviors. Additionally, 6% showed high levels of both internalizing and externalizing behaviors. At age five, 12% of the sample showed high internalizing behaviors, 14% had high levels of externalizing behaviors, and 6% showed co-occurring problem behaviors. Internalizing and externalizing behaviors at age two were fairly stable and predictive of the same behaviors at age five. Mäntymaa et al. (2012) demonstrated the ability of researchers to identify both internalizing and externalizing behaviors early, and that these early behaviors are related to later problem behaviors. The researchers expressed the importance of detecting problem behaviors early to allow for early intervention.

In a study conducted by Holtz et al. (2015), researchers sought to better understand the frequency of externalizing behaviors in a sample of low-income children between one and five years of age. Within this sample, 87.1% of the families had an annual household income of less than 30,000 per year. Interestingly, 17.4% of the sample demonstrated significant problem behaviors in early childhood. Holtz (2015) hypothesized some possible explanations for the increased rates of problem behaviors in a low-income sample. He explained that children living in poverty are exposed to variables both family and environmental that relate to increased rates of problem behaviors. Additionally, Holtz et al. (2015) stresses that the outcomes of early problem behaviors can have lasting negative consequences which is why it is so important to better understand how to help these children when they are very young. This will require

an increased awareness and attention to the possible antecedents of early problem behaviors.

### **Outcomes**

Understanding that a great deal of social and emotional development takes place early in life, early mental health problems can be very problematic and have lasting repercussions (Edwards & Hans, 2015). For example, poor school outcomes, difficulty in developing relationships, juvenile delinquency, and later psychopathology are a few of the negative impacts that are associated with both internalizing and externalizing behaviors (Beijers, et al., 2013; Eisenberg et al., 2001; Gravener et al., 2012; Masten et al., 2014; Valiente et al., 2012).

Cole et al. (2008) states that research illuminates distinguishable patterns in behavior which can help us understand how early development and early behavior problems can result in later negative outcomes. Early childhood is a time of great development in all areas, but especially in social and emotional development. Young children are learning a great deal about how to recognize and handle their emotions. For example, toddlers learn coping strategies and regulation skills that are necessary to help them manage these strong emotions (Cole et al., 2008).

Murray et al. (2010) used longitudinal data from the British Cohort Study to find out if problem behaviors in early childhood, specifically under the age of five were associated with later problem behaviors at age 10 and criminal activity before age 30. Behavior that was assessed at or before age five predicted problem behaviors assessed several years later at age 10. In addition, problem behaviors measured during early

childhood and at age 10 were strongly associated with being convicted of a crime at or before age 30.

Making friends and interacting with others are important skills that one uses throughout life. Eisenberg et al. (2001) found that children with externalizing behavior problems demonstrated less effortful control or emotional regulation. This can significantly impact social and emotional development. Eisenberg et al. (2001) suggested that children who demonstrate internalizing or externalizing behaviors may have a hard time making and keeping friends. This finding was supported by Valiente et al. (2011), who reported that externalizing behaviors, in particular aggression, can make it difficult for a child to develop and keep relationships. It was also discussed that children who experience a great deal of anxiety and depression can also have difficulty interacting and relating to their peers (Valiente et al., 2011).

Valiente et al. (2012), also discussed both internalizing and externalizing behaviors and academic achievement through direct and indirect pathways. For example, a direct association is anxiety taking tests and lower test scores, and even lower levels of school completion. Having a difficult time focusing or being angry can interfere with the cognitive processes that aid in learning such as paying attention, recalling important information, or thinking through a problem. Children who demonstrate internalizing or externalizing behaviors may not be as motivated to learn in the classroom. Additionally, these children may have a difficult time connecting to peers and teachers who may be a resource for help. These examples illustrate the many pathways that children's internalizing and externalizing problem behaviors may contribute to poor school

outcomes. Various research studies have been conducted to examine these potential pathways.

A longitudinal study, conducted by Masten et al. (2014), examined academic achievement in relation to internalizing and externalizing problem behaviors in 205 children between the ages of 8-12 years of age. When researchers followed-up with the participants after 7, 10, and 20 years, it was found that externalizing behaviors were associated with lower academic achievement in adolescence. Masten et al. (2014) also reported an interesting pathway that indicated that lower academic achievement was related to early externalizing behaviors which was also associated with later increased rates of externalizing behaviors and internalizing behaviors in adolescence. Masten et al. (2014) hypothesized that externalizing behaviors may make it difficult for students to focus in a traditional school setting and that it also may make it difficult for other students to connect to those who demonstrate these behaviors. This finding illustrates how internalizing and externalizing behaviors can co-occur.

Early internalizing and externalizing problem behaviors can negatively impact individuals' development in significant ways. Children who demonstrate anxiety, depression, aggression, inattention, and disruptiveness can fair worse in school, lack close relationships, and struggle with lasting psychopathology. Researchers have stressed the importance of identifying problem behaviors early so that interventions may help decrease the chance of negative outcomes (Holtz et al., 2015; Mäntymaa et al., 2012; Masten et al., 2014). It is also important to understand some of the underlying causes and contributors to these early childhood behavior problems. When trying to understand the

development of certain behaviors and outcomes, human development theories provide a focused lens that can help clarify what may be occurring.

### **Theoretical Construct**

Behavior problems that can negatively impact a child have captivated the attention of researchers who seek to understand these behaviors. In order to fully comprehend internalizing and externalizing behavior problems in young children we need to understand when they are developing, their prevalence, outcomes, interventions, and most importantly identify factors that contribute to their development. Scientific theory provides a lens that helps researchers to view a particular human phenomenon in a way that is designed to create understanding. Bioecological theory recognizes that early experiences influence later outcomes (Bronfenbrenner, 1994).

Urie Bronfenbrenner spent a lifetime creating and expanding on his theory that captured the development of a child or an individual within the context of their environment (Rose & Tudge, 2013). His final theory gives representation to the individual biology and personality, social context, time, and the direct interactions that an individual comes into contact. Within his bioecological Model of development, Bronfenbrenner proposed the proximal process, person, context, and time (PPCT) model to explain the process of reciprocal interaction between the individual, context, and time (Bronfenbrenner & Morris, 2006).

Proximal processes are defined as the direct interactions between the developing individual and others. The proximal processes are the most fundamental part of the model

(Rose & Tudge, 2013). The Person represents the developing individual's unique biology, temperament, and personality (Bronfenbrenner & Morris, 2006).

The Context is divided into 4 ecological systems: the microsystem, mesosystem, exosystem, and the macrosystem (Bronfenbrenner, 1994; Rose & Tudge, 2013). The microsystem is made up of people the developing individual directly interacts with, the mesosystem is the interaction between microsystems. The exosystem exists as a setting or situation in which the developing individual does not exist, however it still effects the microsystem. For example, changes in a parent's work system that may have reverberating effects on the developing child's microsystem is an example of an exosystem. The macrosystem is made up of the culture that the developing individual is a part of.

The last part of the PPCT is time, which incorporates microtime, mesotime, and macrotime (Rose & Tudge, 2013). Microtime and mesotime directly relate the continuity and frequency of proximal processes. Macrotime is best understood as the historical time in which the developing individual exists.

According to bioecological theory, children influence and are influenced by the interactions, person, context, and time in which they grow up in (Bronfenbrenner & Morris, 2006). Specifically, the children's immediate context and proximal processes with the environment, can help explain the development of internalizing and externalizing problem behaviors in young children.

## **Contributing Factors**

Many possible antecedents to early internalizing and externalizing problem behaviors have been investigated previously, which can include both individual and environmental factors. Individual factors include genes, temperament, ability, age, and sex. Environmental factors are broad and can include family socioeconomic status, location, and exposure to poor caregiver mental health.

### **Individual Factors**

Temperament is a primary individual factor that can influence the development of internalizing and externalizing problem behaviors early in life (Arace et al., 2021; Crockenberg & Leerkes, 2005; Edwards and Hans, 2015; Eisenberg et al., 2001; Lemay et al., 2015). Negative emotionality, a characteristic of temperament, can be described as fussiness, fear, anxiety to novelty, as well as anger and frustration. Infants who are easily frustrated can demonstrate more externalizing problem behaviors (Crockenberg & Leerkes, 2005; Eisenberg et al., 2001). Whereas infants who demonstrate fearfulness to novelty stimuli demonstrate more internalizing problem behaviors (Crockenberg & Leerkes, 2005). Interestingly, Crockenberg and Leerkes (2005) reported that the cross-section between temperament and exposure to a lot of child care can further influence the development of problem behaviors. For easily frustrated infants, children under 12 months, more time in child care was related to increased reports of externalizing behaviors. Internalizing behaviors also increased when children who are distressed by novel stimuli spend more time in child care.

Child sex is an area that research on internalizing and externalizing problem behaviors has had some mixed results (Arace et al., 2021). There has been research that has shown that males are more at risk for behavioral problems when enrolled in low-quality child care programs, others have not seen differences based on sex.

Arace et al. (2021) found that child sex with a temperament did provide some light into the occurrence of problem behaviors. It was found that high motor activity including impulsiveness, was seen to be positively associated with problem behaviors. Specifically, males who had high motor activity also had higher levels aggressive behavior and difficulty with sustained attention. Females in the study who were active demonstrated higher rates of attention behaviors such as overactivity, inability to concentrate, and moving activities frequently. In addition, Arace et al. (2021) documented differences in problem behaviors between girls and boys. In their assessment of behaviors, Arace et al. (2021) found that males appear to be more vulnerable to low quality care childcare environments that provide lower levels of learning activities, quality interactions with peers and teachers, and appropriate materials and classroom set-up than high quality childcare environments.

### **Environmental Factors**

There are many different environmental factors that have been shown to increase the risk of internalizing and externalizing behaviors in young children. Edwards and Hans (2015) provide a good overview of the family risk factors that have been associated with both internalizing and externalizing behaviors. These include hostile parenting, family conflict, family social economic status (SES), and maternal mental health. Parenting that is considered more controlling or hostile is related to both internalizing and externalizing

problem behaviors in young children. Conflict within the family has been linked to lower emotional control in young children which is also linked to externalizing problem behaviors. Children may also feel anxious in a home where there is a great deal of conflict (Edwards & Hans, 2015).

Poverty is also related to internalizing and externalizing problem behaviors, and co-occurring behaviors (Edwards & Hans, 2015; Holtz et al., 2015). According to past research, children from low-income families are at an even higher risk for developing problem behaviors early on (Holtz et al., 2015). As demonstrated previously, Holtz (2015) reported a higher rate of toddler internalizing and externalizing problem behaviors in a sample of children from low-income families. Living in poverty can provide several environmental risks that can impact the development of problem behaviors. Holtz et al. (2015) mentioned an increase in inadequate supervision, poor child care, and maternal mental health illness. Edwards and Hans (2015) reported that low income can impact the level of stress, conflict, and stimulation in the environment. These factors can influence the direct interactions a child has with parents and family members.

### **Parental Mental Health**

Caregiver depression, particularly maternal depression, has repeatedly been shown to be a risk factor for the development of internalizing and externalizing behaviors (Edwards & Hans, 2015; Gao et al., 2007; Goelman et al., 2014; Gravener et al., 2012; Henniger & Luze, 2014; Mäntymaa et al., 2004; Murray et al., 2010). Edwards and Hans (2015) state that parents who experience depression or anxiety may pass to their children the genetic predisposition to develop internalizing behaviors such as anxiety and depression. However, maternal mental health extends beyond a genetic risk factor. For

example, Mäntymaa et al. (2004) reported higher hostility towards toddlers and more intrusiveness with parents who had depression. Gravener et al. (2012) reported that mothers with depression demonstrated more criticism and had more self-doubt than mothers without depression, and that this criticism and self-doubt was related to toddler internalizing and externalizing problem behaviors.

In the Finnish longitudinal study conducted by Mäntymaa et al. (2012), individual, parental, and family risk factors were assessed to determine their relationship with later internalizing and externalizing behaviors in young children. It was reported that maternal mental health before their children's birth was statistically significantly related to their children's internalizing symptoms at age five. Children's externalizing behaviors were associated with parental mental health and parenting stress reported before and after the birth of their children. Co-occurrence of risk factors create an even greater risk for internalizing and externalizing behaviors. According to Mäntymaa et al. (2012) the number of risk factors experienced in the first two years of life is statistically significantly associated with later externalizing behaviors.

A study by Dotterer et al. (2021) helps to illustrate some of the impacts of multiple risk factors, by looking at a growing population of parents who are also attending a four-year university. Parenting relationships and stress was assessed both quantitatively and qualitatively among 80 parents attending college who have multiple risk factors and balancing multiple responsibilities. These parents had children between the ages of 2 months and 5 years of age. Parents mean household income was \$1,707.74. It was reported that student parents' feelings of being capable of handling stress impacted the level of distress in their parent child relationships (Dotterer et al., 2021). Many

parents felt that balancing time and their different roles as parent, provider, and student was extremely stressful. However, student parents mentioned some of the resources available to them including financial help with child care costs and support of friends or neighbors, enabled them to stress less about finances and spend more time focusing on their studies.

Negative experiences in early childhood have a powerful influence on the development of both internalizing and externalizing behaviors. A great deal of social and emotional development takes place during early childhood. Because of the rapid growth in this developmental area, it is at greater risk when exposed to negative environmental factors (Cole et al., 2008). The early experience of symptoms of both internalizing and externalizing problem behaviors is directly associated with several negative outcomes. It is important for us to take into consideration the different contexts and environmental factors that may influence outcomes. Continued research is needed to better understand and predict later risk factors.

Young children, specifically toddlers one to three years old, when exposed to negative environmental factors may be at an increased risk for negative outcomes including problem behaviors (Choe et al., 2013; Cole et al., 2008). Cole et al. (2008) stresses the long-term effects that early experiences can have on children including behavioral, psychological, and even physiological functioning. Bronfenbrenner's bioecological theory helps us to understand that the risk factors such as negative parenting and maternal mental health may influence the way that the parent and the child interact. Edwards and Hans (2015) state that maternal depression can make it difficult for mothers to be responsive to their children. Young children rely on primary caregivers to

fulfill their needs, and these primary caregivers hold an important role in the children's microsystem or context. This suggests that interactions with primary caregivers can have lasting impacts on children's development and their development of problem behaviors. Recent research has begun to explore the nature of the relationship between other primary caregivers and internalizing and externalizing problem behaviors in children.

### **Child Care**

Researchers now recognize child care as an important microsystem for a developing child (Lemay et al., 2014). A care setting may be a child's first experience outside of the immediate family. According to the National Center for Education Statistics, in 2019 59% of children under age five are in some nonparental care each week. Further it is reported that 62% of these children were in center-based child care and 20% were in a family-based child care, and the rest were cared for in a kinship setting (Cui & Natzke, 2021). Family child care is a care setting in a non-relative's home, where one or two providers care for a small number of children. Center based child care often have many children who are divided into smaller groups of children, often by age. Center child cares tend to have several staff members (Child Care Aware of America [CCAofA], 2022). According to CCAofA (2014), children under the age of five spend an average of 35 hours in child care per week. With so many infants and toddlers in child care for a large portion of the week, it is important to consider the impact that child care environments may have on early problem behaviors.

## **Child Care and Problem Behaviors**

Bronfenbrenner's theory helps us to see how child care can have a direct influence on the developing child, because its direct interaction with the child. Children who enter child care at an early age can demonstrate higher rates of both internalizing and externalizing behaviors (Crockenberg, & Leerkes, 2005; Lemay et al., 2014; Vandell et al., 2010). Researchers have since tried to determine what aspect of early care may be directly connected to increased rates of internalizing and externalizing behaviors. Crockenberg and Leerkes (2005) found that that longer hours, more than 30 hours per week, spent each week in child care is related to higher rates of internalizing and externalizing behaviors in some children. This was true for children who were easily frustrated or had sensitive temperaments, while controlling for maternal depression, education, and mothers' assessment of quality of care. Connected to length of time in care, Morrissey (2009) noted that children who were in more than one child care setting were more likely to demonstrate problem behaviors, which is more common with working mothers and children who are preschool aged.

There are several researchers who have found a relation between the quality of care provided and rates of internalizing and externalizing behaviors (Vandell et al., 2010; Watamura et al., 2011). Based on data from the NICHD Study of Early Child Care and Youth Development, Vandell et al. (2010) reported that enrollment in high quality child care, measured using the Observational Record of the Caregiving Environment (ORCE) in early childhood was connected to lower rates of externalizing behaviors. Watamura et al. (2011) examined how children from lower quality parenting homes fared in both low- and high-quality child care settings which was assessed using the ORCE. Children from

homes with low quality parenting who were enrolled in low-quality programs were at an increased risk for higher rates of problem behaviors. These children had the highest risk for increased problem behaviors, when compared with children who had low-quality home lives and high-quality child care, or children who had high-quality parenting and low-quality child care. There are many variables that may come into play when we consider the relation between child care quality and problem behaviors in toddlers.

The path between child care quality and rates of early problem behaviors is not entirely clear. For example, some researchers have found that children are impacted differently by child care and child care quality based on their sex or individual temperaments (Gunner et al., 2010; Lemay et al., 2014). Arace et al. (2021) stated that males may be more likely to be impacted by negative environments which include negative child care settings that are rated lower on environment, interaction, and learning activities. Crockenberg and Leerkes (2005), found that quality of care as reported by mothers duplicated previous research findings, which showed that higher reported quality was associated with less internalizing and externalizing behaviors.

Crockenberg and Leerkes (2005) looked at child care quality, age when infants entered child care, temperament, quantity of time spent in child care, infant behavior, and toddler behavior. Children who were easily frustrated, distressed, or had high activity levels were more impacted by child care type and quantity of time spent in child care. These children who were in a child center for more than 30 hours per week showed higher levels of externalizing behaviors Crockenberg & Leerkes, (2005). Children with a temperament that was highly reactive to new situations and stimuli showed increased

internalizing problem behaviors when they were enrolled in 30 or more hours a week of non-parental care (Crockenberg & Leerkes 2005).

Gunnar et al. (2010) examined stress levels of children in full time family child care using cortisol levels. Provider and program features such as number of children in care, number of adults, over controlling provider behavior and so on were assessed to determine if an association existed with cortisol levels. Finally, child behaviors were assessed in relation to cortisol levels while in care. Their sample included 151 children between three and five and a half years of age. It was found that most children were found to have increasing cortisol levels during the day while in care. At home these levels stayed relatively the same (Gunner et al., 2010). In addition, female children with elevated stress levels also demonstrated more internalizing behavior. Whereas male children with higher levels of stress exhibited more externalizing behaviors. Higher levels of cortisol were statistically significantly related to provider behaviors in this study including controlling, and intrusive behaviors.

Other provider characteristics can also have an impact on the children in the program. According to Kryzer et al. (2007) young children, especially those under the preschool age, are highly impacted by their caregiver. Specifically, children demonstrated more externalizing behaviors when their child care providers demonstrated low sensitivity and support. Child care provider education seems to be related to child care quality, but according to Lemay et al. (2014) education was not significantly correlated with the problem behaviors of the children in care.

## **Child Care Provider Mental Health**

As mentioned previously primary caregiver mental health, including parental stress and depression have been shown to be predictors of internalizing and externalizing behaviors in toddlers and preschoolers (Mäntymaa et al., 2012). Researchers are beginning to recognize the influence of stress and depression in the lives of other caregivers involved in a child's life such as a child care provider. Increased depression levels in child care providers have been connected to caregiving quality (Hamre & Pianta, 2004; Groeneveld et al., 2012). Hamre and Pianta (2004) found that 9.4% of the 1,217 providers in their research were considered clinically depressed using the Center for Epidemiological Studies Depression Scale (CES-D).

A study by Groeneveld et al. (2012) compared child care provider cortisol levels to perceived stress. These measures of provider stress were then related to measures of program quality. Their sample consisted of both center and family child care providers. Groeneveld et al. (2012) found that cortisol levels in both types of caregivers were higher on the days that they were working with children. Family care providers in this sample offered higher quality of care to young children compared to center care providers. However, when the family childcare providers experienced high levels of cortisol, they provided lower levels of quality care. Specifically, family care providers' perceived stress was related to less positive caregiving (Groeneveld et al., 2012).

A meta-analysis of the literature by Corr et al., (2014), sought to synthesize the research on the prevalence of stress and depression in child care providers, its relation to program quality, and how work stress related to provider stress and depression. They

found that child care providers who had low stress and depression, also had higher quality programs.

Family care providers face a great deal of stress while trying to run a business in their home. Gerstenblatt et al. (2014) used qualitative methods to better understand the common stressors related to running a family child care. They found that the multiple roles, disrespect, and defining the boundary between work and personal life were common stressors mentioned by family care providers. Family care providers often face difficulty dealing with parents, especially when parents do not pay, or fight their policies. Regulations, restrictions, and observations by state and accreditation worker also present a great deal of stress, even though child care providers understand the need for them.

An exception to the lack of literature on the role of care providers' mental health in toddlers' externalizing and internalizing outcomes is a study by Jeon et al. (2014) that looked at how teacher depression, child care quality and behavior problems were related. According to their findings, teacher depression was both directly and indirectly related to the internalizing and externalizing behaviors reported by teachers. There were some differences in teacher and parent ratings of child internalizing and externalizing problem behaviors. Discrepancies among teachers and parents in reported problem behavior is common, but the researchers in this study suggest the possibility that teacher depression may influence their ratings of child behavior problems. This study included center child care and family child care in relation to preschool aged problem behaviors. Mäntymaa et al. (2012) showed that problem behaviors could be found in toddlerhood and that these behaviors remain consistent. Therefore, this research seeks to examine relations between

child caregiver stress and depression with child internalizing and externalizing problem behaviors.

Early exposure to undue hardship impacts the emotional development and regulation of young children (Cole et al., 2008). Parent mental health has been shown to impact young children's social emotional development. Specifically, children whose mothers report higher levels of depression and parenting stress have shown higher rates of internalizing and externalizing behavior (Choe et al., 2013; Gravener et al., 2012). The question of whether child care provider stress and depression are also related to child outcomes has yet to be fully examined.

### **Summary**

Internalizing and externalizing behaviors can be detected at an early age. These problem behaviors in toddlers remain relatively consistent through early childhood, and have lasting effects such as poor school success, difficulty making and maintaining relationships, and later development of psychopathology. Early identification of these behaviors as well as the identification of possible antecedents can help us understand how to best help alleviate some of the negative outcomes that can result from the high rates of both internalizing and externalizing problem behaviors.

Researchers have connected both individual and environmental factors to rates of internalizing and externalizing problem behaviors. These include sex, temperament, family poverty, and caregiver depression. However, most of the research on caregiver depression focuses on maternal depression. Child care providers who spend a great deal of time with the children in their program can impact the child as well. Thus, further

information is needed regarding how child care provider mental health, including depression and stress, influence the development of internalizing and externalizing problem behaviors in toddlers. This research seeks to fill this gap and provide further knowledge that will direct later research and help guide intervention efforts. The following research questions were addressed in this study.

### **Research Questions**

1. What family, child, and child care provider characteristics are related to toddler internalizing problem behaviors?
  - a. Does maternal mental health contribute to the development of toddler internalizing problem behaviors?
  - b. Does provider mental health uniquely contribute to the development of toddler internalizing problem behaviors above and beyond that of maternal mental health?
2. What family, child, and child care provider characteristics are related to toddler externalizing problem behaviors?
  - a. Does maternal mental health contribute to the development of toddler externalizing problem behaviors?
  - b. Does provider mental health uniquely contribute to the development of toddler externalizing problem behaviors above and beyond that of maternal mental health?

It is hypothesized that negative emotionality, as well as family income will be correlated with toddler internalizing problem behaviors. It is hypothesized that the

parental mental health variables will statistically significantly predict toddler internalizing problem behaviors. It is proposed that child care provider stress and depression will make a significant contribution to the multiple regression model predicting toddler internalizing problem behaviors. It is hypothesized that negative emotionality, as well as family income will be related to toddler externalizing behaviors. It is hypothesized that child care provider mental health, including stress and depression, will provide a significant contribution to the multiple regression model predicting toddler externalizing problem behaviors.

## CHAPTER III

### METHODS

#### **Research Design**

The relation between child care provider depression and child internalizing and externalizing behavior problems has not been examined fully in previous research. This correlational study sought to determine if associations exist among child care provider stress and depression, parental stress and depression, and toddler social emotional problem behaviors.

#### **Sample Size and Participants**

This research utilized data from the Child Care Access Means Parents In School (CCAMPIS) program at Utah State University and three additional cases from family child care providers in Utah. The CCAMPIS program is a U.S. Government program awarded to universities to support Pell Grant eligible student parents with subsidies for child care tuition. The sample from the CCAMPIS research consisted of 68 mothers with children between 11 and 36 months. Consent was provided by all 68 mothers for their children's care provider to complete a social-emotional questionnaire about their children. However, only 35 mothers completed the parent portion of the research including the stress and depression measures. Three additional cases were added to the sample which consisted of three additional mothers and three family child care providers. The final sample size for this study consisted of 71 child care providers and 38 mothers.

## Sampling Procedures

All student participants in the CCAMPIS project as well as their spouses were asked to participate in research regarding parent stress and child development. Parents who consented to participate were all mothers. Mothers who consented to participate, also consented to having their child care provider complete social emotional assessments on their children. After this consent was received, links were then sent out to both mothers and child care providers to complete demographic questions and mental health measures. The child social emotional questionnaire was sent via mail to child care providers.

The three additional cases were recruited by email through the Utah Care About Childcare (CAC) statewide email list. The email had a link and a QR code for providers to use to access the informed consent, eligibility questions, and provide their contact information. The nature of the study required information not only from the providers but also the mothers of the toddlers in their program. Child care providers who expressed willingness to participate were provided a flyer via email to send to or hand out to mothers in their program who had children within the specified age group. The flyer contained information regarding the research, a QR code, and link to get more information. Mothers were first provided a letter of introduction and letter of consent when they visited the link, followed by the parent portion of the research including demographics, stress measures, and depression measures.

A signed letter of consent was obtained from both the child care providers and the mothers. Once both letters of consent were received, and mothers completed their portion of the research, child care providers received a link to complete a set of demographic

questions, and mental health assessments of depression and stress. Child care providers then completed a social emotional developmental assessment for the child. Each of the measures were self-administered survey/questionnaire format. All forms and measures were available in English; therefore, participants needed to be English speaking with at least an eighth grade reading level. Unfortunately, this data collection through Utah CAC coincided with the onset of the COVID-19 pandemic resulting in only three cases with both childcare provider and mother data. There were not any significant differences on key demographic variables such as age, ethnicity, and gender between the 68 cases from the CCAMPIS data and the three additional cases. Thus, all 71 cases are included in the sample description and in the analyses.

## **Sample Demographics**

### **Mother and Child**

The mothers who participated ranged in age from 21 to 41 years, with a mean age of 28. The ethnicity of the mothers who participated is not widely varied, with only one parent identifying as Asian, the rest identified as white. As most of the sample came from the CCAMPIS research and the majority of the mothers were students enrolled as either an undergraduate or graduate student at Utah State University. The mean monthly family income was \$1644.84, with a mean family size of 3.72.

Basic child demographics were reported by the mothers. The sample of 71 children in the study ranged in age from 11 to 35 months, with a mean age of 25.69 months. Of the children sampled 50% of the children were female, and 50% were male.

### **Child Care Provider**

The numbers of center and family child care providers were similar, with 35 family child care providers and 33 center providers participating in the study. All providers were between 20 and 54 years of age with a mean age of 37.5. All providers who reported ethnicity classified themselves as white. All child care providers who participated identified as female. Many of our provider sample had received at least some college education, or a degree, with 54 (79%) stating that they had training beyond high school. Of those 54, there were 24 (35%) who have a college degree. The mean household income was between \$25,000 to \$39,999 per year. Teachers varied a great deal in their number of years of experience as a provider ranging from less than 6 months to 26 years of experience. The mean years of experience as a provider was 10.59.

### **Measures**

#### **Stress**

Child care provider and maternal stress were assessed using the Perceived Stress Scale (PSS) and the SOS: A Measure of Day-to-Day Feelings. Both child care providers and mothers were asked to complete the SOS: A Measure of Day-to-Day Feelings (Amirkhan, 2012). This survey seeks to measure the amount of stress one feels each day. This measure also combines both positive and negative statements that participants are asked to rate on a continuum from not at all to a lot. A total of 30 items were ranked that describe how the participants feel each day. Scoring separates responses into two separate stress scales; event load stress and personal vulnerability. The personal vulnerability scale

helps researchers look at how individuals may be able to cope with high levels of stress. The SOS measure helps identify high risk individuals based on both event load stress and personal vulnerability scores. Those with high event load scores ( $> 40$ ), and personal vulnerability ( $>30$ ) are considered high risk. Amirkhan (2012) reported adequate validity and reliability with a Cronbach's alpha of .95 and rest retest reliability of .76.

The PSS measure asks how often during the past month the individual felt stress. It is composed of 14 items that are ranked on a continuous scale of 0-4, 0 indicating never, and 4 indicating very often (Cohen et al., 1983). The questions include seven positive items and seven negative items which include "In the last month, how often have you been upset because of something that happened unexpectedly?", and "In the last month, how often have you been angered because of things that happened that were outside of your control?" (Cohen et al., 1983, p. 394-395). The positive items were reverse coded when the measures were scored. Each item was then added together for an overall stress score. Scores can range between 0-56 (Cohen et al., 1983). High scores on the Perceived Stress Scale suggest high levels of perceived stress (Andreou et al., 2011). The PSS has sufficient levels of reliability ( $r = .55 - .85$ ), with higher test-retest reliability between shorter time frames. A Cronbach's alpha of .84 - .86 was reported for the PSS (Cohen et al., 1983). However, the PSS scale does not contain cut-off scores like the SOS, so there is no set score that tell us when a participant scored in a high-risk area for the measure.

Both the PSS and the SOS provide a broad overview of the participants' stress. The PSS is helpful because it provides a look at how parents feel capable of handling the

stress that they face. The SOS is a very helpful measure that gives context into what scores may be in an area of concern.

## **Depression**

The Center for Epidemiological Studies-Depression Scale Short Form (CES-D-10) was used to measure child care provider and maternal depression. The CES-D was developed by Ben Z. Locke and Peter Putnam for the National Institute of Mental Health (Radloff, 1977). The CES-D was created as a screening tool for depression and depression disorder. The CES-D has been used to measure maternal, parental, and child care provider depression (Henniger & Luze, 2014). The CES-D-10 was selected for this project because it is a frequently used shorter version of the CES-D designed to measure depression (Björgvinsson et al., 2013). Participants were asked to rate how often in the last week they have felt depressed. The measure includes 10 items which are rated on a scale of 1-4: 1 meaning rarely or never, 2 some or a little, 3 occasionally or moderate, and 4 most or all of the time (Björgvinsson et al., 2013). Each participant received a score between 0-30, where scores closer to 0 indicate lower depression symptomology and scores closer to 30 indicate higher levels of depression symptomology. Individuals who score above 16 on this measure are at risk of clinical depression. Miller et al. (2008) reported a Cronbach's alpha of .86 as well as a test-retest reliability of .85. The CES-D-10 demonstrated construct validity with the depression subscales of the Behaviour and Symptom Identification Scale (BASIS-24) (Björgvinsson et al., 2013).

## **Internalizing and Externalizing Behaviors**

Problem behaviors including internalizing and externalizing behaviors were measured using the Infant Toddler Social Emotional Assessment (ITSEA). Developed by Alice Carter and Margaret Briggs-Gowan (2006), the ITSEA was designed to identify delays in a child's social and emotional development. This measure was designed to help fill the gap of age-appropriate instruments of social and emotional abilities for children ages 12-36 months. The measures for one child in the sample was completed while the child was 11 months old but was still included in the analyses as the age was within an acceptable window. Briggs-Gowan and Carter (2007) recognized that social emotional abilities and problems for very young children differ from older children, and early recognition of problems or delays is important for effective intervention. This measure was selected for this research study because the population is toddlers between the ages of 11-35 months.

The ITSEA has separate forms to be completed either by parents or the children's care providers/teachers. It contains 166 items in both forms. For research purposes, the inter-rater reliability between parents and providers has been reported to be .24- .66 (McCabe & Altamura, 2011). The measure is composed of four domains and 17 subscales. Two domains and one additional subscale are used in this study and include: externalizing (activity/impulsivity, aggression/defiance, peer aggression), internalizing (depression/withdrawal, general anxiety, separation distress, and inhibition to novelty), and negative emotionality (Carter et al., 2003). The externalizing domain contains items such as "hits, bites or kicks you (or other parent)" (Carter & Briggs-Gowan, 2006, p. 145). While the internalizing domain asks questions such as whether the child is

“unhappy/sad without any reason” (Carter & Briggs-Gowan, 2006, p. 146). The negative emotionality subscale contains items such as “trouble adjusting to changes, hard to soothe when upset, and easily frustrated” (Carter & Briggs-Gowan, 2006, p. 148). Childcare providers were instructed to rate each item from 0-2 where 0 is not true/rarely, 1 is somewhat true/sometimes, and 2 is very true/often (Briggs-Gowan & Carter, 2007). Scores are reported as T scores for each of the domains as well as three index scores, which are the maladaptive, social relatedness and atypical cluster (Briggs-Gowan & Carter, 2007).

Briggs-Gowan and Carter (2007) reported acceptable internal reliability for the ITSEA with a Cronbach’s alpha of .80 to .90. The negative emotional reactivity subscale from the ITSEA is highly correlated with the Colorado Child Temperament Inventory (CCTI), negative emotional reactivity  $r=.68$ , showing that the measure has convergent validity (Briggs-Gowan & Carter, 1998). Gokiert et al. (2014) reported an inter-rater reliability at .72-.79. Carter et al. (2003), reported relatively high test-retest coefficients for the domains of the ITSEA at .82-.90. The ITSEA also showed statistically significant correlation with observation methods of assessing problem behaviors and social emotional competencies.

According to Berg-Nelson et al., (2012), it is not uncommon for parents and teachers to differ when rating problem behaviors in children. Mäntymaa et al. (2012) stated that parents’ psychopathy, stress, and the quality of their relationship with their child may impact ratings of child behavior. Also, teachers are considered a valid source for rating problem behaviors as they work with many children at the same developmental level so they can recognize what is developmentally appropriate behavior or not (Berg-

Nelson et al., 2014; Jeon et al, 2014). In addition, Razza et al. (2010) suggested that teacher report may have a better reflection on later school success because how a child behaves at home may be different then at school. Jeon et al. (2014) also stated that teachers are effective at rating problem behaviors for screening for concerns. Therefore, the teacher report of negative emotionality, toddler internalizing problem behaviors, and externalizing problem behaviors assessed using the ITSEA was selected for the purposes of this research project. Areas of concern were assessed by using the parent cut off score table as the authors did not develop one for teacher report.

## CHAPTER IV

### RESULTS

In this chapter, the description of child internalizing and externalizing outcomes as well as maternal and child care provider stress and depression were analyzed first. The research questions will then be addressed as outlined in Chapter II. Analyses were conducted utilizing Statistical Package for Social Studies (SPSS) version 28. For this study, a *p*-value of .05 or less was used as the cutoff point to determine statistical significance. In addition, due to the exploratory nature of this study, as well as the small sample size, results approaching statistical significance with a *p*-value less than .10 will also be reported.

#### **Description of Child Internalizing and Externalizing Behaviors**

Child internalizing and externalizing subscales scores were explored and are shown on Table 1. Internalizing behavior subscales include depression/withdrawal, generalized anxiety, separation distress, and inhibition to novelty. Externalizing behavior subscales include activity/impulsivity, aggression defiance, and peer aggression. The most striking result to emerge from the data is that 16.9% of children in the sample scored in the area of concern for aggression defiance and peer aggression, 29.6% of the sample scored in the area of concern for depression/withdrawal (Table 2).

**Table 1***Means and Standard Deviations of Key Measures for Children*

Measure	<i>M</i>	<i>SD</i>
Activity/Impulsivity	.61	.45
Aggression Defiance	.40	.41
Peer Aggression	.40	.47
Depression Withdrawal	.25	.34
Generalized Anxiety	.14	.18
Separation Distress	.47	.37
Inhibition to Novelty	.68	.50
Negative Emotionality	.60	.45

Note. *N* = 71**Table 2***Children Scoring in the Area of Concern for Internalizing and Externalizing Subscales*

Measure	<i>n</i>	%
Activity/Impulsivity	5	7.0
Aggression Defiance	12	16.9
Peer Aggression	12	16.9
Depression Withdrawal	21	29.6
Generalized Anxiety	2	2.8
Separation Distress	1	1.4
Inhibition to Novelty	6	8.5
Negative Emotionality	18	26.1

Note. *N* = 71

### **Description of Maternal and Provider Stress and Depression**

Analyses of mother and provider stress and depression were then completed.

Means and standard deviations are shown in Table 3. SOS scores for Personal Vulnerability and Event Load, as well as the Center for Epidemiological Studies-Depression Scale Short Form (CES-D-10) were explored (see Table 4). Mothers scored higher on the SOS Event Load subscale than they did on the personal vulnerability

subscale, this was also true of providers. Scores on the CES-D-10 above the clinical cut-off of 16, indicated a high risk for depression. It is apparent from Table 4 that very few mothers scored at or above the clinical cut-off level of 16 on the CES-D-10. Many teachers scored above the clinical level as having high depression.

**Table 3**

*Means and Standard Deviations of Key Measures for Mothers and Providers*

Measure	<i>M</i>	<i>SD</i>
<b>Mother</b>		
Stress Overload: Personal Vulnerability	25.49	10.20
Stress overload: Event Load	38.24	10.42
Perceived Stress	24.37	7.69
Depression	8.94	7.69
<b>Provider</b>		
Stress Overload: Personal Vulnerability	29.11	11.00
Stress overload: Event Load	38.24	10.75
Perceived Stress	29.06	7.13
Depression	13.92	7.43

*Note.* Parent *N* = 34-41. Provider *N* = 66-68

**Table 4**

*Mothers and Providers Scoring in Area of Concern for Stress and Depression*

Measure	<i>n</i>	%
<b>Mother</b>		
Stress Overload: Personal Vulnerability	9	23.2
Stress overload: Event Load	22	53.5
Depression	2	5.8
<b>Provider</b>		
Stress Overload: Personal Vulnerability	30	45.3
Stress overload: Event Load	40	59.9
Depression	30	45.4

*Note.* Mother *N* = 34-41. Provider *N* = 66-68

## Research Question 1

*What maternal, child, and child care provider characteristics are related to toddler internalizing problem behaviors? Does maternal mental health contribute to the development of toddler internalizing problem behaviors? Does provider mental health uniquely contribute to the development of toddler internalizing problem behaviors above and beyond that of maternal mental health?*

### Correlations

The strength of the associations between child, mother, and child care provider demographic characteristics along with child internalizing behaviors were analyzed using Pearson Product Moment Correlation (see Table 5). The maternal variables including age and family income were not statistically significantly associated with each other or with any of the internalizing variables. Family household income did approach a statistically significant association with child separation distress ( $r = .32, p = .08$ ), which may suggest that children of families with high incomes experienced high levels of distress.

There were no statistically significant associations between provider demographics and child internalizing subscales and total score. Many of the provider demographics were associated with one another including provider age, income, number of children in their care, and number of years providing care as shown in Table 5. Interestingly, as providers age there is a positive association with their household monthly income, but there was not a statistically significant relation between provider education and income.

**Table 5***Intercorrelations of Child, Maternal, and Teacher Demographics and Child Internalizing Outcomes*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Child Sex	-													
2. Child Age at ITSEA	.07	-												
3. Maternal Age	-.08	.19	-											
4. Family Income	-.23	-.06	-.03	-										
5. Provider Age	-.22	.12	-.07	.19	-									
6. Provider Highest Completed Education	-.13	.04	-.06	.09	.18	-								
7. Provider Monthly Household Income	-.19	-.04	-.16	-.08	.36**	-.10	-							
8. Provider Number of children in care	0.09	.25*	.06	-.16	.08	-.11	.29*	-						
9. Number of years as a Provider	-.05	.09	-.07	-.06	.78**	.02	.31*	.16	-					
10. Child Depression and Withdrawal	.19	.04	-.19	-.06	-.04	.01	.13	.18	-.13	-				
11. Child Generalized Anxiety	.02	.08	-.09	.05	-.01	.13	-.16	.14	-.05	.59**	-			
12. Child Separation Distress Subscale	-.20	-.16	-.23	.32 <sup>+</sup>	-.04	.00	-.05	.04	-.08	.19	.45**	-		
13. Child Inhibition to Novelty	-.09	.05	-.10	.08	-.06	.04	-.08	.01	-.11	.39**	.46**	.09	-	
14. Child Internalizing	-.04	.00	-.21	.14	-.08	.05	-.04	.12	-.16	.72**	.78**	.58**	.76**	-

Note. Child  $N = 68-71$ . Mother  $N = 32-38$ . Provider  $N = 68$

<sup>+</sup>  $p < .10$  \*  $p < .05$  (two-tailed). \*\*  $p < .01$  (two-tailed).

Correlational analyses were also conducted among maternal stress and depression and child internalizing subscales and internalizing total scores (see Table 6). It is evident from Table 6 that mothers stress and depression scores were not statistically significantly associated with child internalizing depression/withdrawal, generalized anxiety, separation distress, inhibition to novelty, and total internalizing scores.

**Table 6**

*Correlations Between Maternal Stress and Depression and Child Internalizing Outcomes*

Maternal Variable	Child Depression and Withdrawal	Child Generalized Anxiety	Child Separation Distress	Child Inhibition to Novelty	Internalizing Total
1. SOS: Personal Vulnerability	.28	.24	.01	-.07	.11
2. SOS: Event Load	.13	.18	.07	.04	.12
3. Perceived Stress	.17	.20	.03	-.14	.05
4. Depression	.18	.23	.22	.14	.25

Note.  $N = 32-38$

<sup>+</sup>  $p < .10$ . \*  $p < .05$  (two-tailed). \*\*  $p < .01$  (two-tailed).

The correlational analysis of provider stress and depression are presented in Table 7. There were no statistically significant correlations found between provider depression and child internalizing outcomes. Table 7 does indicate that the correlation between provider depression and children's internalizing total score approached statistical significance ( $r = -.23, p = .068$ ) indicating that providers reporting more depressive symptoms also report fewer internalizing behaviors in the children they care for than providers with fewer depressive symptoms.

**Table 7***Correlations Among Provider Stress and Depression and Child Internalizing Outcomes*

Provider Variable	Child Depression and Withdrawal	Child Generalized Anxiety	Child Separation Distress	Child Inhibition to Novelty	Internalizing Total
1.SOS: Personal Vulnerability	-.11	-.02	-.01	-.04	-.06
2. SOS: Event Load	.07	.11	.06	.06	.10
3. Perceived Stress	-.04	.03	-.06	-.07	-.07
4. Depression	-.20	-.05	-.15	-.18	-.23 <sup>+</sup>

Note.  $N = 63-68$ <sup>+</sup>  $p < .10$ . \*\*  $p < .01$ (two-tailed).

Correlational analyses were also conducted among maternal stress and depression variables (see Table 8). Table 8 shows that maternal stress and depression variables on all measures are statistically significantly intercorrelated ranging from .66 - .80. Provider stress and depression were also intercorrelated, with provider stress and depression variable associations ranging from .28 - .70.

The results among maternal and provider stress and depression indicate that there were no statistically significant associations among these variables.

**Table 8***Correlations Among Maternal Stress and Depression and Provider Stress and Depression*

Variable	1	2	3	4	5	6	7	8
<b>Mother</b>								
1. SOS Personal Vulnerability	-							
2. SOS Event Load	.66**	-						
3. Perceived Stress	.78**	.67**	-					
4. Depression	.78**	.66**	.80**	-				
<b>Provider</b>								
5. SOS Personal Vulnerability	-.11	.13	-.06	-.18	-			
6. SOS Event Load	.04	.19	.17	.17	.54**	-		
7. Perceived Stress	-.10	-.17	-.04	-.06	.28*	.09	-	
8. Depression	-.12	-.11	-.09	-.12	.47**	.02	.70**	-

Note. Mothers  $N = 32-41$ . Provider  $N = 64-68$

\*  $p < .05$ . \*\*  $p < .01$ (two-tailed).

### Regressions

The correlations for research question 1 guided variable selection for the regression models, with a goal of selecting the strongest correlates and minimizing intercorrelation and multicollinearity. Since there were no statistically significant associations among the maternal depression variables and child problem behaviors, we looked at the strongest correlation which was maternal depression and child internalizing total score as it approached statistical significance. Model 1 included child sex, child age, and maternal depression. Provider depression was then added to Model 2 to see if it contributed to child internalizing behaviors beyond that of maternal depression, child age, and sex.

The results of the regression model are shown in Table 9. Model 1 shows that child sex, child age, and maternal depression did not statistically significantly contribute to child internalizing scores,  $F(3, 25) = .449, p = .720, \text{Adjusted } R^2 = -.063$ . As shown in Model 2

provider depression did not make a statistically significant contribution to child internalizing scores on the ITSEA,  $F(4, 24) = .825, p = .825, \text{Adjusted } R^2 = -.098$ . The adjusted  $R^2$  shows that we are accounting for very little of the variance in child internalizing behavior with the variables of maternal depression, child sex, child age, and provider depression.

**Table 9**

*Summary of Hierarchical Linear Regression for Child Internalizing Behavior*

Variables	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	Beta	<i>B</i>	<i>SE</i>	beta
Child Sex	.002	.103	.003	.006	.105	.012
Child Age	-.002	.007	-.047	.000	.007	-.011
Maternal Depression	.012	.011	.227	.011	.012	.203
Provider Depression				-.004	.008	-.097
$R^2$	.051			.059		
Adjusted $R^2$	-.063			-.098		
$F$ Change	.449			.192		

*Note.*  $N = 28$

## Research Question 2

*What maternal, child, and child care provider characteristics are related to toddler externalizing problem behaviors? Does maternal mental health contribute to the development of toddler externalizing problem behaviors? Does provider mental health uniquely contribute to the development of toddler externalizing problem behaviors above and beyond that of maternal mental health?*

## Correlations

Child, maternal and provider demographics were included in the correlation matrix (see Table 10) focusing on child externalizing outcome subscales and total externalizing scores. The externalizing total score includes scores on the activity/impulsivity, aggression/defiance, and peer aggression subscales. Child sex was negatively related with Activity/Impulsivity behaviors in children indicating that males had higher rates of activity/impulsivity than females included in the sample ( $r = -.27, p = .02$ ).

Interestingly, as shown in Table 10 there was a statistically significant correlation between family income and child peer aggression ( $r = .37, p = .03$ ), indicating that as family income increase, there are also increased levels of peer aggression. The correlations among family income with both child aggression defiance ( $r = .33, p = .07$ ), and child externalizing total score ( $r = .32, p = .08$ ) approached statistical significance indicating that as family income increased, there are also higher levels of aggression defiance and overall problem behaviors. Table 10 shows the same correlations among provider age, household income, number of children in care and number of years as a provider as presented in Table 5 and the previous section of the results for the first research question.

**Table 10**

*Intercorrelations of Child, Maternal, and Provider Demographics and Child Externalizing Outcomes*

Variable	Child AI	Child AD	Child PA	Child Externalizing
1. Child Sex	-.27	-.01	-.08	-.15
2. Child Age at ITSEA	.13	.12	.16	.16
3. Maternal Age	.02	-.13	.04	-.02
4. Family Income	.12	.33 <sup>+</sup>	.37*	.32 <sup>+</sup>
5. Provider Age	-.12	-.07	.10	-.04
6. Provider Highest Completed Education	.12	-.11	-.04	-.01
7. Provider Monthly Household Income	-.16	-.07	.03	-.08
8. Provider Number of children in care	.02	.16	.03	.08
9. Number of years as a Provider	-.18	-.08	.03	-.09

Note. Provider  $N = 68$ . Mother  $N = 32-38$ .

<sup>+</sup>  $p < .01$ . \*  $p < .05$  (two-tailed). \*\*  $p < .01$  (two-tailed).

Correlations among maternal and provider stress and depression scores were examined in relation to child externalizing variables. Correlations among maternal stress and depression with child externalizing outcome variables are presented in Table 11. Similar, to child internalizing subscales, externalizing subscale scores were highly intercorrelated with each other. The correlations range from  $r = .44$  to  $r = .91$ . None of the correlations among maternal stress and depression variables and child externalizing outcome variables were statistically significant. However, the association between maternal event load stress and child activity/impulsivity approached statistical significance ( $r = .28, p = .08$ ).

**Table 11***Correlations Among Maternal Stress and Depression and Child Externalizing Outcomes*

Maternal Variable	Child Activity/Impulsivity	Child Aggression Defiance	Child Peer Aggression	Child Externalizing Total
1. SOS: Personal Vulnerability	-.02	.17	.08	.06
2. SOS: Event Load	.28 <sup>+</sup>	.11	.08	.18
3. Perceived Stress	.10	.18	.22	.20
4. Depression	.15	.17	.12	.17

Note.  $N = 35-41$ <sup>+</sup>  $p < .01$ . \*  $p < .05$  (two-tailed). \*\*  $p < .01$  (two-tailed).

Next Table 12 shows the correlations among provider stress and depression variables and child externalizing subscales and externalizing total scores. There is a positive statistically significant correlation between providers event load stress score and child peer aggression,  $r = .25$ ,  $p < .05$ . Higher event load scores for providers were associated with their higher reported child peer aggression.

**Table 12***Correlations Between Provider Stress and Depression and Child Internalizing Outcomes*

Provider Variable	Child Activity/Impulsivity	Child Aggression Defiance	Child Peer Aggression	Child Externalizing Total
1. SOS: Personal Vulnerability	-.07	-.11	-.09	-.11
2. SOS: Event Load	-.19	.03	.25*	.04
3. Perceived Stress	.03	.09	.09	.08
4. Depression	.14	-.05	-.01	.04

Note.  $N = 63-63$ \*  $p < .05$  (two-tailed).**Regressions**

In reviewing the correlations for both maternal and teacher mental health and child externalizing outcomes we see there is only one statistically significant association between teacher SOS event load and child peer aggression. The maternal mental health variable selected for the regression model was the Perceived Stress Scale total score. It was selected because it was the most significant maternal mental health variable in association with child peer aggression. As you can see in Table 13 child sex, age, and maternal perceived stress scores variables did not statistically significantly predict child externalizing scores,  $F(3, 28) = .459, p = .713, \text{Adjusted } R^2 = -.055$ . Child sex, age and maternal perceived stress did not predict child peer aggression. In Model 2 provider event load stress scores were added to see if they contributed to peer aggression beyond that of mother's perceived stress scale score. It was also found that provider event load stress did not predict child peer aggression,  $F(4, 27) = .970, p = .440, \text{Adjusted } R^2 = -.004$ .

**Table 13***Summary of Hierarchical Linear Regression for Child Peer Aggression*

Variables	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	Beta	<i>B</i>	<i>SE</i>	beta
Child Sex	-.114	.160	-.139	-.172	.160	-.208
Child Age	.012	.011	.208	.009	.011	.157
Maternal Stress Scale Sum	.002	.011	.033	.001	.011	.017
Provider SOS: Event Load				.011	.007	.298
$R^2$	.047			.126		
Adjusted $R^2$	.126			-.004		
$F$ Change	.459			.970		

*Note.*  $N = 31$ 

### Summary

There were a number of children who were rated in an area of concern for the aggression defiance, peer aggression, depression withdrawal, and negative emotionality subscales. There was a greater percentage of mothers who scored in the clinical range for stress than for depression. More than 45% of child care providers scored in the clinical range for stress, and the same was true for child care providers who had clinical levels of depression.

Child separation and distress, an internalizing sub-score, was positively associated with family income. It was also shown that child total internalizing scores approached a statistically significant positive relation with child care provider depression. When child internalizing total scores, maternal depression, and child care provider depression were added to the multiple regression model while controlling for age and sex, maternal

depression did not predict child internalizing total scores, and providers depression did not predict internalizing scores beyond that of maternal depression as was hypothesized.

There was an association with children being male and higher scores of activity and impulsivity problem behaviors. Higher family income was associated with higher scores of peer aggression, and approached a significant association with higher levels of aggression/defiance, and total externalizing scores. Another correlation that approached statistical significance was maternal event load stress and child Activity/Impulsivity scores. Child care provider event stress was statistically significantly related to peer aggression. However, it is clear from the regression model that in our sample, maternal perceived stress did not predict child externalizing total scores when controlling for child age and sex. Provider event load stress also did not contribute to child externalizing total scores above and beyond that of maternal perceived stress.

## CHAPTER V DISCUSSION

Given the negative outcomes related to early problem behaviors, this research sought to further understand the possible antecedents involved in the development of these behaviors. Urie Bronfenbrenner's Ecological Model of development explains that an individual is influenced by their unique make-up including genes, temperament, and sex. The model then recognizes that a great deal of influence in one's development comes from the direct interactions one has with others, particularly those within an individual's microsystem (Rose & Tudge, 2013). This provides a lens in understanding the strong influence the family plays in development.

Children who spend a great deal of time in child care every week can also be largely impacted by their child care provider with whom they directly interact within that setting. This research recognizes the importance of child care settings in relation to supporting, or in some cases negatively influencing development. Specifically, child care provider stress and depression were examined in association with internalizing and externalizing problem behaviors in children ages 11-35 months.

### **Prevalence of Problem Behaviors**

Internalizing problem behaviors as reported by the 71 child care providers within the current sample, showed that slightly more than a quarter of children were rated as having clinical levels of negative emotionality, and almost 30% showed clinical levels of depression and withdrawal. In comparison to previous research, Mäntymaa et al. (2012), reported 7% of children exhibited internalizing behaviors, and an additional 6% of their

study showed both internalizing and externalizing problem behaviors. Edwards and Hans (2015) found that 9% of their sample demonstrated internalizing behaviors, and another 14% demonstrated both internalizing and externalizing behaviors. The current sample was more in line with the rates of problem behaviors in the Edwards and Hans (2015) study and was significantly higher than problem behaviors reported by Mäntymaa et al. (2012).

One possible explanation for the large percentage of internalizing problem behaviors within this sample, could be due to the difference in using child care provider report of problem behaviors instead of parent report, or both. Both Edwards and Hans (2015) and Mäntymaa et al. (2012), used only mother report of problem behaviors. Other researchers including Arace et al. (2021) used provider or teacher report of problem behaviors. Provider report of problem behaviors was chosen for this research because teacher evaluations of behavior had been found to better predict school success (Berg-Nelson et al., 2014; Jeon et al., 2014; Razza et al., 2010). Kwon et al. (2019) mentioned that children could demonstrate having more problem behaviors in school or child care.

For externalizing problem behaviors teachers rated 16.9% of the current sample of children in an area of concern for aggression defiance and peer aggression. This is slightly more than the 14% of toddlers who showed externalizing behaviors in the research conducted by Mäntymaa et al. (2012). In comparison to research by Edwards and Hans (2015), the current sample had lower levels of externalizing problem behaviors. The current sample fits within the range of previous externalizing behaviors found in child care settings. However, the current sample is very different from the Edwards and

Hans (2015) research as the current sample for this research was primarily white, and most of the parent respondents were enrolled as university students.

### **Maternal and Provider Stress and Depression**

Of the mothers in the current sample, a little less than a quarter of the sample had high levels of stress related to feeling unable to cope with the demands placed on them. The number of mothers who felt an overload of pressures and demands, or overload stress, was slightly more than half of the sample. It is interesting to note that the mothers in this sample had such high rates stress. Most of the mothers were students enrolled in a four-year university program and were considered low-income. Dotterer et al. (2021) discussed the high stress levels of student parents due in part to the multiple stressors that student parents face including lack of time and balancing their school, work, and family responsibilities.

Depression rates in mothers were very low, coming in under 10%. The national average of adults with self-reported depression is 19%, whereas 23% of Utahns reported feeling depressed or having depressive symptoms (Utah Department of Health, 2020). Mothers in this study had lower rates of depression symptoms than the national and state levels. Dotterer et al. (2021) found that resources and support provided to student parents helped them to feel able to continue to keep up with parenting and school demands, and balance school and home roles. Student mothers in the current research were receiving some university resources such as support through the CCAMPIS grant.

Of the child care providers who participated, approximately half of them were rated as having high levels of stress and/or depression. Hamre and Pianta (2004) found

that 9.4% of child care providers were considered depressed at a clinical level. This is also significantly higher than both the national and state rates of self-reported depression (Utah Department of Health, 2020). One possible explanation for the larger number of providers showing high levels of symptoms of depression, is that depression and stress measures were filled out online. Researchers have proposed that contact with child care providers may influence how willing providers are to fully express their stressors and depression rates (Hamre & Pianta, 2004; Kwon et al., 2019).

### **Internalizing Behavior**

Of the demographic variables, the association between family income and levels of toddler separation distress approached statistical significance. Children with higher family incomes seemed to have higher rates of separation distress than children of families with low incomes. If this finding were to be supported at a statistically significant level when repeated in a larger sample, it would contradict previous research regarding low-income families and early childhood behaviors (Edwards & Hans, 2015; Holtz et al., 2015).

One possible explanation is that most mothers who participated were also students who referred to the lack of time and balancing responsibilities as the biggest contributors of their stress. Thus, higher income may suggest they may be working as well going to school. School and work together place high demands on a parent's time, and it could mean spending more time away from their children. Dotterer et al. (2021) reported that student parents often cited that time was the biggest stressor they felt while trying to balance their roles as parents and students. Extended child care would most likely be

needed for their children, and most local programs do not offer extended hours that would be able to accommodate such a schedule. This could mean a great deal of time spent in the child care setting, as well as other non-parental care. Highly sensitive infants and toddlers who were in non-parental child care settings for more than 30 hours per week showed higher levels of internalizing behaviors (Crockenberg, & Leerkes, 2005). Morrisey (2009), explained that multiple care settings could contribute to higher rates of problem behaviors.

Maternal stress and depression were hypothesized to be correlated with toddler internalizing problem behaviors. However, the data and analysis showed that this hypothesis was not supported in the current study. Given that past research has consistently documented the influence of parental depression on internalizing behaviors including anxiety and depression, this finding was very surprising (Cole et al., 2008; Edwards & Hans, 2015; Mäntymaa et al., 2012). One possible explanation is that child care providers did not accurately evaluate child problem behaviors. Rusby et al. (2013) discussed that child care providers with high levels of depressive symptoms could be more likely to view behaviors negatively. Mothers in this research had low levels of depression which could help explain the finding that these variables were not associated. Maternal depression levels and related to reports of increased child problem behaviors (Rusby et al., 2013). Another possible explanation is that despite the difficulty student parents face such as those in this sample, such as subsidies to offset the cost of child care, directed at assisting this unique group of students are effective (Dotterer et al., 2021).

It was hypothesized that provider stress and depression would be correlated with toddler internalizing problem behaviors. There was not a statistically significant between

these variables. However, the association between child care provider depression and child total internalizing behaviors approached a statistically significant relation and should be researched further. If supported it may be the case that, adults who have higher levels of stress and depression, may not provide positive examples and supports that help young children to explore and learn in social situations and handle disappointment. This is supported by Kwon et al. (2019), who discusses that child care providers with high levels of depression may be more negative in their interactions with children, cope poorly with difficult situations, and provide less positive support to the young children in their program.

Further, it was hypothesized that child care provider depression would contribute to the development of internalizing problem behaviors above and beyond that of maternal depression. However, the regression models in Table 9 were clear that parent and provider depression did not contribute to the internalizing behaviors in this sample. There are several possible explanations mentioned previously that could have impacted the findings including: limited report of child behaviors and the uniqueness of the student parent population. The small sample size may have made it difficult to determine the extent to which mothers and providers influence the development of internalizing behaviors.

### **Externalizing Behaviors**

Externalizing problem behaviors can be extremely difficult for caregivers to handle, as these behaviors are directed towards others or objects. Early behaviors can continue to be stable for these young children and can contribute to negative outcomes

such as juvenile delinquency, difficulty making and keeping friends, psychopathology, and so on (Mäntymaa et al., 2012).

This study found that child sex was related to activity and impulsivity problem behaviors, at a statistically significant level. Specifically, males had higher rates of activity and impulsivity. This finding is consistent with current research that shows that males have higher rates of impulsivity and struggle to attend to tasks (Arace et al., 2021). According to bioecological theory, individual traits are central to the developing child, but they can influence how other systems interact and influence development. In this sense bioecological theory supports the idea that a child's sex can directly be responsible for the behaviors we see, or their sex can influence the interactions they may have within their microsystems, mesosystem, and the macrosystem. Within the macrosystem, there is also the expectation that boys are and should be more active.

Family income was related to externalizing problem behaviors in the current sample. Specifically, increased family income was statistically significantly associated with higher levels of peer aggression, and total externalizing problem behaviors. This was in contradiction with several research studies that found that more problem behaviors were reported for children in families with lower incomes than those with higher incomes (Edwards & Hans, 2015; Holtz et al., 2015; Morrissey, 2009). As mentioned previously, the unique set of mothers in this research who are attending school, could be spending more time away from their children than the parents in other samples. Perhaps they may be less involved with their children, even when they are home with their children, as they may be attending to homework. Dotterer et al. (2021) found that student parents often mentioned that balancing time between their different roles was difficult. Another

possible explanation could be that long hours, over 30 hours, in child care centers was connected to higher levels of externalizing problem behaviors in children with sensitive temperaments even when controlling for reported quality of care (Crockenberg & Leerkes, 2005).

The correlation between maternal mental health and child externalizing problem behaviors was not statistically significant as was hypothesized. One possible explanation as mentioned earlier was that problem behaviors were assessed by the child care provider in this study. Problem behaviors including externalizing behavior can be different at home in comparison to other settings such as the child care program (Arace et al., 2021; Kwon et al., 2019).

High rates of parental stress overload seemed to be associated with higher levels of activity and impulsivity, as the relationship approached statistical significance. If this relation is investigated further and found to be statistically significant, it could indicate that mothers who experience an overload of stress may interact with their children differently than if they were not as stressed. Ecological theory postulates that because an individual is impacted by the direct and indirect interactions between the different systems, stress from schooling can influence their development. This is supported by Dotterer et al. (2021) who found that student parents who have high level of stress, report negative impacts on the relationships they have with their children (Dotterer et al., 2021).

When externalizing behaviors were correlated with child caregiver stress and depression a significant relationship was found. Higher stress for child care providers was found to be associated with higher toddler peer aggression at a significant level. This result is consistent with parent research found that maternal stress is associated with

higher level of problem behaviors in children (Mäntymaa et al., 2012). Child care providers experiencing high levels of stress may show lower quality interactions and care (Kryzer et al., 2007; Lemay et al., 2014; Rusby et al., 2013; Vandell et al., 2010; Watamura et al, 2011). For children in family child care settings, this can be particularly important, because family childcare providers who have higher levels of stress showed lower levels of positive interactions (Groeneveld et al., 2012).

When maternal and provider stress overload levels were analyzed in the regression models while controlling for child age and sex, neither variable predicted child peer aggression. This is in contrast to previous research examining both parent mental health, and teacher mental health in preschools (Jeon et al., 2014; Mäntymaa et al., 2012). Possibly there are other confounding or mediating variables at work. Dotterer et al. (2021) reported several student parents mentioning that supports and resources aimed at student parents helped them to feel they could handle the stress that they felt. The same may be true of child care providers, though it was not explored within this research.

### **Limitations**

The largest limitation of this research is the small sample size. This may have contributed to the inability to see patterns and significant relationships among the key variables. Efforts were made to increase the sample size, specifically with local family child care providers as they are an under researched population. The multiple stage recruitment process made recruiting parents difficult. Childcare providers needed to be the ones to contact the parents to get permission for the researcher to contact the parents. Providers seemed to be more receptive to the study because the information was sent out

through the email list of the local resource and referral agency, Care About Child Care. The process of recruiting parents was not as well received. In one case, once parent permission was received the child no longer fit in the age group.

Continued efforts to obtain the number of cases to achieve the power needed included expanding recruitment to include all family child care providers in the state of Utah, and finally local center child care providers were added to the recruitment efforts. At that point research was interrupted and impacted largely due to unforeseen circumstances of the COVID-19 pandemic. The impact of COVID-19 on child care is still being felt in so many ways. Some child care programs closed in order to prevent spreading the illness, or out of fear for caregiver health. Child care programs were encouraged to stay open, but the number of children dropped (Child Care Aware [CCAofA], 2020). Given the confounding variables, the needed cases of both parents and providers were not obtained.

The descriptive and exploratory nature of this research make it impossible to make inferences regarding causal relationships between child care provider stress and depression and child internalizing and externalizing problem behaviors. Directionality of the relations between toddler internalizing problem behaviors and child care provider stress and depression also could not be determined. For example, since child care providers rated child problem behaviors, there is no way to know if behaviors were rated higher because child care providers were experiencing high levels of stress and depression. In opposition, child care providers could experience more stress and depression when children who have high rates of internalizing and externalizing problem behaviors are in their programs. Another limitation presented by using only teacher rated

child behavior, is care that must be taken in interpreting the prevalence of the internalizing and externalizing behaviors.

In addition to a lack of sufficient number of participants, the data is not generalizable. Most of the parent participants were student parents enrolled at a four-year university. Next, parents and child care providers were all female. Fathers were not represented in this research, as only mothers chose to participate. According to Dotterer et al. (2021) mother and father student parents differ in their stress. Male child care providers are also not represented in this research. Though, not as common in the child care field, they do hold positions within the field, and do impact the development of the children they serve. Last, the sample was not diverse in regard to race and ethnicity.

There were several other limitations to this research including the lack of information collected regarding the number of hours and the number of care settings a week that a child participates in. This would have made it possible to control for this variable in the analyses. Additionally, protective factors or resources for child care providers and mothers were not evaluated, which could have provided more context when interpreting the findings.

Another factor that may have limited the number of participants could have been the number of measures and time commitment that was needed in order to participate in this research. Mothers needed to answer demographic questions as well as complete three mental health measures. Child care providers completed all the same measures as the parents, but they also were asked to complete the ITSEA on the child. The ITSEA contains 166 items and is extensive and time consuming. The Brief Infant Toddler Social Emotional Assessment (BITSEA) has been developed as a screening version of the

ITSEA. The BITSEA contains only 43 items versus the 166 items in the ITSEA. This change would exponentially lower the time burden on participants, and it may be possible to have both parent and provider complete the assessment. This would allow the researcher to control for the variability between different responders.

This research sought to obtain a comprehensive view of toddler internalizing and externalizing problem behaviors in relation to child caregiver stress and depression. Given the difficulty of obtaining the needed participants, future research should focus on more intensive recruitment strategies and incentives.

### **Implication for Practice and Future Directions**

This study sought to add to the research base regarding the possible connections between child care provider stress and depression and toddler internalizing and externalizing problem behaviors. As this research was not able to determine the impact of child care provider stress and depression and toddler internalizing and externalizing problem behaviors further research in this area is needed. Specifically, the correlations between some of the variables such as child care provider depression and child internalizing behaviors, and child care provider stress and peer aggression should be explored further with a larger sample. Researchers should also continue to explore possible antecedents and protective factors that could be used to guide interventions for toddler aged children. It is important to support children directly, and through those who interact with them daily.

Child care provider stress and depression was very high compared to past research. This is concerning as it has been found that provider stress and depression can

impact the quality of care of the program or classroom, and preschoolers internalizing and externalizing problem behaviors (Groeneveld et al., 2012; Hamre & Pianta, 2004; Jeon et al., 2014). Practitioners such as resource and referral agencies could use this information to support child care providers' ability to cope with stress, and to provide access to mental health resources. Perhaps a mental health specialist could be available through the resource and referral agencies. Researchers could focus on developing interventions strategies and determine their effectiveness using a pre-post design or using a control group.

Further research should focus on improving recruitment methods to be more clear, concise, and to be relevant to parent and child care provider interests. Future research could benefit from a more hands-on recruitment effort, such as having a member of the research team visit child care programs to meet with parents. If funding was available to pursue this type of recruitment, it could be helpful in more than one way. For example, the research assistant who visited the program could bring along a tablet that would allow parents to complete the research quickly. Providers could also complete their portion using the tablet. The research assistant would need to remind the parents and the providers that the responses will be separated from their personal information as to provide anonymity. Incentives could be given at that time as well, providing that instant recognition for their participation.

No matter the recruitment style, it would be good to reduce the amount of time participants have to spend completing the measures. If participants need to complete the child problem behavior measures, selecting a shorter measure may be less daunting. In addition, future research should focus on one general stress measure for the participants

instead of two different measures. This may help to reduce the burden on participants and make time for other pertinent information. Another way to expand knowledge related to stress and child outcomes, would be choosing a stress measure that is more specific to the participants. For example, child care providers have a lot of responsibilities related to running a classroom or program. Future researchers could include job related stress which could provide a better understanding child care providers stress levels and unique stressors.

A few variables that should be considered in future data collection would be the number of hours that the child in question spends in the caregivers' class or program each week, and a measure of program quality. This is important information that could help in providing a clearer view of the level of impact, if any, child care provider mental health has on the development of toddler problem behaviors. For example, researchers can use this information in the analyses to determine if the amount of time a child spends in care mediates the relationship among child care provider mental health and toddler problem behaviors. Bronfenbrenner's Ecological Model suggests that time plays a role in an individual's development. In this situation it would be the consistency and frequency of the child's interactions with their provider that could possibly provide further understanding. This information could be used along with other data including how many child care providers a child is with during the hours they are in care, how many hours a child care provider works per day, caregiver fatigue throughout the day, and others to inform policies and practices in child care settings.

Children of student parents could be focused on entirely on their own regarding their mental health and the problem behaviors that their children may exhibit. Schooling

is a temporary situation for families so it would be important to view the mental health and problem behaviors longitudinally to determine how stable they remain following the conclusion of the parents' schooling. Information gained in this type of focused research could help to provide resources specific to student parents and their children.

In conclusion, early internalizing, and externalizing problem behaviors can have long lasting negative outcomes for children. It is important to understand what factors may be related to both negative and positive outcomes. Young children spend a great deal of time in child care, making child care providers a vital part of early development including social and emotional development. Child care providers experience stress and depression just as parents do, and sometimes at very high rates. Given the large amount of time they spend with the children in their care, it is important to understand to the extent their mental health impacts the children they care for.

## REFERENCES

- Amirkhan, J. H. (2012). Stress overload: A new approach to the assessment of stress. *American journal of community psychology, 49*(1), 55-71. <https://doi.org/10.1007/s10464-011-9438-x>
- Andreou, E., Alexopoulos, E. C., Lionis, C., Varvogli, L., Gnardellis, C., Chrousos, G. P., & Darviri, C. (2011). Perceived Stress Scale: Reliability and validity study in Greece. *International Journal of Environmental Research and Public Health, 8*(8), 3287–3298. <http://dx.doi.org/10.3390/ijerph8083287>
- Arace, A., Scarzello, D., Zonca, P., & Agostini, P. (2021). Early childhood experiences and individual differences: The role of sex and temperament in social skills and problem behaviours in Italian toddlers. *Early Childhood Development and Care, 191*(6), 977-989. <https://doi.org/10.1080/03004430.2019.1655736>
- Beijers, R., Riksen-Walraven, M., Putnam, S., & Jong, M. D. (2013). Early non-parental care and toddler behaviour problems: Links with temperamental negative affectivity and inhibitory control. *Early Childhood Research Quarterly, 28*(4), 714-722. <http://dx.doi.org/10.1016/j.ecresq.2013.06.002>
- Berg-Nelson, T. S., Solheim, E., Belsky, J., & Wichstrom, L. (2012). Preschoolers' psychosocial problems: In the eyes of the beholder? Adding teacher characteristics as determinants of discrepant parent—teacher reports. *Child Psychiatry, 43*(3), 393-413. <https://doi.org/10.1007/s10578-011-0271-0>
- Briggs-Gowan, M. J., Carter, A. S., Bosson-Heenan, J., Guyer, A. E., & Horwitz, S. W. (2006). Are infant-toddler social-emotional and behavioral problems transient?

*Journal of the American Academy of Child and Adolescent Psychiatry*, 45(7), 849-858. <https://doi.org/10.1097/01.chi.0000220849.48650.59>

Briggs-Gowan, M. J. & Carter, A. S. (2007). Applying the infant-toddler social & emotional assessment (ITSEA) and brief-ITSEA in early intervention. *Infant Mental Health Journal*, 28(6), 564-583. <https://doi.org/10.1002/imhj.20154>

Björgvinsson, T., Kertz, S. J., Bigda-Peyton, J. S., McCoy, K. L., & Aderka, I. M. (2013). Psychometric properties of the CES-D-10 in a psychiatric sample. *Assessment*, 20(4), 429-436. <https://doi.org/10.1177%2F1073191113481998>

Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (EDS.), *International Encyclopedia of Education* (2<sup>nd</sup> ed., Vol. 3, pp. 1643-1647). Oxford, UK: Pergamon Press and Elsevier Science.

Bronfenbrenner, U., & Morris, P. A. (2006). *The bioecological model of human development*. In W. Damon (Series Ed.) & R.M. Lerner (Vol. Ed.), *Handbook of child psychology: Theoretical models human development* (pp. 793-828). New York, NY: Wiley.

Carter, A.S., Briggs-Gowan, M.J., Jones, S.M., & Little, T.D. (2003). The infant-toddler social emotional assessment (ITSEA): Factor structure, reliability, and validity. *Journal of Abnormal Child Psychology*, 31(1), 495-514. <https://doi.org/10.1023/A:1025449031360>

Carter, A.S., & Briggs-Gowan, M.J. (2006). ITSEA infant-toddler social emotional assessment: Examiner's Manuel. San Antonio, TX: Pearson.

- Child Care Aware of America [CCAofA] (2014). Parents and the High Costs of Child Care. Arlington, VA: Child Care Aware of America.  
[https://www.ncsl.org/documents/cyf/2014\\_Parents\\_and\\_the\\_High\\_Cost\\_of\\_Child\\_Care.pdf](https://www.ncsl.org/documents/cyf/2014_Parents_and_the_High_Cost_of_Child_Care.pdf)
- Child Care Aware of America [CCAofA] (2022, April 1). *Types of Child Care*.  
<https://www.childcareaware.org/families/types-child-care/>
- Choe, D. E, Sameroff, A. J., & McDonough, S. C. (2013). Infant functional regulatory problems and sex moderate bidirectional effects between externalizing behavior and maternal depression. *Infant Behavior and Development*, 36(3), 307-318.  
<https://doi.org/10.1016/j.infbeh.2013.02.004>
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 385-396. <https://doi.org/2136404>
- Corr, L., Davis, E., LaMontagne, A. D., Waters, E., & Steele, E. (2014). Childcare providers' mental health: a systematic review of its prevalence, determinants and relationship to care quality. *International Journal of Mental Health Promotion*, 16(4), 231-263. <https://doi.org/10.1080/14623730.2014.931067>
- Cole, P. M., Luby, J., & Sullivan, M. W. (2008). Emotions and the development of childhood depression: Bridging the gap. *Child Development Perspectives*, 2(3), 141-148. <https://doi.org/10.1111/j.1750-8606.2008.00056.x>
- Crockenberg, S. C., & Leerkes, E. M. (2005). Infant temperament moderates associations between child care type and quantity and externalizing and internalizing behaviors at 2 ½ years. *Infant Behavior and Development* 28(1), 20-35.  
<https://doi.org/10.1016/j.infbeh.2004.07.002>

- Cui, J. & Natzke, L. (2021). *Early Childhood Program Participation: 2019*. National Center for Education Statistics, Institute of Education sciences, U.S. Department of Education. <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2020075REV>
- Dotterer, A. M., Juhasz, A. C., Murphy, K. N., & Boyce, L. K. (2021). Stress and family relationships among college student parents: A mixed methods study. *Journal of Social and Personal Relationships*, 38(3), 888-911. <https://doi-org.dist.lib.usu.edu/10.1177/0265407520975198>
- Edwards, R. C., & Hans, S. L. (2015). Infant risk factors associated with internalizing, externalizing, and co-occurring behavior problems in young children. *Developmental Psychology*, 51(4), 489-499. <http://dx.doi.org/10.1037/a0038800>
- Eisenberg, N., Cumberland, A., Spinrad, T. L., Fabes, R. A., Shepard, S. A., Reiser, M., ... Guthrie, I. K. (2001). The relations of regulation and emotionality to children's externalizing and internalizing problem behavior. *Child Development*, 72(4), 1112-1134. <https://doi.org/10.1111/1467-8624.00337>
- Gao, W., Paterson, J., Abbott, M., Carter, S., & Iusitini, L. (2007). Maternal mental health and child behaviour problems at 2 years: Findings from the Pacific Islands Families Study. *Australian and New Zealand Journal of Psychiatry*, 41(11), 885-895. <https://doi.org/10.1080%2F00048670701634929>
- Gerstenblatt, P., Faulkner, M., Lee, A., Doan, L., & Travis, D. (2014). Not babysitting: Work stress and well-being for family child care providers. *Early Childhood Education Journal*, 42(1), 67-75. <https://doi.org/10.1007/s10643-012-0571-4>
- Goelman H., Zdaniuk, B., Boyce, W.T., Armstrong, J.M., & Essex, M.J. (2014). Maternal mental health, child care quality, and children's behavior. *Journal of*

*Applied Developmental Psychology*, 35(4), 347-356.

<https://doi.org/10.1016/j.appdev.2014.05.003>

Gokiert, R.J., Georgis, R., Tremblay, M., Krishnan, V., Vandenberghe, C., & Lee, C. (2014). Evaluating the adequacy of social-emotional measures in early childhood. *Journal of Psychoeducational Assessment*, 32(5), 441-454.  
<https://doi.org/10.1177/0734282913516718>

Gravener, J. A., Rogosch, F. A., Oshri, A., Narayan, A. J., Cicchetti, D., & Toth, S. L. (2012). The relations among maternal depressive disorder, maternal expressed emotion, and toddler behavior problems and attachment. *Journal of Abnormal Child Psychology*, 40(5), 803-813. <https://doi.org/10.1007/s10802-011-9598-z>

Groeneveld M. G., Vermeer, H. J., Ijzendoorn, M. H., & Linting, M. (2012). Caregivers' cortisol levels and perceived stress in home-based and center-based child care. *Early Childhood Research Quarterly*, 21(1), 166-175.  
<https://doi.org/10.1016/j.ecresq.2011.05.003>

Gunner, M. R., Kryzer, E., Ryzin, M. J. V., & Phillips, D. A. (2010). The rise in cortisol in family day care: Associations with aspects of care quality, child behavior, and child sex. *Child Development*, 81(3), 851-869. <https://doi.org/10.1111/j.1467-8624.2010.01438.x>

Hamre, B. K. & Pianta, R. C. (2004). Self-reported depression in nonfamilial caregivers: Prevalence and associations with caregiver behavior in child-care settings. *Early Childhood Research Quarterly*, 19(1), 297-318.  
<https://doi.org/10.1016/j.ecresq.2004.04.006>

- Henniger, W. R., & Luze, G. (2014). Poverty, caregiver depression and stress as predictors of children's externalizing behaviours in a low-income sample. *Child & Family Social Work, 19*(4), 467-479. <https://doi.org/10.1111/cfs.12046>
- Holtz, C. A., Fox, R. A., & Meurer, J. R. (2015). The incidence of behavior problems in toddlers and preschool children from families living in poverty. *The Journal of Psychology: Interdisciplinary and Applied, 149*(2), 161-174. <https://doi.org/10.1080/00223980.2013.853020>
- Jeon, L., Buettner, C. K., & Snyder, A. R. (2014). Pathways from teacher depression and child-care quality to child behavioral problems. *Journal of Consulting and Clinical Psychology, 82*(2), 225-235. <https://psycnet.apa.org/doi/10.1037/a0035720>
- Kryzer, E. M., Koven, N., Phillips, D. A., Domagall, L. A., & Gunnar, M. R. (2007). Toddlers' and preschoolers' experience in family day care: Age differences and behavioral correlates. *Early Childhood Research Quarterly, 22*(4), 451-466. <https://doi.org/10.1016/j.ecresq.2007.08.004>
- Kwon, K.-A., Jeon, S., Jeon, L., & Castle, S. (2019). The role of teachers' depressive symptoms in classroom quality and child developmental outcomes in Early Head Start programs. *Learning and Individual Differences, 74*(1), 101748. <https://doi.org/10.1016/j.lindif.2019.06.002>
- Lemay, L., Bigras, N., & Bouchard, C. (2014). Relating child care during infancy to externalizing and internalizing behaviors in toddlerhood: How specific features of child care quality matter depending on a child's sex and temperament.

*International Journal of Early Childhood*, 46(2), 143-170.

<https://doi.org/10.1007/s13158-014-0107-8>

Mäntymaa, M., Puura, K., Luoma, I., Salmelin, R. K., & Tamminen T. (2004). Early mother-infant interaction, parental mental health and symptoms of behavioral and emotional problems in toddlers. *Infant Behavior & Development*, 27(2), 134-149. <https://doi.org/10.1016/j.infbeh.2003.09.006>

Mäntymaa, M., Puura, K., Luoma, I., Latva, R., Salmelin, R. K., & Tamminen T. (2012). Predicting internalizing and externalizing problems at five years by child and parental factors in infancy and toddlerhood. *Child Psychiatry & Human Development*, 43(2), 153-170. <https://doi.org/10.1007/s10578-011-0255-0>

Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradović, J., Riley, J. R., ... Tellegen, A. (2005). Developmental cascades: Linking academic achievement and externalizing and internalizing symptoms over 20 years. *Developmental Psychology*, 41(5), 733-746. <https://psycnet.apa.org/doi/10.1037/0012-1649.41.5.733>

McCabe, P. C. & Altamura, M. (2011). Empirically valid strategies to improve social and emotional competence of preschool children. *Psychology in the Schools*, 48(5), 513-540. <https://psycnet.apa.org/doi/10.1037/0012-1649.41.5.733>

Miller, W. C., Anton, H. A., & Townson, A. F. (2008). Measurement properties of the CESD scale among individuals with spinal cord injury. *Spinal cord*, 46(4), 287-292. <https://doi.org/10.1038/sj.sc.3102127>

- Morrissey, T. W. (2009). Multiple child-care arrangements and young children's behavioral outcomes. *Child Development, 80*(1), 59-76.  
<https://doi.org/10.1111/j.1467-8624.2008.01246.x>
- Murray, J., Irving, B., Farrington, D. P., Colman, I., & Bloxsom, C. A.J. (2010). Very early predictors of conduct problems and crime: Results from a national cohort study. *Journal of Child Psychology and Psychiatry, 51*(11), 1198-1207.  
<https://doi.org/10.1111/j.1469-7610.2010.02287.x>
- Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*(3), 385-401.  
<https://doi.org/10.1177%2F014662167700100306>
- Razza, R. A., Martin, A., & Brooks-Gunn, J. (2010). Associations among family environment, sustained attention, and school readiness for low-income children. *Developmental Psychology, 46*(6), 1528-1542.  
<https://psycnet.apa.org/doi/10.1037/a0020389>
- Rose, E. M., & Tudge, J. (2013). Urie Bronfenbrenner's theory of human development: Its evolution from ecology to bioecology. *Journal of Family Theory & Review, 5*(4), 243-258. <https://doi.org/10.1111/jftr.12022>
- Rusby, J. C., Jones, L. B., Crawley, R., & Smolkowski, K. (2013). Associations of caregiver stress with working conditions, caregiving practices, and child behavior in home-based child care. *Early Child Development and Care, 183*(11), 1589-1604. <https://doi-org.dist.lib.usu.edu/10.1080/03004430.2012.742992>

- Utah Department of Health (2020). Complete health indicator report of depression: Adult prevalence. [https://ibis.health.utah.gov/ibisph-view/indicator/complete\\_profile/Dep.html](https://ibis.health.utah.gov/ibisph-view/indicator/complete_profile/Dep.html)
- Valiente, C., Swanson, J., & Eisenberg, N. (2012). Linking students' emotions and academic achievement: When and why emotions matter. *Child Development Perspectives*, 6(2), 129-135. <https://doi.org/10.1111/j.1750-8606.2011.00192.x>
- Vandell, D. L., Belsky, J., Burchinal, M., Steinberg, L., Vandergrift, N., & NICHD Early Childhood Research Network (2010). Do effects of early child care extend to age 15 years? Results from the NICHD study of early child care and youth development. *Child Development*, 81(3), 737-756. <https://doi.org/10.1111/j.1467-8624.2010.01431.x>
- Watanabe, S. E., Phillips, D. A., Morrissey, T. W., McCartney, K., & Bub, K. (2011). Double jeopardy: Poorer social-emotional outcomes for children in the NICHD SECCYD experiencing home and child-care environments that confer risk. *Child Development*, 82(1), 48-65. <https://doi.org/10.1111/j.1467-8624.2010.01540.x>