UNDERSTANDING THE RELATION BETWEEN EARLY HEAD START TEACHERS' EDUCATION AND PSYCHOLOGICAL WELL-BEING AND THEIR PERCEIVED PARENT-TEACHER RELATIONSHIP QUALITY

By

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A DISSERTATION

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

Human Development and Family Studies-Doctor of Philosophy

ABSTRACT

This study aimed to explore the influence of Early Head Start teachers' educational experiences and psychological well-being on their perceptions of parent-teacher relationship qualities. Through the use of an exploratory analytical approach, this study examined the impact of 134 Early Head Start teachers' educational and professional development experience, as well as that of their psychological well-being (i.e., depressive symptoms, work-related stress, wellbeing), on their perceptions of the quality of their relationship with parents as a general group and with a specific parent of a child in their classroom. Standard regression analyses were conducted. Results suggest that teachers' educational and professional development experiences were not associated with their relationship quality with parents; however, their psychological well-being was. Specifically, results suggest that teachers' depressive symptoms may have a moderating effect on the association between their work-related well-being and particular measures of parent-teacher relationship quality. These findings encourage the examination of how pre- and in-service education and professional development experiences are taught and assessed, as well as the further exploration of the influence of teachers' psychological well-being on their role in developing high-quality parent-teacher relationships. Limitations of this study are also discussed.

ACKNOWLEDGMENTS

First, I would like to acknowledge those who supported and funded this work. This work was supported and funded by the Office of Planning Research and Evaluation (OPRE), Administration for Children and Families, U.S. Department of Health and Human Services [grant number 90YR0092]. I would also like to acknowledge our Early Head Start Partners from Capital Area Community Services, Development Centers Inc., Macomb Community Action, Matrix Human Services, Oakland Livingston Human Services Agency, The Guidance Center, and Wayne Metropolitan Community Action Agency.

Second, I would like to acknowledge and thank the many people who helped and supported me throughout this journey. To my dissertation committee, Drs. Claire Vallotton, Holly Brophy-Herb, Ann Stacks, Hope Gerde, and Hiram Fitzgerald, your knowledge, expertise, and patience have been invaluable throughout this process and have encouraged me to approach my work with an open and inquiring mind.

To my husband, Mike, we met during my first semester of this program, and we are now married! Thank you for being my constant support. You provided me with the tough love I needed at just the right times, yet reminded me to take time for myself and enjoy the journey.

To my parents, Bill and Kim, thank you for your unconditional love and support. You have been my biggest fans since day one and I would not be the woman I am today without you. You taught me the importance of hard work and dedication and remind me that I can accomplish anything that I put my mind to.

To Lindsey, Paul, Oliver, Marjorie, Stacy, and Matt, thank you for always being a bright light in my life. Regardless of how stressful life got, you always brought laughter and joy!

iii

To Kate, Stefanie, Sarah, and Jess, thank you for your constant encouragement! I could not be more thankful to have such strong and supportive women in my corner.

TABLE OF CONTENTS

CHAPTER ONE: LITERATURE REVIEW	. 1
CHAPTER TWO: METHODOLOGY AND PRELIMINARY ANALYSES	27
CHAPTER THREE: RESULTS	48
CHAPTER FOUR: DISCUSSION, LIMITATIONS, AND IMPLICATIONS	59
REFERENCES	68
APPENDIX A: TABLES	75
APPENDIX B: FIGURES	96

CHAPTER ONE: LITERATURE REVIEW

High-Quality Parent-Teacher Relationships in Early Childhood Education

The parent-teacher relationship is an important predictor of a young child's well-being and development (Chung et al., 2005; Elicker et al., 2013; Iruka et al., 2011). For a very young child (i.e., birth to three) who attends childcare, the relationship between their parent and their teacher is the intersection of the child's home environment and childcare center. It is through the interactions of and engagement with this relationship that parents can express their beliefs and values related to childrearing to their child's teacher. The teacher is then able to incorporate this information into their daily interactions with the child to support the child in a manner that aligns with the parent's beliefs and values, while also using their professional expertise and knowledge of child development. Therefore, the teacher inherits the unique and complicated challenge of simultaneously supporting the parent and their beliefs while upholding the standards of their profession. As a result, teachers are essential to the development of high-quality relationships between themselves and parents. In fact, research has shown that through high-quality parentteacher relationships—and more specifically through the teacher's role in facilitating such relationships—parents increase their engagement with their child's school and education (Herman & Reinke, 2017). The heightened parent engagement can lead to improved social and emotional development, as well as stronger academic outcomes for the child (Herman & Reinke, 2017).

High-quality parent-teacher interactions are also particularly important for parents and children who are impacted by societal and financial inequities (Iruka et al., 2011). These families typically engage less with their child's childcare center, making any factor that can adjust this dynamic particularly important (Arnold et al., 2008; Nzinga-Johnson et al., 2009). For instance,

in a study of parents and teachers of kindergarteners, <u>Nzinga-Johnson et al. (2009)</u> found that African American and Latino parents, as well as less-educated parents, were not as involved in their child's childcare center as White parents and more educated parents. Importantly, this study also found that teacher-reported parent-teacher relationship quality was the most significant predictor of parental engagement (Nzinga-Johnson et al., 2009). This suggests that although parents' race, ethnicity, and socioeconomic status may be associated with their level of engagement in their child's education, the parent's relationship quality with their child's teacher, as reported by the teacher, may be an even greater influence on their engagement. This finding further supports the importance of the teacher's role in facilitating high-quality parent-teacher relationships; it suggests that how a teacher perceives their relationship quality with parents strongly influences aspects of the parent-teacher relationship, in turn potentially leading to more parental engagement with the child's school.

Interestingly, given their influence on parent-teacher relationships, it is notable that teachers are often unaware of their role in developing and supporting these relationships (Lareau & McNamara Horvat, 1999; McGrath, 2007). Often, parents and teachers experience power imbalances that affect their relationship quality (McGrath, 2007; Vincent, 2013). This is especially true for parents affected by societal and financial inequities, who may be viewed negatively by teachers due to stereotypes or cultural differences (Epstein & Dauber, 1991; Lareau & McNamara Horvat, 1999; Vincent, 2013). In a qualitative study of a diverse sample of mothers and teachers of two-year old children, <u>McGrath (2007)</u> found that within the classroom, teachers had more authority due to their knowledge and understanding of the child and their experiences with the child throughout the day. Such power imbalances and/or cultural

differences often leave parents feeling unheard (Bernhard et al., 1998). To help amend these differences, the teacher has a responsibility to adhere to professional standards (National Association for & the Education of Young Children, 2020) and understand how to work with and engage all families in a manner that respects and reinforces the family's values, regardless of the family's race, ethnicity, or socioeconomic status. This may lead to complex interactions and relationships between the parent and teacher, but they are necessary for the well-being and development of the children in their care.

As a result of the above and to better address the needs of these families, the United States federal program, Early Head Start, was established in 1995. Early Head Start is a multigenerational program that works with parents of young children in supporting their child's growth and well-being across developmental domains through safe and responsive caregiving (Early Childhood Learning & Knowledge Center, 2023a). As part of the program design, Early Head Start places a great emphasis on teachers developing quality relationships with parents, hoping to encourage and support their engagement in their child's care through culturally responsive interactions (Early Childhood Learning & Knowledge Center, 2023b). The organization has even developed a framework—The Head Start Parent, Family, and Community Engagement Framework-to best support teachers and other providers in implementing the Head Start Program Performance Standards specifically related to parent- and family-engagement (U.S. Department of Health and Human Services et al., 2018). This program has produced numerous positive outcomes for both the enrolled children and parents and continues to be an example of an effective family-centered early childhood programming designed to support families impacted by societal and financial inequities (The Office of Head Start, 2021).

The example of Early Head Start can be used to illustrate the importance of developing program standards that guide and direct teachers in their work with parents. Teachers occupy the crucial role of facilitating and supporting high-quality parent-teacher relations. By providing program standards to support them in this endeavor, such as those provided by Early Head Start programs, teachers can receive the education and guidance they need to competently fulfill this role. However, in order for the field of early care and education to adequately support teachers in this important aspect of their position, program leaders and interventionists must fully comprehend how teachers influence and support high-quality parent-teacher relationships. This includes understanding how various personal factors may influence teachers' work and relationships with families.

The current body of literature regarding how teacher factors may influence teachers' abilities to form and maintain effective, high-quality relationships with parents is sparse. As a way to address this gap, and to aid the field of early childhood education in better supporting childhood teachers, this current study aims to explore the impact of teachers' professional (e.g., education, professional development experiences) and personal factors (e.g., psychological wellbeing) on their perceptions of parent-teacher relationship quality.

Domains of High-Quality Parent-Teacher Relationships

To understand how teachers' personal factors contribute to parent-teacher relationships, it is important to first begin with understanding what constitutes high-quality parent-teacher relationships. Given the complexity of the parent-teacher relationship, it is no surprise that highquality relationships are often defined via multiple constructs. For instance, in a report by the Office of Planning, Research and Evaluation (OPRE), <u>Forry and colleagues (2012)</u> conducted an in-depth literature review of the conceptual and empirical literature related to the parent-teacher

relationship. Throughout their report, they applied the knowledge gained from the literature, as well as that derived from Head Start and Early Head Start performance standards and experts in the field, to develop a "conceptual model centered around elements of effective provider facilitation of family-provider relationships in early care and education settings" (Forry et al., 2012, p. 21). As a result, the overarching ideas that directed the development of their conceptual model related to the qualities of the parent-teacher relationship that teachers or providers can support and develop through their work with parents. More specifically, Forry et al., (2012) proposed that constructs such as teachers' attitudes towards parents, knowledge about families, and use of family-centered practices were essential mechanisms through which teachers are able to support high-quality relationships with parents. These three domains will each be discussed in more detail below.

Additionally, it should be noted that <u>Forry et al., (2012</u>) proposed several environmental factors that may influence parent-teacher relationship quality. These factors relate to the "tone, physical environment, organizational climate, and program-level resources/supports for providers and families" (<u>Forry et al., 2012, p. 27</u>). Although these factors can be influenced by the teacher and may even be addressed through teachers' use of family-centered practices, they can also be largely impacted by the program policies and the actions of program administrators. Environmental factors fall outside of the scope of this study; however, they should be acknowledged as part of the larger system parents and teachers interact within and thus may influence parent-teacher relationship quality.

Attitudes Towards Parents

Attitudes towards parents are defined as teachers' "perceptions or beliefs related to interactions with families" (Forry et al., 2012, p. 27). These perceptions are related to a teacher's

respect for and commitment to parents, as well as their openness to adapt classroom plans to the needs of each family (Forry et al., 2012). Notably, in a qualitative study where data were collected from 137 parents or family members of children and 57 education professionals via focus groups and individual interviews, the dispositions of respect, commitment, and equality were identified as three of six important teacher behaviors that support relationships with parents (Blue-Banning et al., 2004). Throughout the study parents provided examples of what these indictors meant to them, while teachers discussed how they develop and support these indicators through their interactions with parents (Blue-Banning et al., 2004).

When considering teachers' attitudes towards parents in general, teachers' and other school staff members' positive attitudes towards parents, especially those related to parents' competence, were associated with positive relationships between themselves and families (Dunst, 2002). On the contrary, negative attitudes (e.g., stereotypes, doubts about parents) held by teachers were viewed by parents as barriers to high-quality parent-teacher relationships (Christenson, 2004) and parental engagement (Swick & Graves, 1993; Swick, 1995). Additionally, teachers who hold negative stereotypical views of parents with lower education or impacted by financial inequities often view parents as less engaged with themselves and/or the school (Epstein & Dauber, 1991).

When examining the constructs of this domain, constructs such as respect, commitment, and openness are very important to the development and support of high-quality parent-teacher relationships. In particular, the construct of respect includes valuing the parent and child, interacting with them in a non-judgmental manner, and being accepting of their differing values and beliefs (Forry et al., 2011). In a qualitative study, conducted with five single Head Start mothers, <u>Bruckman & Blanton (2003</u>) found that mothers who felt respected by their child's

teacher were more likely to engage with the teacher. This same study also highlighted that when parent-teacher relationships contained a level of respect between the two partners, the groundwork for future collaboration was established (Bruckman & Blanton, 2003).

In addition to respect, commitment and openness are two other constructs that help to define teachers' positive attitudes towards parents. Commitment refers to the devotion teachers hold towards supporting parents and children in their classroom (Blue-Banning et al., 2004; Forry et al., 2011). For many parents and teachers, this means that teachers view their title of teacher as "more than just a job" and aim to go beyond what is expected of them to support parents and children (Blue-Banning et al., 2004, p. 175). Teachers can show their commitment through their willingness to be open to the needs of the parents and children, often changing classroom plans and practices to address said needs (Forry et al., 2012).

Overall, teachers' attitudes towards parents can greatly influence the quality of their relationships with parents. If teachers are not respectful of parents' opinions and needs, nor committed to the parents and their children through their willingness to be open, parents are likely to not engage with their child's teachers. Thus, it is vital that researchers begin to understand how teachers view these competencies in relation to their work with parents in order to better support them in this work.

Knowledge About Parents

Knowledge refers to the "information providers have about family systems and ways of interacting with family members as well as specific information about the families they are serving" (Forry et al., 2012, p. 27). This definition describes knowledge as having two main components. First, knowledge refers to teachers' understanding of theoretical information related to family systems as well as how to apply that knowledge to their interactions with parents

(Forry et al., 2012). These topics are often taught during pre-service education (e.g., college degrees) and are applied to the classroom while working with parents and children. Teachers with higher levels of this form of education often report more teaching experience and report using more family-centered practices—a domain of parent-teacher relationship quality discussed below— within their classroom (Torres-Rendón & Zinsser, 2022); however, teachers with a lack of training related to working with families report this deficiency as a barrier to engaging in and developing high-quality relationships with parents (Christenson, 2004).

In order to effectively work with both parents and children, it is important that teachers not only have general knowledge about families, but also learn about each child's family in an individualized way. This is often referred to as family-specific knowledge and includes understanding such aspects as the family's context outside of the childcare center, their culture, abilities, needs, and goals (Forry et al., 2012; Kim et al., 2015). Upon learning such information, teachers are able to integrate it into the classroom to honor each family's culture and context, using it in a way that is complementary to their knowledge of high-quality classroom practices and child development (Forry et al., 2012). For instance, Green and colleagues (2004) found that in a sample of Early Head Start parents, parents who reported that their child's teacher engaged in more culturally responsive practices (i.e., teachers respected the parent's and child's culture/religion, teachers had materials in the classroom that positively reflected their child's culture) were reported by their teacher to be more engaged in program services. Their finding illustrates that through interactions with parents, teachers can gather parent- and child-specific information and use it to inform their classroom practices. The study also suggests that to gather such information, teachers must have a working relationship with parents in order to know specifics about their culture, values, and beliefs. Throughout this process, teachers are further

supporting the development of a high-quality relationship with each parent, leading to other positive outcomes such as increased parent engagement with the program and, ultimately, better support for the child's holistic development.

Overall, the knowledge teachers have about families—both general and specific supports them in developing high-quality parent-teacher relationships. This knowledge is acquired through both formal education and in-service trainings, as well as through their communications and interactions with the individual parents of the children in their care. As a result, teachers can use their knowledge of child development and family systems in early childhood education, tailoring their classroom practices to the specific needs of their parents and children. By providing this level of individual care, parents may feel respected and valued by the teacher, furthering the high-quality relationship between these two caregivers.

Family-Centered Practices

Family-centered practices are how teachers' "attitudes and knowledge are translated into their interactions with parents" (Forry et al., 2012, p. 27). Following from this definition, familycentered practices emerge from the interaction between a teacher's attitudes about parents and their knowledge about families; this can often be seen in their interactions and engagement with parents, along with children in the classroom. For instance, in a study within the Early Head Start home-visiting context, <u>Brookes et al., (2006)</u> found that when home visitors used familycentered practices when working with parents (e.g., listening to parents' personal histories and matching them with a home visitor with a similar history, persistence or commitment to the parent by repeatedly showing up for them), there was an increase in parent engagement, regardless of the external stressors the parents were experiencing. Although this study was conducted within the home-visiting context, the findings highlight the important role that family-

centered practices play in helping Early Head Start staff develop and support high-quality parentteacher relationships. Within the classroom setting, it is reasonable to propose that Early Head Start teachers could also engage in these same practices with the parents to strengthen their working relationships.

Similar to other domains of parent-teacher relationship, family-centered practices are often comprised of several constructs. These include constructs such as teachers' communication and collaboration with parents, as well as their responsiveness to the parent's needs (Forry et al., 2012; Forry et al., 2011). In regard to communication, center-based preschool teachers who participated in the Family-Centered Preschool Model—a program designed to develop teachers' support of families—stated that they had stronger communications with parents after participating in the program, showcasing the program aim of supporting teachers use of familycentered practices (Kaczmarek et al., 2004). This example demonstrates the potential impact of a family-centered training program on teachers' practices as well as the link between familycentered practices and strong communication with parents. Additionally, <u>Blue-Banning et al.</u> (2004) found that both parents and teachers found open and honest communication, when approached tactfully, was an essential indicator of high-quality, collaborative parent-teacher relationships. Teachers discussed the need to actively listen to the parent as well as avoid the use of jargon when providing information to parents (Blue-Banning et al., 2004). These aspects of communication between parents and teachers help to support parent-teacher relationships, ultimately allowing both individuals to openly share information with one another in a responsive and collaborative manner. For teachers, these practices also rely on and incorporate the other competencies of attitudes towards and knowledge about parents.

Other Considerations Regarding Parent-Teacher Relationship Quality

As previously discussed, when considering the parent-teacher relationship domains of attitudes towards parents, knowledge about parents, and family-centered practices, it is important to consider the numerous constructs they contain. For instance, the domain of attitudes consists of constructs such as respect, commitment, and openness. Measures used to assess parent-teacher relationship quality often assess one or more domains of the parent-teacher relationship, as well as their sub-constructs. <u>Ramos and colleagues (2014)</u>, for example, developed the Family and Provider/Teacher Relationship Quality Provider/Teacher Measure Short Form measure to not only assess the three domains of attitudes, knowledge, and practices, but also the constructs that these domains encompass.

Alternatively, other researchers have developed measures of relationship quality for specific parent-teacher relationships. <u>Elicker and colleagues (1997</u>) developed the Parent Caregiver Relationship Scale to assess constructs such as teachers' relationships with a specific parent, including the teacher's confidence in, collaboration with, and caring perceptions of the parent. Although this measure does not map exactly onto the domains of Ramos' (2014) attitudes, knowledge, and practices, the constructs assessed in the Parent Caregiver Relationship Scale do connect with the aforementioned domains. For instance, the constructs of confidence and caring reflect a teacher's attitudes (i.e., their perceptions of and respect for the parent) regarding the parent's knowledge and ability to care for their child. The construct of collaboration reflects a teacher's practices in engaging the parent in a supportive and family-centered approach (this construct is specifically discussed within the Family-Centered Practice section). These two different approaches (i.e., domains versus constructs) to exploring the

perceived quality of the parent-teacher relationship allow researchers the opportunity to examine the complex nature of this relationship, as it consists of numerous distinct, but overlapping ideas.

In addition to this complexity, it is important to consider a teacher's perception of their overall parent-teacher relationship quality with parents in general, as well as their perceptions of their relationship quality with a specific parent. Given that teachers can develop variations in the quality of their relationships with each individual child in their care (Raikes, 1993), it is also likely that they are able to develop variations in the quality of their relationships with parents. In order to assess the potential differences or similarities in the ways that teachers' educational backgrounds and psychological well-being influence the qualities of teachers' general and specific parent-teacher relationships, this study will use the Family and Provider/Teacher Relationship Quality Provider/Teacher Measure Short Form measure and the Parent Caregiver Relationship Scale. The Family and Provider/Teacher Relationship Quality Provider/Teacher Measure Short Form measure is a measure of general relationship quality across the parents of the children a teacher works with (Ramos et al., 2014), while the Parent Caregiver Relationship Scale is a measure of a specific dyad-level relationship quality with one specific parent of a child the teacher works with (Elicker et al., 1997). By examining the effects of teachers' education and psychological well-being on both of these types of parent-teacher relationships, this study will begin to explore how the influence of teacher factors may or may not vary across relationship contexts.

The Co-Caring Framework

In order to better understand the complexity of the parent-teacher relationship, the Co-Caring Framework has been used to frame the interactions between these two caregivers in a similar manner to the study of interactions between two co-parents. Lang and colleagues (2016)

adapted Feinberg's (2003) Co-Parenting Framework to develop a model that reflects the intricate interactions between a parent and teacher of a very young child. Although a parent and teacher may not engage in the multidimensional relationship that co-parents might—a relationship involving the parenting of one or more children, financial obligations, personal and/or romantic relationship, etc. (McHale et al., 2004)—they do engage in a relationship centered around the care of a child within two distinct environments. This parallel between the co-parenting and co-caring relationships led Lang et al. (2016) to adapt two of the four Co-Parenting Framework (Feinberg, 2003) domains to the Co-Caring Framework. These two domains are that of Childrearing Agreement versus Disagreement and Support versus Undermining. The other domains of the Co-Parenting Framework—Division of Labor and Joint Family Management—aim to reflect and discuss the more nuanced aspects of the co-parenting relationship. Due to this, Lang et al. (2016) did not include them in their Co-Caring Framework, and they will thus not be discussed within the scope of this study.

Childrearing Agreement versus Disagreement Domain

The first of the two Co-Caring Framework domains applicable to the parent-teacher relationship is that of Childrearing Agreement versus Disagreement. This domain refers to the degree to which co-caregivers agree or disagree about childrearing practices (Feinberg, 2003; Lang et al., 2016). More specifically, this domain refers to the agreement or disagreement between parents' and teachers' individual beliefs, values, and goals related to a very young child's development and well-being, often specifically within the classroom setting. These beliefs, values, and goals range in topic from potty training and to emotional support and discipline (Lang et al., 2016).

Within the co-parenting literature, <u>Belsky et al. (1995)</u> found that differences in childrearing attitudes were predictive of less supportive or unsupportive co-parenting. This literature also suggests that childrearing disagreement between co-parents can account for the variation in a child's internalizing and externalizing problems, after controlling for income, parents' effective parenting, and parents' marital satisfaction (Chen & Johnston, 2012). These findings are applicable to the parallel co-caring relationship (i.e., parent-teacher relationship) in that they suggest that childrearing disagreement within this relationship may affect the teachers' engagement in family-centered practices—collaboration, communication, and responsiveness and impact the quality of the parent-teacher relationship and child outcomes.

Even more important than the level of childrearing disagreement, however, is the manner in which the parent and teacher navigate their disagreement (Lang et al., 2016). For example, <u>Feinberg (2003)</u> suggests that co-parents who "agree to disagree" when it comes to differences in childrearing beliefs may be better able to maintain high levels of supportive co-parenting through negotiations and compromises. However, when parents and teachers were not able to effectively manage their disagreements, parents became less involved (Bernhard et al., 1998). These findings suggest that although parents and teachers may disagree, teachers who "agree to disagree" are able to still respect the parent's beliefs, showing a commitment to supporting the parent and child despite this disagreement. Such "agreement" reflects the teacher's attitudes towards the parent and may continue to support the parent-teacher relationship. Ineffective management of their disagreement, however, reflects the teacher's negative attitudes about the parent, showing disrespect, a lack of openness, and suggesting a lack of confidence in the parent. Such negative attitudes held by teachers will ultimately undermine high-quality parent-teacher relationships.

Support versus Undermining

The second domain of the Co-Caring Framework applicable to the parent-teacher relationship is that of Support versus Undermining. This domain refers to the level of support and encouragement versus undermining and criticizing that parents and teachers direct toward one another in relation to their care of the child (Lang et al., 2016). For instance, teachers may show their support of the parent by reaffirming the parent's ideas, using information about the parent or child when talking with the parent, or providing them with helpful advice (Lang et al., 2016). Research has shown that when parents do not feel supported by their child's teacher, they tend to share less information with the teacher and become less engaged in the child's education (Lang et al., 2016).

This domain provides a framework for the understanding and application of qualities that define the parent-teacher relationship, particularly those of attitudes towards parents and familycentered practices. In order to support the parent, the teacher must show the parent respect (a foundational positive attitude towards parents) in terms of their understanding and support of the parent's beliefs and values related to childrearing. The two caregivers can then collaborate with one another to support the young child's well-being and development (i.e., family-centered practice). As mentioned by Forry et al. (2011), respect for the parent relates to engaging with them in a non-judgmental manner while accepting their values and beliefs. Although a teacher may not agree with such values, by working with the parent in a non-judgmental manner the teacher is able to support and guide the parent based on their knowledge of child development and that of the parent and family. This in turn allows the teacher and parent to engage in collaborative interactions (Bruckman & Blanton, 2003). The parent-teacher co-caring relationship, presented via the Co-Caring Framework, embodies the domains of a high-quality

parent-teacher relationship, and lays the foundation for understanding how these domains work together to assist a teacher in developing and supporting their relationship.

Influences on Teachers' Perceptions of Parent-Teacher Relationships

Although the parent-teacher relationship is bidirectional, teachers are the party with a professional responsibility to strengthen and maintain a high-quality relationship with parents. Due to the teacher's unique role in facilitating and supporting high-quality parent-teacher relationships, it would be beneficial to understand if and how teachers' professional and personal factors may impact their work with parents (Bronfenbrenner, 1977), especially their attitudes towards parents, knowledge about parents, and use of family-centered practices. By understanding the relationship between teachers' professional and personal factors and their perceptions of their parent-teacher relationships, researchers and childcare programs may then be able to use this information to better support teachers engage in their relationships, while simultaneously supporting the teachers' workforce well-being. More specifically, factors such as teachers' education and professional development experiences (i.e., pre-service education, certifications, in-service trainings) as well as their psychological well-being (i.e., depressive symptoms, work-related stress) may influence their attitudes about and knowledge of parents as well as their use of family-centered practices. Although little research has been conducted on the effects of teachers' education and psychological well-being on their relationships with parents (Forry et al., 2012), research suggests the importance of studying the influence of both factors due to their ultimate influence on parent-teacher relationships (Forry et al., 2012) and child outcomes (Castle et al., 2015; Jeon et al., 2021).

Educational Experiences

Educational experiences provide early childcare teachers with the time and space to

develop their understanding and skills for working with parents of very young children. These experiences most commonly take the form of pre-service education and in-service certifications (e.g., Child Development Associate [CDA] certificate). Additionally, many federally- and statefunded programs, such as Head Start and Early Head Start, require teachers to complete ongoing professional development education to support their work within the classroom. These professional development experiences can range in topics and format. Given this, it is important to understand whether and how these educational experiences (i.e., pre-service education, certifications, professional development experiences) support teachers in developing high-quality parent-teacher relationships.

Pre-Service Education. A teacher's formal education provides them with the knowledge and skills required to work with parents of young children. During their pre-service education, teachers learn about various topics ranging from child development and family theories, to parenting styles, to skill development for working with young children and communicating with families—all of which can support teachers in their work with both children and parents (Forry et al., 2012). Research has found that teachers' higher education, specifically coursework in child development or early childhood education, is positively correlated with parent-teacher relationship quality (Chung et al., 2005). Another study found that when looking at the relation between the quality of the parent-teacher relationship and positive parenting, stronger associations were seen when teachers had higher levels of formal education and when parents had lower education (<u>Elicker et al., 2013</u>). This study suggests that teachers with higher levels of education may be more prepared to work with parents of young children, and that parents with lower levels of education may be most likely to benefit from teachers' knowledge.

In addition to the parent-teacher relationship, teachers' pre-service education, which is most often measured via teachers' level of education, has been associated with teachers' use of family-centered practices (Torres-Rendón & Zinsser, 2022) and the quality of the care they provide to children (Harding Weaver, 2002). In particular, the higher a teacher's level of education, the more likely they were to endorse using more family-centered practices (Torres-Rendón & Zinsser, 2022)—an important domain of parent-teacher relationship quality. Furthermore, when examining the relationship between 65 licensed family childcare providers' education and the quality of their care, Harding Weaver (2002) found that teachers' level of education as well as their amount of college coursework, specifically in early childhood education, were associated with higher quality of care of young children. Although this study examined the relationships between teachers' level of education and their work with young children (rather than with parents), it does suggest parallels to working with parents; higher and more specialized education may be associated with high quality interactions with parents as well as children, and better interactions with children may suggest higher quality interactions with parents. Such education may provide teachers with the knowledge and skills they need to effectively support and work with parents in the area of childrearing, enhancing the parents' engagement with their child. This study will aim to explore this relationship in more detail.

Child Development Associate Certification. In addition to pre-service degrees and coursework, teachers can expand their knowledge and skills related to working with parents of infants and toddlers through numerous certifications that can be completed in service. One such certificate is the Child Development Associate (CDA) certification. This certification is designed to enhance early childcare providers' knowledge and skillset related to work within the field of early childhood education (Council for Professional Recognition, 2021a). Providers complete

120 hours of training, learning about child development across eight CDA subject areas (Council for Professional Recognition, 2021b). Subject areas include topics such as supporting children's social-emotional development as well as physical and cognitive development, managing classrooms and programs, and building relationships with parents (Council for Professional Recognition, 2021b).

Teachers with CDA certification have been found to view their relationships with parents more positively. For instance, in one study researchers found that parent-teacher relationships are viewed as more positive by Early Head Start teachers when teachers had a CDA certification, even more so than if a teachers possessed a four-year college degree (Elicker et al., 2013). This finding suggests that teachers with CDA certifications may have obtained the educational support needed to learn to work with parents harmoniously and effectively, thus supporting highquality parent-teacher relationships.

Additional studies related to CDA certification have shown that teachers with this certification are more likely to provide higher quality care to children. In a study of family childcare center teachers, those who had a CDA certification or higher levels of formal education provided significantly better quality of care to children than those who did not have a CDA certification or those who had lower levels of formal education (Harding Weaver, 2002). Although this study focused on the quality of care the teacher provided to children, these findings may also indicate that the CDA is an effective mechanism to improve teachers' skillsets for their relationship-based work in early care and education.

The aforementioned studies provide preliminary evidence that teachers' work with parents can be supported through their attainment of a CDA certification. This may be due to the specialized training targeted at working with parents of infants and toddlers, which requires

effective communication and collaboration with parents. Such training may support teachers in navigating disagreements in childrearing practices between themselves and parents while simultaneously supporting parents in their care of their child. Further interpretation suggests that teachers' educational backgrounds may influence their relationships with parents, including their attitudes towards and knowledge about parents, and their use of family-centered practices. In order to explore this relationship further, the current study aims to understand how a teacher's education influences their perception of their relationship quality with parents.

Professional Development. Aside from formal education and certifications, ongoing professional development is another method by which early childhood teachers gain knowledge relevant to supporting parent-teacher relationships. In general, professional development within the field of early childhood education is often viewed as pre-service or in-service training that is intended to support the teachers' individual professionalization within the field, improve children's experiences and outcomes, and support the overall childcare center (U.S. Department of Education, Office of Planning, Evaluation and Policy et al., 2010). Teachers within early childcare centers that received federal and/or state funding are often required to complete various professional development experiences in order to further their education and development as a teaching professional.

Currently, the state of the literature related to professional development within early childcare education focuses mainly on how these experiences impact teachers' practices within the classroom (e.g., Campbell & Milbourne, 2005) and/or how this affects children's developmental outcomes in one or more domains (e.g., Conners-Burrow et al., 2017). Few studies have been conducted to assess the potential impacts of professional development experiences on teachers' relationships with parents. In one study that does discuss this topic,

while discussing components of their Family Provider Relationship Quality Conceptual Model, <u>Forry et al. (2012)</u> discussed how professional development experiences may impacts teachers' attitudes towards parents, knowledge about child development, and engagement in responsive teaching practices. In another study, teachers (including Head Start and Early Head Start teachers) who completed the Getting Ready professional development training (itself designed to support early childcare teachers' confidence and skills in working with and supporting parents) stated that the professional development training increased their confidence in working with parents as well as increased the quality of their interaction and communication with parents (Brown et al., 2009). However, additional research needs to be conducted to better understand the relationships between teachers' professional development experiences and how these trainings influence their perceptions of the various domains of the parent-teacher relationship. This study aims to explore this interaction further.

Psychological Well-Being

In addition to teachers' educational and professional development experiences, teachers' psychological well-being may also influence their perceptions of their interpersonal relationships with parents. Teachers' psychological well-being includes factors such as their depressive symptoms and stress. These two aspects of their well-being may influence how they interact with other individuals, including the parents of the children in their classroom, and will be discussed in more detail below.

Depressive Symptoms. In a recent study exploring the physical and mental health of Head Start and Early Head Start teachers (n = 2,122), 23.50% of the sample received a depression diagnosis from a healthcare professional, compared to the 17.60% of a national reference sample (Whitaker et al., 2013). Given this background, depression and depressive

symptoms are likely to be something early childhood teachers must grapple with, a struggle which might compromise their well-being and their relationships.

However, few studies have examined the association between teachers' depressive symptoms and their relationships with parents (Forry et al., 2012). Rather, current research regarding teachers' depressive symptoms often examines the associations between teachers' depressive symptoms and their classroom practices. <u>Harding Weaver (2002)</u> found that teachers provided higher quality care to children when they reported higher psychological well-being. Further, <u>Pianta et al. (2005)</u> found that pre-kindergarten teachers' depressive feelings or symptoms were negatively correlated with their child-centered attitudes, in that the more depressive symptoms teachers endorsed, the less child-centered attitudes they held about childrearing. Teachers with higher depressive symptoms were also rated lower in creating an emotionally supportive classroom (Pianta et al., 2005), similar to findings reported by Jennings (2015). Other studies have also found that teachers' higher depressive symptoms were associated with less sensitive responses and engaged behaviors towards children (Buettner et al., 2016), as well as lower instructional supports for children and less teacher-perceived classroom control (Sandilos et al., 2015).

Findings from the abovementioned studies illustrate the impact of depressive symptoms on early childcare teachers' interactions with young children. As is evident, teachers who report more depressive symptoms engage in less sensitive and responsive care when working with children. This study will investigate whether similar effects are seen in the parent-teacher relationship. For instance, if depressive symptoms are associated with less sensitive responding and engagement with children, it may also be associated with less family-centered communication and collaboration practices, or more negative perceptions of parents. In order to

better understand this potential association, this study aims to explore the effects of teachers' depressive symptoms on their perceived parent-teacher relationship quality—both with parents in general and with a specific parent in mind.

Work-Related Stress. In addition to depressive symptoms, work-related stress is another aspect of teachers' psychological well-being to consider when trying to understand teacher characteristics that may influence their perception of their relationship with parents. Early childcare providers report many different sources of stress within the workplace, including noisy classrooms, lack of sufficient staffing that compromises the work they do, challenging child behaviors, and poor interactions with parents (Baumgartner et al., 2009). Difficulties may also include stressors related to center policies. For example, in a qualitative study, Bromer & Henly (2009) found that center-based teachers serving low-income families felt limited in their ability to support families due to center policies. This challenge adds additional stress to teachers as they feel that they are not able to support parents in a manner that meets the parents' and children's needs. Additionally, factors outside of the classroom may also be a source of stress that teachers bring with them to their work. These stressors may include roles and responsibilities related to one's home life, another job, or attending school (Baumgartner et al., 2009). What is important to note, however, is that these sources of stress are often not singular in nature and frequently overlap with one another (Baumgartner et al., 2009).

Similarly to the work on depressive symptoms, little research has been conducted to assess the impact of teachers' stresses on parent-teacher relationships (Forry et al., 2012). Yet, in recent years, studies have found that teacher stress is related to several adverse classroom and child outcomes. For example, a study from the Netherlands found that stressed preschool teachers, as measured via salivary cortisol levels, were more likely to engage in lower quality

caregiver behaviors, such as having less respect of the child's autonomy, lower supportive presence, and lower emotional support (de Schipper et al., 2009). Stressed Head Start and Early Head Start teachers are also more likely to report higher levels of conflict with children (Whitaker et al., 2015). These studies propose that teachers' stresses are likely to reduce the quality of teacher-child interactions across several different aspects of the relationship. Although these findings are, again, within the context of the teacher-child relationship, they suggest these associations may be applicable to other interactions and relationships relevant to teachers' work, such as those with parents. For instance, teachers experiencing high levels of work-related stress may report more conflict or disagreement within their parent-teacher relationships. This may lead to childrearing disagreements, and inabilities to compromise around such disagreements once they arise. This may affect the teachers' attitudes toward families and use of familycentered practices, ultimately reducing the quality of their relationships.

The Present Study

The parent-teacher relationship is an influential relationship that can impact parents' engagement with their childcare center (Herman & Reinke, 2017) and is predictive of child outcomes (Elicker et al., 2013). Given that teachers' have a professional obligation to establish and maintain positive and effective relationships with parents and have a great deal of influence on the quality of these relationships, it is important to gain a better understanding of how teachers perceive this relationship as well as if and how their professional (e.g., education professional development experiences) and personal factors (e.g., depression, work-related stresses) may influence these perceptions.

Currently, scant research literature is available to describe how teachers' professional and personal factors influence their perceptions of their relationship quality with parents (Forry et al.,

2012). Among studies that focus on factors within teachers that influence relationship quality, the relationship of interest is typically the teacher-child relationship (e.g., <u>Castle et al., 2015</u>) or on the influence of these factors on parents' perceptions of the quality of their relationships with teachers (e.g., Torres-Rendón & Zinsser, 2022). Other studies have focused on the parent-teacher relationship itself, for example, seeking to understand the similarities and differences in how parents and teachers perceive it (e.g., Lovitz, 2023), or how parent-teacher relationships are associated with outcomes for children (e.g., Lang et al., 2020). While the existing body of research describes the dimensions of and validates the importance of the parent-teacher relationship, there is a dearth of research examining the teacher factors that affect the quality of these important relationships. This current study contributes to the existing literature by exploring how teachers' professional and personal factors impact how teachers view their relationships with parents, both in general as well as within a specific parent-teacher dyad. Given teachers' roles in developing and maintaining such a central relationship in the early childcare context, it is important that researchers first understand how teachers influence these relationships in order to then learn how they can support teachers in developing and maintaining high-quality parent-teacher relationships.

This study investigates the relationship between teachers' educational and professional development experiences as well as their well-being (i.e., depressive symptoms, work-related stress) and their perceptions of both general and specific parent-teacher relationship quality. Data for this study were drawn from the Hearts and Minds on Babies Study (Stacks et al., 2023). This larger study investigated the outcomes of an attachment-based intervention intended to support the development of Early Head Start parents' and teachers' reflective functioning and responsiveness toward children (Stacks et al., 2023). Due to the sparse literature examining the

influence of teachers' educational and personal factors on their perceptions of parent-teacher relationships, especially within the field of early childhood education, and the richness of the data available from the Hearts and Minds on Babies Study (Stacks et al., 2023), this study takes an exploratory approach to understanding these relationships. Aims for this study are to,

- Determine whether, and, if so, how, Early Head Start teachers' education and professional development experiences relate to their perception of general and specific parent-teacher relationship quality.
- Determine whether, and, if so, how, Early Head Start teachers' psychological well-being relate to their perception of general and specific parent-teacher relationship quality.

CHAPTER TWO: METHODOLOGY AND PRELIMINARY ANALYSES

Data for this study were collected as part of a larger study designed to test the effects of a psychoeducational intervention called Hearts & Minds on Babies. This intervention is a 12-week attachment-based intervention aimed to increase Early Head Start teachers' reflective functioning on their relationships with children and their parents; there was a companion parent intervention addressing the same content (Stacks et al., 2023). During this 12-week intervention, teachers met to learn how to observe and understand how very young children reflect their internal states (e.g., needs, desires, emotions, thoughts) through their expressive external behaviors. They also learned about how their own experiences (e.g., childhood, past trauma, current living situation) may impact their current views and interactions with children. Participants were taught important self-care skills to aid in stress reduction and increased mindfulness practice, which also aimed to support their reflective functioning.

Participants

Participants were 134 Early Head Start teachers from a Midwestern state participating in the Hearts & Minds on Babies study. At the start of the study, participants were a mean age of 35.97 years (SD = 11.55, range: 18-66) and mostly female (n = 128, 97.90%). Most participants were Black or African American (n = 67; 51.10%), followed by White (n = 65; 49.60%), American Indian or Alaskan Native (n = 8; 6.10%), Other (n = 2; 1.5%), and Native Hawaiian or Other Pacific Islander (n = 1; 0.80%). Only one participant (0.80%) preferred not to endorse a race. The majority of participants (n = 122, 93.80%) endorsed being of non-Hispanic ethnicity. Most participants received a bachelor's degree (n = 57; 43.50%), with the remaining receiving an associate degree (n = 35; 26.70%), attending some college (but no degree; n = 22; 16.80%), receiving a graduate or professional degree (n = 10; 7.60%), or receiving a high school degree (n = 6; 4.60%) or a GED or high school equivalency (n = 1; 0.80%). Zero participants (0.00%) endorsed receiving less than a high school degree or GED. Participant demographic data is presented in Table 1.

Data Collection

Participants completed survey data collection at three timepoints between 2016 and 2019. Time₁ questionnaires were collected prior to the start of the intervention, Time₂ questionnaires were collected immediately after the completion of the intervention, and Time₃ questionnaires were collected three months after the completion of the intervention. The average time between Time₁ and Time₂ data collections was 13.87 weeks (SD = 5.15 weeks), while the average time between Time₂ and Time₃ was 12.18 weeks (SD = 4.23).

Participants completed questionnaires via a link sent to their provided email address. The questionnaires were created, distributed, and collected through an online survey platform, Qualtrics. However, a paper copy of the questionnaire was provided if requested by a participant. Questionnaires consisted of demographic questions (collected only at Time1) followed by a series of measures related to teachers' well-being (i.e., depressive symptoms, work-related stress, adverse childhood experiences), their perceptions of parent-teacher relationship quality, and their reports of a focal child's social-emotional and behavioral outcomes (all collected at Time1, Time2, and Time3). The current study uses data on teachers' demographic characteristics—including teachers' education, certifications, and professional development experiences—collected at Time1, as well as their depressive symptoms, work-related stress, and perceptions of parent-teacher relationship qualities collected at Time2. The specific measures used and resulting variables created are described below.

Education and Professional Development Experience Predictor Variables

Aim one of this study was to determine whether and, if so, how, Early Head Start teachers' education and professional development experiences relate to their perceptions of their general and specific parent-teacher relationship quality. Given that educational experiences, in the form of pre-service education, certifications, and professional development trainings, may provide teachers with the knowledge and skills needed to facilitate high-quality parent-teacher relationships, an essential place to begin understanding this process is via exploring how these experiences may relate to teachers' perceptions of parent-teacher relationships.

Pre-Service Education

Teachers' education level was measured using two items related to pre-service education. Teachers were asked, "What is your highest grade or level of schooling that you have ever completed?" Response options included 1 = 8th grade or less, 2 = 9th - 12th grade, no diploma, 3 = GED or high school equivalency, 4 = high school graduate, 5 = some college but no college degree, 6 = associate degree, 7 = bachelor's degree, and 8 = graduate or professional degree. Teachers were also asked whether they had a degree in early childhood; response options for this question included 0 = no and 1 = yes.

Child Development Associate Certification

Teachers' certifications were measured via the following two questions to which they could indicate *no* (0) or *yes* (1): "Do you have a Child Development Associate (CDA) certificate?" and "Do you have an age-level endorsement for work with infants and toddlers?" Skip logic within the online survey was used for question two (i.e., only participants who answered "yes" to the question were asked if they had an age-level endorsement as an additional credential to their CDA certificate). For analyses, these two questions were combined and

recoded to create a new CDA certification variable, termed Level of CDA Certification. Categories for this new variable were 0 = no CDA certificate, 1 = has a CDA certificate, but does not have an age-level endorsement, and 2 = has a CDA certificate and has an age-level endorsement.

Professional Development Experiences

Teachers in early childhood education, particularly in licensed programs receiving federal or state funding, are typically required to complete ongoing professional education. Ongoing professional education for this study was assessed via the following question, "In the past twelve months, have you attended a training on how to work with families?" Response options included, 0 = no and 1 = yes. If participants answered "yes" to this question, they were then asked, via survey skip logic, a series of three additional questions related to the training they attended. The first of the three questions asked was, "Did the training on how to work with families present information specific to infants and toddlers?" Response options included, 0 = no, the training was focused on children of other ages and 1 = yes, the training included information specific to infants and toddlers. This question was important for this study of Early Head Start teachers as these participants specialized in working with families of infants and toddlers. To allow for a direct comparison between participants who did and did not attend a professional development training on working with families within the last 12 months, these two questions were combined to create a new variable, called Professional Development Experiences. Categories for this newly constructed variable included, 0 = did not attend a training related to working with families in the last 12 months, 1 = did attend a training related to working with families in the last 12 months, but it focused on children of other ages, and 2 = did attend a training related to working with families in the last 12 months and it did include information specific to infants and toddlers.

Next, participants were asked to indicate the type or format of training they attended, selecting only one response option. Response options for this question included, 1 = one-time *workshop/training*, 2 = multi-session training, $3 = online \ course$, and 4 = coaching/mentoring *session*. Lastly, participants were asked, "How helpful was the training on how to work with families in changing your teaching practices?" Responses to this question included, 1 = not *helpful*, 2 = somewhat helpful, and 3 = very helpful.

Psychological Well-Being Predictor Variables

Aim two of the study is to determine whether and, if so, how Early Head Start teachers' psychological well-being is relate to their perceptions of general and specific parent-teacher relationship qualities. Because few studies have examined this particular relationship between teachers' psychological well-being and their relationships with parents, it would be beneficial to explore the association in order to learn how best to support teachers' work with parents.

Depressive Symptoms

The Center for Epidemiological Studies Depression Scale (CES-D; <u>Radloff, 1977</u>) is a self-report measure that was used to assess participants' depressive symptoms. Participants were asked to rate "how often during the past week [they] have felt or behaved" on each of 20 items. Participants rate each item on a scale of 0 = rarely (less than 1 day), 1 = some (1-2 days), 2 = occasionally (3-4 days), or 3 = most of the time (5-7 days). Four items were reverse coded before all response items were summed. Total scores range from 0 to 60, with higher scores indicating the participant's endorsement of more depressive symptoms. Scores of 16 or more suggest clinical levels of depression (Radloff, 1977).

Given that the CES-D was developed nearly 50 years ago, a recent study was conducted by <u>Cosco et al. (2017)</u> to assess the reliability and validity of this measure within a more current
representative sample of middle-age American adults. This study produced a Cronbach's alpha of 0.90 for the overall sample of 1,233 participants and factor loadings were statistically significant, ranging from 0.47 and 0.85 (Cosco et al., 2017). When used within a sample of 1,001 Head Start teachers, the CES-D produced a Cronbach's alpha of 0.91 (Whitaker et al., 2015). For the current study, a Cronbach's alpha of 0.88 was produced.

Work-Related Stress

The Child Care Worker Job Stress Inventory (JSI; Curbow et al., 2000) is an index measure of early childcare workers' work-related stress and well-being. This 55-item self-report index was used in this study to understand the level of work-related stress and well-being participants experienced. Items were associated with one of four JSI subscales—job demands, job-specific demands, job resources, and job control.

The construct of work-related stress is composed of two subscales, job demands and jobspecific demands. These two subscales reflect the more challenging aspects of working within early childhood education. More specifically, the job demands subscale (16 items) asked participants how frequently they experienced a series of scenarios that reflected the everyday demands of teaching in early childcare. Example items include, "parents bring in children who are sick," "I feel like I have to be a parent and a teacher to the children," and "all of the children need attention at the same time." Participants rated each item on a scale from 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = most of the time. The job-specific demands subscale (5 items), however, asked participants about the demands they experienced that were more specific to their work within a childcare center (as opposed to home-based or family daycare centers). These five items were developed via a focus group study conducted by the those who developed the JSI (Curbow et al., 2000). Example items for this subscale included, "I have problems doing my work because of staffing," "I feel that my director is never around when I need help," and "teachers cause extra work for me because they are not doing their job." Participants rated each item on a scale from 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = most of the time.

In its initial development within a sample of 188 early childcare providers, these two subscales presented with the following Cronbach's alphas, job demands = 0.77 and job-specific demands = 0.81. Cronbach's alphas for this study were calculated and assessed using the following criteria— $\alpha < 0.50$ is unacceptable, $0.50 \le \alpha < 0.60$ is poor, $0.60 \le \alpha < 0.70$ is acceptable, $0.70 \le \alpha < 0.90$ is good, and $\alpha \ge 0.90$ is excellent (Kline, 2000). Job demands and job-specific demands produced acceptable to good alphas values of 0.66 and 0.71, respectively.

In addition to measuring the more challenging aspects of working in early childhood education, this index measure of job stress also measured the more encouraging aspects of teacher via the job resources and job control subscales (referred to in this study as measures of work-related well-being). For instance, the job resources subscale (17 items) asked participants to rate items related to the level of gratitude or appreciation they perceived while working. Items within this scale include "I know the children are happy with me," "I have one-on-one time with the children," I feel respected for the work that I do," and "I feel the satisfaction of knowing I am helping parents." As a result of the content of these items (i.e., rewards or benefits of the job), this subscale will be referred to as job rewards from this point forward; this terminology better aligns with the content of these items and the scoop of this study. Participants rated each item on a scale of 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = most of the time. As for the job control subscale (17 items), this subscale assessed the level of control participants perceived while working. Participants were asked how much control they had over aspects of their job, like when daily activities take place, the availability of supplies, the number of children that they

cared for, and the cooperation of parents. Participants rated each item on a scale of 1 = very little, 2 = a little, 3 = some, 4 = much, and 5 = very much. An average of each subscales' response items is calculated for analysis.

When initially developed, the job rewards (i.e., job resources) and job control subscales of the JSI presented with Cronbach's alphas of 0.89 and 0.88, respectively (Curbow et al., 2000). For this sample, these two subscales produced alphas of 0.89 and 0.63, respectively. Using the aforementioned criteria, these values were considered to be good and acceptable reliability.

Parent-Teacher Relationship Quality Outcome Variables

The outcome measures for both aims of this study include two measures for parentteacher relationship quality—the Family and Provider/Teacher Relationship Quality Provider/Teacher Measure Short Form (FPTRQ-SF) and the Parent Caregiver Relationship Scale (PCRS). These two measures both assessed participants' perceived relationship quality with parents, however, they differ in how they did so. While the FPTRQ-SF measured participants' perceived relationship quality with parents in general, the PCRS measured their perceived relationship quality with one specific parent. In addition to this, these two scales assessed different aspects of the parent-teacher relationship. Although both measures are comprised of an overall scale and three subscales, the subscales from each measure do not directly map onto the subscales of the other. More specifically, the FPTRQ-SF assessed participants' attitudes towards and knowledge about parents as well as the family-centered practices they used to develop and support high-quality parent-teacher relationships. Meanwhile, the PCRS assessed participants' confidence in and collaboration with a specific parent as well as their views of said parent as a caring person. Each measure, and its subscales, is discussed below.

General Parent-Teacher Relationship Quality

The Family and Provider/Teacher Relationship Quality Provider/Teacher Measure Short Form (FPTRQ-SF; Ramos et al., 2014) is a self-report questionnaire used to assess participants' perceived generalized relationship quality with all parents of children in their classroom. This measure was specifically designed for teachers working with children from birth to age five (Ramos et al., 2014). Participants answered 23 Likert-type items, used to assess their perception of their overall relationship quality with parents. The 23 items were then used to develop the seven constructs, which in turn were then used to develop the three subscales of the FPTRQ-SF—attitudes towards parents (i.e., attitudes), knowledge about parents (i.e., knowledge), and family-centered practices (i.e., practices). For instance, the attitudes subscale consisted of three constructs: respect (three items), commitment (three items), and openness to change (three items), while the knowledge subscale consisted of only one construct: family-specific knowledge (five items). As for the practices subscale, this subscale consisted of three constructs: communication (three items), collaboration (three items), responsiveness (three items). For the purposes of this study, only the overall FPTRQ-SF (i.e., general parent-teacher relationship score) and the three subscale scores—attitudes, knowledge, practices—were used to evaluate teachers' perceived relationship quality with parents, in general; the individual constructs were only developed to aid in creating the three subscales of attitudes, knowledge, and practices.

When considered more broadly, the attitudes subscale asked participants to indicate how much they agreed or disagreed with various statements regarding their feelings about working with families as well as about working within the field of early childhood education. Items included such examples as, "Sometimes it is hard for me to support the way parents raise their children" and "I teach and care for children because I like being around children." Teachers rate

each item on a scale of 1 = strongly disagree, 2 = disagree, 3 = agree, or 4 = strongly agree. The knowledge subscale measured the proportion of children, parents, or families about which participants knew specific information. For example, teachers were asked "how many children and their families do you know... the parenting styles of children's parents." Teachers rated each item on a scale of 1 = none, 2 = some, 3 = most, or 4 = all. Lastly, the practices subscale assessed participants use of various classroom practices, such as "Since September, how often have you met with or talked to parents about the following regarding their child?" Example items included, "Goals you have for their child" and "How their child is progressing towards parents' goals." Teachers rate each item on a scale of 1 = never, 2 = rarely, 3 = sometimes, or 4 = very often.

Items were averaged to create their respective construct scores; four items were reverse scored so that for all items a higher score indicated more positive relationships qualities. Construct scores were then averaged to create their respective subscale scores. The overall FPTRQ-SF scores was created via averaging the three subscale scores together. Within a sample of Head Start and Early Head Start teachers the FPTRQ-SF subscales presented with the following Cronbach's alphas: attitudes = 0.67, knowledge = 0.84, and practices = 0.75; a Cronbach's alpha was not given for overall parent-teacher relationship quality (Ramos et al., 2014).

Using this study's sample, all measures produced good reliability (Table 2) except the attitudes subscale. This measure presented with a Cronbach's alpha value of 0.59—a reliability value considered to be just below the acceptable range of 0.60 (Kline, 2000). This will be kept in mind when reviewing the results from the preliminary and primary analyses.

Specific Parent-Teacher Relationship Quality

The Parent Caregiver Relationship Scale (PCRS; Elicker et al., 1997) was used to assess participants' perception of three constructs—confidence, collaboration, and caring—that represent aspects of the parent-teacher relationship domains discussed in Chapter One. However, the PCRS differs from the FPTRQ-SF in that it assesses the teacher's perception of these constructs within a specific parent-teacher relationship (Elicker et al., 1997), rather than their perceptions of these constructs with their parent-teacher relationships in general (Ramos et al., 2014). Given that teachers develop different relationships with the children in their classroom (Raikes, 1993), it is also likely that they develop different relationships with the parents of the children in their classroom. For this study, participants were asked to think about their relationship with the parent of a focal child when answering the items of this measure; they were asked to choose a focal child who they found to be the most difficult child currently in their classroom. This focal child was identified for reasons related to the larger intervention study for which these data were originally collected (Stacks et al., 2023).

The PCRS is a self-report measure that consists of 35 Likert-type items used to create a total overall parent-teacher relationship quality score, as well as three subscales that assess teachers' confidence in the parent, collaboration with the parent, and their perception of the parent as caring. All items were scored on a scale of 1 to 5, where 1 = strongly disagree and 5 = strongly agree. The confidence subscale (15 items) asked participants to rate items such as, "I trust that this child's parent will tell me important things," "This parent has knowledge and skills," and "I admire the way this parent works with his/her child." Collaboration items include items such as "We seldom take time to discuss care [reverse coded]," "Communication between us is open," and "I consider this parent a true partner." Caring items include item such as "This

parent genuinely cares for his/her child," "I trust this parent to provide his/her child with good care," and "This parent is a caring person."

In a preliminary study of the PCRS, 125 teachers from both center- and family-based childcare programs were surveyed to assess the measure's reliability; Cronbach's alphas of 0.94, 0.92, 0.90, and 0.84 were estimated for the total, confidence, collaboration, and caring scales, respectively (Elicker et al., 1997). Additionally, when test-retest reliability was assessed (n = 81 teachers) a Time₁:Time₂ correlation of r = 0.71 was estimated for the overall specific parent-teacher relationship scale (Elicker et al., 1997). Subscale Time₁:Time₂ correlations ranged from r = 0.59 to r = 0.78, with a mean of r = 0.69 (Elicker et al., 1997). In the current study, all specific parent-teacher relationship quality subscales produced good to excellent alpha values (Table 2).

Covariates

Because data for this study were collected for a larger intervention study aimed at exploring the effects of a 12-week attachment-based intervention, it was important to control for any intervention effects. Group assignment (i.e., control vs. intervention group) was controlled throughout all primary analyses. Of the 134 participants, 44 (32.80%) were randomly assigned to the control group, while 90 (67.20%) were randomly assigned to the intervention group.

In addition to group assignment, participants' site location (urban vs. suburban) was controlled for in the analyses. Through meetings and informal discussions with center administrators and study participants, differences between study site locations (i.e., urban vs. suburban centers) were observed in terms of management, organization, staff turnover, and other workplace climate factors. These discussions led to the inclusion of this variable as a control variable. Ninety-eight participants (73.10%) were from Early Head Start centers within an urban setting, while 36 (26.90%) were from suburban Early Head Start centers. Preliminary analyses

were conducted with both control variables to identify any potential groups differences (i.e., control versus intervention, urban versus suburban).

Preliminary Analyses

An exploratory analytic approach was taken to describe the relations between participants' educational experiences and psychological well-being and their perceptions of their relationships with parents. This approach was taken given the lack of research on predictors of parent-teacher relationship quality in early child education settings, as well as the richness of the data available via the Hearts and Minds on Babies Study. The current study takes advantage of a great opportunity to explore and learn from the data about an understudied but important topic. Preliminary analyses for this study began with data cleaning and the analysis of descriptive statistics to gain a better understanding of the data. Measures and subscales were also created and assessed for their reliability and validity. Each step of this process, and how they informed this study, are discussed below. All data analyses were conducted using IBM SPSS Statistics (Version 27; IBM Corp., 2021).

Assessing and Understanding Raw Data

After cleaning and exploring the control variables, descriptive analyses were conducted to assess variable frequencies, mean scores, standard deviations, and normality (i.e., skewness, kurtosis) of the predictor and outcome variables. These data are presented in Tables 1 and 2. Histograms and boxplots were also created to assess normality and to assess for the presence of outliers. If data were significantly skewed (i.e., an absolute value of the skewness z-score greater than or equal to 1.96; <u>Field, 2013</u>), and this finding was supported by the visual representation of the data, data were transformed. Outliers were addressed by either a transformation and/or winsorization (i.e., outliers were replaced with the next highest or lowest score from the data that

is not present as an outlier; <u>Field, 2013</u>). Analyses were then run twice using both the original data (with winsorized variables if outliers were present) and the transformed data to assess the effect of the transformations. Analyses produced similar results and thus the original data (with winsorized variables) were used for all primary analyses. Normality statistics are presented in Tables 3 and 4.

In addition to descriptive statistics, a series of crosstabulations were also explored to gain an understanding of the categorical predictor variables. Results are presented in Tables 5-11. When examining the relationship between level of education and a degree in early childhood, most participants have a bachelor's degree and a degree in early childhood (n = 46, 35.10%), closely followed by those with an associate degree and a degree in early childhood (n = 31, 23.70%). Interestingly, the third cell with the most participants were participants with no college degree and no degree in early childhood (n = 25, 19.10%). These participants may be currently attending college and working towards a degree (information gathered via informal interactions with study participants, not gathered via the study questionnaire). Furthermore, most participants did not have a Child Development Associate (CDA) certification (n = 88, 70.40%). Only 21 participants (16.80%) had both a CDA certification and an age-level endorsement, while only 16 (12.80%) had only a CDA certification and no age-level endorsement. Examining this more closely, 43 participants (34.40%) had a bachelor's degree, but not a CDA certification, while 20 participants (16.00%) had an associate degree, but not a CDA certification.

As for professional development experiences, 57 participants (46.70%) did not attend a training related to working with families in the last 12 months. Of those who did attend a training related to working with families, 52 participants (42.60%) attended a training that contained information specific to working with infants and toddlers. Of these 52 participants, 33

participants (63.50%) attended a one-time workshop or training, while 15 participants (28.80%) attended a multi-session, 3 participants (5.80%) an online course, and 1 participant (1.90%) a coaching or mentoring session. Thirty-three participants (63.50% of the 52 participants) found their professional development training to be very helpful in changing their teaching practices, while the remainder (n = 19, 36.50%) found it to be somewhat helpful; no participants indicated that it was not at all helpful. These findings led to the final structure of the variable for professional development experience, discussed in more detail below.

Restructuring Variables

Upon review of the preliminary analyses, some variables needed to be restructured to better support analyses. One such variable was participants' level of education. Few participants endorsed low levels of education; no one had less than a GED or high school equivalent, only one participant had a GED or high school equivalent, and six participants had a high school diploma. Thus, these response categories were collapsed along with the response option of "some college, no college degree." The response options for level of education now included 0 = no college degree, 1 = associate degree, 2 = bachelor's degree, and 3 = graduate or professional degree. The regrouping of this variable allowed for chi-square tests of independence to be conducted to assess the association between variables.

In addition to level of education, new context was given to variable of professional development experiences after reviewing the descriptive statistics. Via the crosstabulations tables, it became apparent that for those participants who attended a professional development training specific to working with families—regardless of child age—the training was generally found to be somewhat or very helpful; only one participant said that their training was not helpful. In addition to this, 52 participants attended a training that was related to working with

families and focused material on infants and toddlers. This means that when examining the response options for this variable, response options 1 and 2 (i.e., 1 = did attend a training related to working with families in the last 12 months, but it focused on children of other ages and 2 = did attend a training related to working with families in the last 12 months and it did include information specific to infants and toddlers) also represented trainings that were viewed as somewhat or very helpful and relevant to working with Early Head Start parents and children.

Understanding Associations Between Related Measures

To further understand the data, it was necessary to explore associations between related measures. This began with the examination of the associations between Time₁ and Time₂ parent-teacher relationship quality outcome variables. Given that it takes time to develop a high-quality interpersonal relationship, such as the parent-teacher relationship, it was hypothesized that there would be an increase in mean scores from Time₁ to Time₂. Repeated measures t-tests were conducted, and full results are presented in Table 12. Tests were assessed for statistical significance at an $\alpha \leq 0.05$ level. Expected change was identified between waves for some outcome variables—overall general parent-teacher relationship quality, knowledge about parents, family-centered practices. Based on these results and given that the current study does not aim to predict change over time, but rather aims to assess the relation between teachers' personal factors and their concurrent perceptions of their parent-teacher relationships, Time₂ measures were used for primary analyses.

In addition to repeated measures t-tests, a series of bivariate Pearson correlations were conducted to assess the associations between related measures at Time₂. This included correlations between work-related stress and well-being measures as well as between all general parent-teacher relationship quality and between all specific parent-teacher relationship quality.

Correlations were evaluated on the following criteria— $0.10 \le r \le 0.29$ is a small correlation, $0.30 \le r \le 0.49$ is medium or moderate correlation, and $0.50 \le r \le 1.00$ is large or high correlation (Cohen, 1988). Results are presented in Table 13. Main findings from these correlations suggest that all work-related stress and well-being measures presented with a small or moderate correlation between each other and in the anticipated directions. Both work-related stress measures (i.e., job demands, job-specific demands) were positively correlated to one another, while both work-related well-being measures (i.e., job rewards, job control) were positively correlated to one another as well. As expected, both work-related stress measures were negatively correlated to both work-related well-being measures. When participants reported higher levels of work-related stress, they also were likely to report lower levels of work-related well-being. As for outcome measures, all general parent-teacher relationship measures were highly and positively correlated with one another, as were all specific parent-teacher relationship quality measures.

Understanding Associations Between Predictor and Outcome Measures

To further understand the data and the relationships between the various variables of this study, and thus clarify the constructs they each measure, a series of preliminary analyses were conducted.

Covariates. Associations were explored between the categorical control variables and ordinal outcome variables using independent samples t-tests. Results from these analyses confirmed the use of group assignment and site location as relevant control variables. A statistically significant association was found between group assignment and job-specific demands, t(98) = -2.70, $p \le 0.01$, Cohen's d = 0.57 and attitudes, t(96) = 3.21, $p \le 0.01$, Cohen's d = 0.68. Participants assigned to the intervention group, via random assignment, (M = 2.74, SD

= 0.79) reported greater perceived job-specific demands than participants assigned to the control group (M = 2.31, SD = 0.67), while those in the control group (M = 3.30, SE = 0.29) reported more positive attitudes towards parents than participants in the intervention group (M = 3.10, SE = 0.29). No statistically significant relationships were found between group assignment and depressive symptoms (t(100) = -0.16, p = 0.87), job demands (t(98) = -1.10, p = 0.27), job rewards (t(98) = -0.90, p = 0.37), job control (t(92) = -1.63, p = 0.11), overall general parent-teacher relationship quality (t(96) = 0.68, p = 0.50), knowledge (t(96) = 0.48, p = 0.63), practice (t(96) = -1.28, p = 0.20), overall specific parent-teacher relation quality (t(96) = 0.42, p = 0.67), confidence (t(96) = 0.50, p = 0.62), collaboration (t(96) = -0.08, p = 0.94), and caring (t(96) = 0.69, p = 0.49).

Site location was significantly related to overall general parent-teacher relationship quality ($t(96) = 2.43, p \le 0.05$) and knowledge ($t(96) = 2.14, p \le 0.05$). Participants at the urban study site (M = 3.14, SE = 0.32) reported higher or more positive overall general parent-teacher relationship quality compared to participants at the suburban study site (M = 2.97, SE = 0.29). Additionally, participants at the urban study site reported knowing more about their parents (M =2.43, SE = 0.66) than participants at the suburban study site (M = 2.10, SE = 0.68). There were no statistically significant relations between site location and depressive symptoms (t(37.15) = -1.71, p = 0.10), job demands (t(98) = 0.87, p = 0.39), job-specific demands (t(98) = 0.81, p =0.42), job rewards (t(98) = 1.74, p = 0.08), job control (t(92) = -1.09, p = 0.28), attitudes (t(96) =1.70, p = 0.09), practice (t(96) = 1.93, p = 0.06), overall specific parent-teacher relationship quality (t(96) = 0.89, p = 0.38), confidence (t(96) = 0.17, p = 0.87), collaboration (t(96) = 1.15, p =0.25), and caring (t(96) = 1.29, p = 0.20).

Predictor Variables. A series of chi-square tests of independence and crosstabulations were conducted to understand the associations between the categorical predictor variables. These variables included level of education, degree in early childhood, level of CDA certification, and professional development experiences. Significance for these tests was assessed at an $\alpha \leq 0.05$ level. Results are presented in Tables 5-11. A statistically significant association was found between level of education and degree in early childhood. This was to be expected as to obtain a degree in early childhood, a higher level of education (i.e., at least an undergraduate education) is needed. In addition to this, level of CDA certification was found to have a statistically significant association with teachers' level of education (Table 6), but not with a degree in early childhood (Table 7) or professional development experiences ($\chi^2(4, n = 121) = 2.48, p = 0.65$). No significant association was found between teachers' professional development experiences and a degree in early childhood, $(\chi^2(2, n = 122) = 2.85, p = 0.24)$. This is not surprising, as the variable of professional development experiences reflects teachers' experience participating in a specific professional development training; having a degree in early childhood did not affect whether teachers attended a professional development opportunity. A chi-square test could not be run to test the association between professional development experiences and level of education due to five cells (41.70%) having an expected count less than five (Pallant, 2016).

Bivariate Pearson correlations were also used to assess correlational associations between continuous variables, specifically depressive symptoms, work-related stress and well-being, and general and specific parent-teacher relationship quality. Pearson correlations were evaluated on the following criteria— $0.10 \le r \le 0.29$ is a small correlation, $0.30 \le r \le 0.49$ is medium, and $0.50 \le r \le 1.00$ is large (Cohen, 1988). Results are presented in Table 13. Findings from these analyses showed that depressive symptoms were positively and significantly associated with work-related stress, while negatively associated with work-related well-being; the direction of their findings were as expected. Additionally, depressive symptoms were negatively and significantly associated with all, but one general parent-teacher relationship quality measure (i.e., family-centered practices) and all specific parent-teacher relationship quality measures. As for work-related stress, these two measures (i.e., job demands, job-specific demands) were negatively associated with all general and specific parent-teacher relationship measures (expect for family-centered practices). Conversely, work-related well-being measures (i.e., job rewards, job control) were all positively associated with all measures of parent-teacher relationship quality. The directions of all these associations were as expected.

Upon review of the Pearson correlations, depressive symptoms were significantly correlated with work-related stress and well-being as well as most measures of general and specific parent-teacher relationship quality (expect for family-centered practices). To follow up on this finding, partial correlations were used to explore the association between the predictor and outcome variables of aim two, while controlling for depressive symptoms (Table 14). This analysis showed that most statistically significant correlations between measures remained. However, the statistically significant correlations between the job rewards measure and the specific parent-teacher relationship quality measures were no longer present. This means that when controlling for depressive symptoms, the job rewards score was significantly associated with all general parent-teacher relationship quality measures, but this association was no longer significantly associated with those of specific parent-teacher relationship quality. This finding suggests that there may be a complex relationship between depressive symptoms, job rewards, and parent-teacher relationships quality. Given this complex set of associations, it was hypothesized that the effect of job rewards on participants' parent-teacher relationship quality is

moderated by participants' depressive symptoms. Furthermore, it was hypothesized that the moderation effect of depressive symptoms will influence the relationship between job rewards and parent-teacher relationship quality differently depending on the type (i.e., general versus specific) of relationship quality. These hypotheses are explored and tested within the primary analyses via standard multiple regression analyses, with the introduction of a depressive symptom x job rewards interaction term to test for moderation.

CHAPTER THREE: RESULTS

Standard multiple regressions were run to assess how teachers' educational experiences and psychological well-being were associated with their perceptions of their general and specific parent-teacher relationship quality. This method of analysis was used to assess the amount of variance in parent-teacher relationship quality that was due to teachers' education and wellbeing. Additionally, a series of regression moderation analyses were conducted to assess the moderation effect of participants' depressive symptoms on the association between their job rewards and perceived parent-teacher relationship quality. More specifically, it was hypothesized that this moderator would affect the relationship between job rewards and general parent-teacher relationship quality differently than that between job rewards and specific parent-teacher relationship quality.

All primary analyses and findings are described below. Because a series of standard multiple regressions were run, a Bonferroni adjustment was used to assess for model significance. This means that instead of the standard level of significance of $\alpha = 0.05$, a significance level of $\alpha = 0.0125$ (i.e., the standard level of significance divided by the number of outcomes tested) was used as a criterion for reporting and discussing results as statically significant. This adjustment helps to prevent a Type I error by keeping the cumulative Type I error across the total outcomes tested less than 0.05 (Field, 2013). All data analyses were conducted using IBM SPSS Statistics (Version 27; IBM Corp., 2021).

Exploring Aims and Testing Hypotheses for Aim One

Aim one was to determine whether and how Early Head Start teachers' education and professional development experiences relate to their perception of general and specific parentteacher relationship quality. To explore this aim, a series of standard multiple linear regressions

were conducted. Control variables (i.e., group assignment, site location) were entered in Step 1, followed by aim one predictor variables (i.e., level of education, degree in early childhood, level of CDA certification, professional development experiences) in Step 2. Results are presented in Tables 15 and 16.

Overall General Parent-Teacher Relationship Quality

Step 1 of the analyses, with control variables only, explained 7.90% of the variance in overall general parent-teacher relationship quality. The total variance explained by the model after the inclusion of level of education, degree in early childhood, level of CDA certification, professional development experiences variables in Step 2, was 11.20%, F(6, 84) = 1.76, p = 0.12. The three educational variables and one professional development variable explained an additional 3.30% of the variance in overall general parent-teacher relationship quality, after controlling for group assignment and site location (from Step 1), R^2 change = 0.03, F change (4, 84) = 0.77, p = 0.55. In the final model, none of the control or predictor variables were significant.

Attitudes Towards Parents

Control variables were entered in Step 1 of this model and explained 13.50% of the variance in participants' attitudes towards parents was explained, while level of education, degree in early childhood, level of CDA certification, professional development experiences were entered in Step 2 and explained 19.30% of the total variance, F(6, 84) = 3.34, $p \le 0.01$. This is statistically significant via use of the Bonferroni adjustment of $\alpha = 0.0125$. The four predictor variables explained an additional 5.80% of the variance in participants' attitudes, after controlling for group assignment and site location, R^2 change = 0.06, F change (4, 84) = 1.50, p

= 0.21. In the final model, only the control variable of group assignment was statistically significant, $\beta = -0.21$, $p \le 0.001$.

Knowledge About Parents

Group assignment and site location were entered in Step 1. They explained 5.00% of the variance in participants' perceived knowledge of parents. Level of education, degree in early childhood, level of CDA certification, and PD training were entered in Step 2. The total variance explained by this model was 7.00%, F(6, 84) = 1.05, p = 0.40. The four predictor variables explained an additional 2.00% of the model variance, after controlling for group assignment and site location, R^2 change = 0.02, F change (4, 84) = 0.45, p = 0.77. In the final model, none of the control variables or predictors were statistically significant.

Family-Centered Practices

As for family-centered practices, Step 1 (group assignment and site location) explained 4.70% of the variance on this outcome variable. The total variance explained by this model, at Step 2 (adding education and professional development variables), was 6.00%, F(6, 84) = 0.89, p = 0.50. The four predictor variables explained an additional 1.30% of the model variance, after controlling for group assignment and site location, R^2 change = 0.01, F change (4, 84) = 0.30, p = 0.88. In the final model, none of the control variables or the predictors were statistically significant.

Overall Specific Parent-Teacher Relationship Quality

Group assignment and site location were entered in Step 1. They explained 1.70% of the variance in overall perceive specific parent-teacher relationship quality. After entering level of education, degree in early childhood, level of CDA certification, and professional development training in Step 2, the total variance explained by the model was 2.90%, F(6, 84) = 0.42, p =

0.87. The four predictors explained an additional 1.20% of the variance in overall specific parent-teacher relationship quality. R^2 change = 0.01, *F* change (4, 84) = 0.25, *p* = 0.91. None of the control or the predictors are statistically significant in the final model.

Confidence in a Parent

Again, group assignment and site location were entered in Step 1, explaining 0.90% of the variance in perceived confidence in a parent. Level of education, degree in early childhood, level of CDA certification, professional development experiences were then entered in Step 2, explaining 1.80% of the variance, F(6, 84) = 0.26, p = 0.95. The four predictors explained an additional 0.90% of the variance in perceived confidence in a parent, R^2 change = 0.01, F change (4, 84) = 0.20, p = 0.94. As for the final model, none of the control or predictor variables were statistically significant.

Collaboration with a Parent

After entering control variables at Step 1, 2.00% of the variance in perceived collaboration was explained. The total variance explained by the overall model, at Step 2, was 4.40%, F(6, 84) = 0.64, p = 0.70. The four predictors explained an additional 2.40% of the variance in perceived collaboration, after controlling for group assignment and site location, R^2 change = 0.02, *F* change (4, 84) = 0.53, p = 0.72. None of the control variables or the predictor variables were statistically significant in the final model.

Parent as a Caring Individual

Lastly, Step 1 accounted for 2.90% of the variance in participants' perceived caring, while Step 2 accounted for 4.10% of the variance, F(6, 84) = 0.60, p = 0.73. The four predictors explained an additional 1.10% of the variance in stress, after controlling for group assignment

and site location, R^2 change = 0.01, F change (4, 84) = 0.25, p = 0.91. In the final model, none of the control or predictor variables were statistically significant.

Exploring Aims and Testing Hypotheses for Aim Two

The second aim of this study was to determine whether and how Early Head Start teachers' psychological well-being (i.e., depressive symptoms, job demands, job-specific demands, job rewards, job control) relate to their perception of general and specific parentteacher relationship qualities. Again, a series of standard multiple regressions were conducted to explore how much variance of parent-teacher relationship quality is explained by the psychological well-being predictor variables as well as the predictor variables' associations with parent-teacher relationship quality. In each set of analyses, control variables (i.e., group assignment, site location) were entered into the model at Step 1, while all aim two predictor variables (i.e., depressive symptoms, job demands, job-specific demands, job rewards, job control) were entered at Step 2.

In addition to these analyses, a series of regression models were used to test whether and how participants' depressive symptoms moderated the association between job rewards and both general and specific parent-teacher relationship qualities. This set of analyses followed on the results of preliminary analyses which revealed differences in the partial correlations between teachers' well-being and their parent-teacher relationships, controlling for depressive symptoms. To conduct this series of analyses, Steps 1 and 2 from the previous standard multiple linear regression were replicated, with the addition of the moderation variable (i.e., the interaction term of depressive symptoms x job rewards) entered in Step 3. Analyses for aim two were conducted using IBM SPSS Statistics (Version 27; <u>IBM Corp., 2021</u>); Results are presented in Tables 17-20.

Overall General Parent-Teacher Relationship Quality

Control variables (site location and group assignment) were entered in Step 1, explaining 7.90% of the variance of perceived general parent-teacher relationship quality. Predictor variables (depressive symptoms, job demands, job-specific demands, job rewards, job control) were entered in Step 2. The total variance explained by this model was 35.50%, F(7, 84) = 6.60, $p \le 0.001$. This is statistically significant using the Bonferroni adjustment. The four predictor variables explained an additional 27.60% of the variance in perceived general parent-teacher relationship quality, after controlling for group assignment and site location, R^2 change = 0.28, F change (5, 84) = 7.18, $p \le 0.001$. In this model, site location ($\beta = -0.15$, $p \le 0.05$), job rewards (β = 0.25, $p \le 0.001$), and job control ($\beta = 0.21, p \le 0.01$) were statistically significant. The interaction term between participants' depressive symptoms and job rewards was then added into the model in Step 3. The total variance explained by this model was 40.10%, F(8, 83) = 6.94, $p \le 10^{-10}$ 0.001. The interaction term explained an additional 4.60% of the variance in participants' overall general parent-teacher relationship quality, R^2 change = 0.05, F change (1, 83) = 6.34, $p \le 0.05$. In this final model, participants' site location ($\beta = -0.16$, $p \le 0.01$), job rewards ($\beta = 0.29$, $p \le 0.01$) 0.001), job control ($\beta = 0.18$, $p \le 0.05$), and moderator ($\beta = -0.01$, $p \le 0.01$) were all statistically significant (Figure 1).

Attitudes Towards Parents

Group assignment and site location were entered in Step 1 and explained 13.50% of the variance of attitudes towards parents. Depressive symptoms, job demands, job-specific demands, job rewards, and job control predictors were entered in Step 2 and explained 35.40%, F(7, 84) = 6.57, $p \le 0.001$; this is statistically significant via the Bonferroni adjustment. The five predictors accounted for an additional 21.90% of variance in attitudes, after controlling for group

assignment and site location, R^2 change = 0.22, *F* change (5, 84) = 5.68, $p \le 0.001$. In this model, group assignment (β = -0.22, $p \le 0.001$), job demands (β = -0.15, $p \le 0.05$), and job rewards (β = 0.19, $p \le 0.001$) were statistically significant. The interaction term was then entered into the model in Step 3. The total variance explained was 36.30%, *F*(8, 83) = 5.92, $p \le 0.001$. The addition of the moderator explained an additional 0.90% of the variance of participants' attitudes, R^2 change = 0.01, *F* change (1, 83) = 1.23, p = 0.27. In this final model, group assignment (β = -0.22, $p \le 0.001$), job demands (β = -0.15, $p \le 0.05$), and job rewards (β = 0.21, $p \le 0.001$) were statistically significant. The interaction item was not statistically significant and thus a non-significant moderation effect was found.

Knowledge About Parents

In Step 1, group assignment and site location explained 5.00% of the variance in perceived knowledge. In Step 2, depressive symptoms, job demands, job-specific demands, job rewards, and job control were entered and explained 19.60% of the total, F(7, 84) = 2.92, $p \le 0.01$. This is statistically significant via the Bonferroni adjustment. The five predictor variables explained an additional 14.60% of the variance in perceived knowledge about parents, after controlling for group assignment and site location, R^2 change = 0.15, F change (5, 84) = 3.05, $p \le 0.05$. In this model, only job rewards ($\beta = 0.33$, $p \le 0.05$) and job control ($\beta = 0.41$, $p \le 0.05$) were statistically significant. At Step 3, the total variance explained by this final model was 28.90%, F(8, 83) = 4.22, $p \le 0.001$. The addition of the interaction term explained an additional 9.30% of the variance of participants' knowledge about parents, R^2 change = 0.09, F change (1, 83) = 10.90, $p \le 0.001$. As for the predictors, site location ($\beta = -0.33$, $p \le 0.05$), job rewards ($\beta = 0.46$, $p \le 0.001$), and the moderator ($\beta = -0.05$, $p \le 0.001$) were statistically significant. Due to

the significance of the interaction term, a statistically significant moderation effect was found (Figure 2).

Family-Centered Practices

The two control variables were entered in Step 1, explaining 4.70% of the variance in perceived family-centered practices. After entering depressive symptoms, job demands, job-specific demands, job rewards, and job control at Step 2, the total variance explained by this model was 25.20%, F(7, 84) = 4.04, $p \le 0.001$, significant using the Bonferroni adjustment. The five well-being variables explained an additional 20.50% of the variance in perceived practice, after controlling for group assignment and site location, R^2 change = 0.21, F change (5, 84) = 4.60, $p \le 0.001$. Only job rewards ($\beta = 0.25$, $p \le 0.01$) and job control ($\beta = 0.23$, $p \le 0.05$) were statistically significant in the final model. The interaction term (depressive symptoms x job rewards) was entered into the model in Step 3 and explained 26.90% of the variance of participants' practice, F(8, 83) = 3.82, $p \le 0.001$. The addition of the interaction term explained an additional 1.70% of the variance of participants' use of family-centered practices, R^2 change = 0.02, F change (1, 83) = 1.95, p = 0.17. Only job rewards ($\beta = 0.28$, $p \le 0.001$) and job control ($\beta = 0.20$, $p \le 0.05$) were statistically significant in the final model. The interaction term was non-significant, suggesting a non-significant moderation effect.

Overall Specific Parent-Teacher Relationship Quality

Control variables were entered in Step 1, explaining 1.70% of the variance of perceived overall specific parent-teacher relationship quality. After entering the five predictor variables into the model in Step 2, the total variance explained by the model was 15.50%, F(7, 84) = 2.20, $p \le 0.05$. This is not statistically significant using the Bonferroni adjustment. Depressive symptoms and work-related stress and well-being explained an additional 13.70% of the variance

in perceived overall specific parent-teacher relationship quality, after controlling for group assignment and site location, R^2 change = 0.14, F change (5, 84) = 2.73, $p \le 0.05$. In this model, only depressive symptoms (β = -0.02, $p \le 0.05$) were statistically significant. Step 3 (depressive symptoms x job rewards) of this model explained 16.50% of the variance in overall specific parent-teacher relationship quality, F(8, 83) = 2.06, $p \le 0.05$. The addition of the interaction term explained an additional 1.10% of the variance in overall specific parent-teacher relationship quality, R^2 change = 0.01, F change (1, 83) = 1.07, p = 0.30. Only depressive symptoms (β = -0.02, $p \le 0.01$) were statistically significant. A significant interaction term was not found for this model.

Confidence in a Parent

Step 1 of this model explained 0.90% of the variance of perceived competence of a parent, while Step 2 explained by the oh model was 15.50%, F(7, 84) = 2.19, $p \le 0.05$. The addition of the five well-being variables into the model explained an additional 14.50% of the variance of perceived competence, after controlling for a group assignment and site location, R^2 change = 0.15, *F* change (5, 84) = 2.89, $p \le 0.05$. In this model, only depressive symptoms ($\beta = -0.02$, $p \le 0.01$) were statistically significant. Step 3 of this model explained 16.40% of the total variance of perceived confidence in a parent, F(8, 83) = 2.04, p = 0.05. The addition of the moderator accounted for an additional 0.90% of the variance of participants' confidence in a parent of a difficult child, R^2 change = 0.01, *F* change (1, 83) = 0.94, p = 0.33. Only depressive symptoms ($\beta = 0.02$, $p \le 0.01$) were statistically significant. A non-significant moderation effect was found for this model.

Collaboration with a Parent

Control variables were entered in Step 1 and explained 2.00% of the variance of

perceived collaboration. After entering the five predictors into the model in Step 2, the total variance explained by the model was 18.60%, F(7, 84) = 2.74, $p \le 0.05$. This is not statistically significant using the Bonferroni adjustment. The addition of the five predictor variables into the model explained an additional 16.60% of the variance in perceived collaboration, after controlling for group assignment and site location, R^2 change = 0.17, F change (5, 84) = 3.43, $p \le 0.01$. Depressive symptoms ($\beta = -0.02$, $p \le 0.05$) were statistically significant in this model. The interaction term was entered into the model in Step 3 and explained 21.80% of the variance in collaboration with a parent of a difficult child, $F(8, 83) = 2.89 \ p \le 0.01$. The addition of the interaction term explained an additional 3.20% of the variance in collaboration, R^2 change = 0.03, F change (1, 83) = 3.37, p = 0.07. Depressive symptoms ($\beta = -0.02, p \le 0.05$). A statistically non-significant interaction term was found, thus a statistically non-significant interaction term was also found.

Parent as a Caring Individual

Control variables were entered in Step 1 of this model, explaining 2.90% of the variance of teachers' perceptions of parents as a caring individual. Predictor variables entered in Step 2 explained 8.60% of the model's total variance, F(7, 84) = 1.12, p = 0.36. The addition of the five well-being variables explained an additional 5.60% of the variance in perceived caring, after controlling for group assignment and site location, R^2 change = 0.06, F change (5, 84) = 1.03, p = 0.41. None of the variables were statistically significant in this model. Finally, Step 3 explained 8.60% of the total variance in caring, F(8, 83) = 0.97, p = 0.46. The addition of the interaction term explained an additional 0.00% of the variance of participants' perception of a parent as caring, R^2 change = 0.00, F change (1, 83) = 0.02, p = 0.90. Again, none of the

variables were statistically significant in this final model and a non-significant moderation effect was found.

CHAPTER FOUR: DISCUSSION, LIMITATIONS, AND IMPLICATIONS

The Co-Caring Framework (Lang et al., 2016) was used as a conceptual guide to exploration of the association between teachers' education and psychological well-being and their perceptions of their relationship quality with parents. More specifically, this study aimed to understand if and how Early Head Start teachers' educational and professional development experiences as well as their psychological well-being were associated with their perceived general and specific parent-teacher relationship qualities. Various standard multiple regressions and regression moderation analyses were conducted. Study results suggest that although teachers' education did not influence their perceptions of their relationship quality with parents, their well-being was significantly associated with said perceptions. Additionally, a moderating effect of depressive symptoms was found on the positive association between teachers' job rewards and overall general parent-teacher relationship quality, but not on the positive association between their job rewards and overall specific parent-teacher relationship quality. While results of this current study are promising, there is still much to learn about the potential influence of teachers' education and psychological well-being on their perceived relationship quality with parents. The findings from this study are a starting point for this work, and researchers are encouraged to begin to ask more nuanced questions in order to learn more about this association.

Teachers' Educational Experiences and Their Perceived Parent-Teacher Relationship Quality

Aim one of this study explored and described the association between Early Head Start teachers' educational experiences (i.e., pre-service education, level of CDA certification, professional development experiences) and their perception of their relationship quality with

parents. Results from the exploratory statistical analyses produced a series of non-significant models, with only one model (attitudes towards parents) suggesting a significant association. It was anticipated that teachers with a higher level of education, a CDA certification, and/or relevant professional development experiences would report higher quality relationships with parents (both in general and with a specific parent). However, such associations were not found within this study's sample, indicating that there may be no substantial relationship between an early childhood teachers' education and training and the quality they perceive in their relationships with families; these finding challenge the current literature. Given that this study used a sufficient sample and a series of validated measures, these findings should be considered and explored further in future work in order to better understand why a relation was not found between teachers' educational factors and their perceived quality of their relationships with parents.

Potential Limitation

This absence of significant associations within this sample may be the consequence of the measures used. Global items of teachers' education—such as level of education, obtainment of a CDA certification, and professional development experiences—may not consider the more nuanced aspects of their education that more precisely describe the knowledge and skills related to working with parents, they gained while earning their degree or certification. For instance, Hallam et al. (2003) found that, in a survey of 123 undergraduate early childhood programs, 75% of programs required pre-service early childhood and special education teachers to participate in a field experience working with families impacted by financial inequities. Hallam et al. (2003) measured knowledge and skill via a survey completed by the programs, in which—from a list of 20 skills important to working with families—programs indicated if and how they taught the skill

in addition to indicating how the skill was evaluated. Although this potentially rich experience was required, many of the programs did not provide the teachers with the full knowledge or skillset needed to properly engage with families. This finding highlights the importance of thoroughly measuring and evaluating the required knowledge and skills (e.g., attitudes towards parents, knowledge about parents, engagement in family-centered practices) needed to work with families. Perhaps by examining large, global proxies of teacher education, researchers are not gaining a complete understanding of pre-service programs and teachers' education. This in turn may impact researchers' ability to assess how education and professional development experiences impact how teachers work with and perceive their relationships with parents.

Recommendation for Further Exploration and Understanding

To comprehensively understand the influence of teachers' education on their perceived relationship quality with parents, pre-service programs and researchers may wish to examine curriculum content and practicum experiences more closely by assessing pre-service teachers' thoughts and reflections about their experiences. For example, in a qualitative study that examined five pre-service teachers (diverse in race/ethnicity, age, and experience) understanding and use of reflective practices, it was found that teachers were able to learn and engage in reflective practices about their incorporation of theory and coursework into their practicum experiences (Pedro, 2005). Teachers credited this ability to reflect allowed them to incorporate their own personal beliefs and values into their teaching practices, bettering their skills (Pedro, 2005). This example demonstrates the potential effectiveness of pre-service programs in supporting their students in developing reflective practices. By encouraging such practices, pre-service programs are supporting pre-service teachers in thinking more critically

about the practical application (i.e., practicum) of the knowledge they are gaining in the classroom, while also incorporating their own personal and professional beliefs into their practice. Asking teachers to report on these reflections would allow programs and researchers to gain more insightful information about the effectiveness of pre-service programs in preparing teachers to work with families by providing them with a more nuanced understanding of how teachers understand and use their knowledge to develop their skills within the classroom.

The intentional use of reflective practices in the work setting could also be a key to supporting teachers' well-being and their ability to form high-quality relationships. The professional development experience of reflective supervision allows current teachers the opportunity to discuss with others the mental and emotional aspects of working with very young children and their parents. In a qualitative study of 97 reflective supervisors within infant mental health organizations and programs, it was found that participants viewed reflective supervision as a process that allowed them to increase their ability to work with children and families (Susman-Stillman et al., 2020). They also discussed this practice as a time for them to build their professional and personal relationships as well as a time to develop a series of capacities and skills (e.g., emotional awareness, empathy, reflective and perspective-taking skills, stress management; Susman-Stillman et al., 2020). From this, it is suggested that reflective practices, such as reflective supervision, within the early childhood workforce is a beneficial practice that can provide and support teachers developing the variety of skills they need to create and support high-quality interpersonal relationships (e.g., parent-teacher relationships), while also supporting their own psychological well-being.

Reflective practices can be taught via both pre-service programs as well as professional development opportunities. It would be beneficial of current programs and researchers to begin

to examine if and how reflective practices are being taught within educational programs as well as how this form of reflective education impacts teachers' attitudes towards parents, knowledge about parents, and engagement in family-centered practices.

Teachers' Psychological Well-Being and Their Perceived Parent-Teacher Relationship Quality

Aim two of this study explored and described the association between Early Head Start teachers' psychological well-being and their perceived relationship quality with parents. Results suggest that aspects of participants' psychological well-being were significantly associated with their concurrent perceptions of their relationship with parents. More specifically, these findings suggest that Early Head Start teachers' psychological well-being may affect how they view their overall general relationship quality, attitudes towards parents, knowledge about parents, and family-centered practices. An association was also found between teachers' depressive symptoms and job rewards and their views of their overall relationship quality with a specific parent, confidence in a specific parent, and collaboration with a specific parent. These overall model findings were as expected and supported by literature (e.g., Harding Weaver, 2002; Whitaker et al., 2015).

More notable findings from this study that expand the current literature are those that suggest that aspects of teachers' psychological well-being influence their overall general and specific parent-teacher relationship qualities differently. This study found a moderating effect of teachers' depressive symptoms on the association between their job rewards and overall general parent-teacher relationship quality, where higher job rewards was more strongly associated to positive overall relationships with parents for teachers with fewer depressive symptoms than for those with more depressive symptoms. However, this moderating effect of depressive symptoms

was not present between teachers' job rewards and their overall specific parent-teacher relationship quality (Figure 3).

One potential explanation for this difference in moderation effect may be due to the fact that these two outcomes assess the parent-teacher relationship within different contexts. One measures the teachers' perceptions of their relationship with all parents in general while the other measures their perceptions of their relationship with a specific parent. To further develop this contextual difference, for the purpose of the larger study (i.e., the Hearts and Minds on Babies study; (Stacks et al., 2023), teachers were asked to think of a focal child for the duration inf the 12-week intervention study. This was a child in their current classroom the teacher found to be most difficult. When asked to report on a specific parent-teacher relationship (i.e., the Parent Caregiver Relationship Scale, Elicker et al., 1997), participants were asked to think of the parent of this child.

The particular request to think about a parent of a child they find to be difficult may impact how teachers view that specific parent-teacher relationship. Given that more challenging child behaviors within the classroom are associated with higher levels of teacher stress (Friedman-Krauss et al., 2014) and that an increase in stress is linked to teachers engaging is less emotionally supportive interactions with children (de Schipper et al., 2009), it would not be surprising if such stress associated with working with a difficult child also negatively affected the teachers' perceptions and interactions with their parent.

On the other hand, asking the participants to think about the parent of a difficult child may elicit within them other less negative connotations that would suggest a more positive parent-teacher relationship. In a study that qualitatively explored the effects of parent-teacher relationships on child expulsion, teachers discussed not expelling a child due to a high-quality

relationship and open communication with their parent (Zulauf-McCurdy & Zinsser, 2022). This study suggests that teachers may engage with parents of a difficult child in a different manner than other parents, perhaps using more open and honest communication with them. It also suggests that perhaps teachers are emotionally invested in these specific parent-teacher relationships due to their need to work with the parent.

Although opposing, these two explanations of the potential effect of the additional prompt added to the measure of specific parent-teacher relationship quality provide context in understanding how the prompt may have added an additional layer of complexity in understanding why a difference was seen in moderation relative to the two overall parent-teacher relationship quality measures. Further research is needed to better understand this difference between how teachers view their general and specific relationships with parents as well as how difficult child behaviors may influence their relationships with parents.

Lastly, in addition to the moderating effect of teachers' depressive symptoms on the association between job rewards and overall general parent-teacher relationships, a moderating effect of depressive symptoms on the association between job rewards and knowledge about parents was found; depressive symptoms were found to interfere with the positive association found between teachers' job rewards and their knowledge about parents. Although little work has been conducted on the influence of teachers' psychological well-being on their knowledge about parents, a study looking at the impacts of teachers' depressive symptoms on their interactions with young children found that depressive symptoms were associated with lower responsive and engaging care (Buettner et al., 2016; Jennings, 2015) as well as fewer conversational turn-taking interactions with children (Sandilos et al., 2015). Given this, it is possible that teachers'

depressive symptoms may also affect their responsiveness and communication parents, making it less likely for teachers to learn about parents and develop collaborative relationships with them.

Study Limitations

Limitations of this study include the use of global measures of teachers' educational experiences (i.e., level of education). As discussed, the use of more nuanced measures to assess how teachers are educated as well as how teachers reflect upon and use this education would be beneficial to this work. Although this study did include more specific measures of education (level of CDA certification, professional development experiences), these measures were still too global and did not assess teachers' training on and use of reflective practices.

In addition to this limitation, this study only examined the parent-teacher relationship from the teachers' perspective. As mentioned, the parent-teacher relationship is a bidirectional relationship (Lang et al., 2020). By only assessing one side of this dyadic relationship, this study did not fully explore it in its totality. An approach to consider for future research would be the examination of both parent and teacher factors that influence their perceptions of their relationship. This approach would also begin to assess the influence of the larger system in which this relationship takes place.

Lastly, this study only used data collected at only one time point to explore the influence of teacher factors on teachers' perceptions of their relationship quality with parents. However, relationships take time to grow and develop. Parents and teachers work together over the course of an academic year, if not longer for those involved in programs that practice classroom looping. To gain a better sense of the parent-teacher relationship, as well as how teacher factors may influence it, it would be beneficial to study the change in this relationship over time.

Summary and Implications for Future Work

This current study and the findings presented are just the beginning of understanding how teachers' education and psychological well-being can influence their relationship quality with parents; this area of study requires more exploration and research to better support teachers. The current study builds upon the scant literature available on this topic by exploring this association within the context of the system in which teachers and parents are currently involved. Although both teachers' education and psychological well-being are factors specific to an individual teacher, the system of which teachers are a part of is well-placed to influence how they understand and use their knowledge and skills to support their psychological well-being. Preservice programs are a great place to begin educating teachers on the skills needed to not only work with and engage parents, but also to educate teachers on how to reflect upon their work with parents, while supporting their own well-being.

Main findings from this study highlight the importance of teachers' psychological wellbeing—particularly their depressive symptoms and sense of job rewards—on their perception of parent-teacher relationship quality. Although much research has been conducted to examine the effect of teacher well-being on other relationships, such as that between the teacher and child, more work is needed to examine the effect of well-being on teachers' relationships with parents and other adult relationships within their workplace. By learning more about the nuances of teachers' psychological well-being, childcare center administrators could learn how to best support their workforce, while researchers and interventionists could learn about points of intervention; both of which will ultimately help teachers fulfill their role of developing highquality parent-teacher relationships and encouraging parents to engage with their child's childcare center, ultimately improving child outcomes.
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APPENDIX A: TABLES

Table 1

Frequencies of Categorical Variables

n 🦩	6
Level of Education	
No college degree 29 22.1	0
Associate degree 35 26.7	0'
Bachelor's degree 57 43.5	50
Graduate or professional degree 10 7.6	50
Degree in Early Childhood	
Yes 90 68.7	0'0
No 41 31.3	0
CDA Certificate and Age-Level Endorsement	
No CDA certification 88 70.4	0
CDA certification, no age-level endorsement 16 12.8	ŝ
CDA certification and age-level endorsement 21 16.8	80
Professional Development (PD) Training Attendance	
Did not attend a PD training 57 46	0
Did attend a PD training focused on other ages 13 107	0 /0
Did attend a PD training, focused on infants and toddlers 52 42 f	50
Type of Training Attended	0
One-time workshop/training 40 614	0
Multi-session 10 202	20
$\begin{array}{c} \text{Online course} \\ \text{Solution} \\ So$.0 /0
Coaching/mentoring session 1 14	0
Helpfulness in Changing Teaching Practices	0
Not helpful 1 1 1 4	0
Somewhat helpful 22 25/	0
Very helpful 11 631	0

Descriptive Statistics of Continuous Variables

	п	М	SD	Min	Max	Skewness	Kurtosis	α
Depressive Symptoms	102	11.75	8.82	0.00	37.00	1.07	0.64	0.88
Work-Related Stress								
Job Demands	100	3.24	0.47	2.20	4.47	0.32	0.19	0.66
Job-Specific Demands	100	2.59	0.78	1.00	4.80	0.29	0.18	0.71
Job Rewards	100	4.23	0.47	3.00	5.00	-0.47	-0.32	0.89
Job Control	94	2.47	0.41	1.71	3.65	0.27	-0.19	0.63
General PTR Quality								
Overall	98	3.10	0.32	2.03	3.83	-0.22	0.20	0.85
Attitudes	98	3.17	0.30	2.56	3.89	0.15	-0.79	0.59
Knowledge	98	2.34	0.68	1.00	3.80	0.42	-0.62	0.85
Practice	98	3.28	0.41	1.56	4.00	-0.98	2.78	0.78
Specific PTR Quality								
Overall	98	3.71	0.58	1.47	4.82	-0.61	1.38	0.95
Confidence	98	3.49	0.71	1.13	4.93	-0.45	0.51	0.93
Collaboration	98	3.49	0.55	1.27	4.73	-0.50	1.73	0.84
Caring	98	4.16	0.61	2.00	5.00	-0.65	0.53	0.84

PTR = parent-teacher relationship

Transformation	Data for Aim	Two Predictor	Variables

	Number of	Skew	Standardized	Kurtosis	Standardized
	Outliers		Skew		Kurtosis
Depressive Symptoms					
Original	4	1.07	4.48	0.64	1.35
Winsorized	0	0.96	4.00	0.26	0.55
SQRT Transformation	0	-0.01	-0.03	0.03	0.06
Job Demands					
Original	7	0.32	1.34	0.19	0.40
Winsorized	0	0.15	0.62	-0.36	-0.74
SQRT Transformation	5	0.10	0.43	0.12	0.25
Job-Specific Demands					
Original	2	0.30	1.22	0.18	0.37
Winsorized	0	0.17	0.72	-0.14	-0.28
SQRT Transformation	0	-0.16	-0.65	-0.04	-0.08
Job Rewards					
Original	0	-0.47	-1.94	-0.32	-0.66
Winsorized	0				
R-SQRT Transformation	0	0.20	0.83	-0.62	-1.29
Job Control					
Original	0	0.27	1.07	-0.19	-0.38
Winsorized	0				
SQRT Transformation	0	0.07	0.27	-0.42	-0.87

SQRT = Square Root Transformation R-SQRT = Reflection and Square Root Transformation

	Number of	Skew	Standardized	Kurtosis	Standardized
	Outliers		Skew		Kurtosis
Overall General PTR Quality					
Original	1	-0.22	-0.90	0.20	0.41
Winsorized	0	0.09	0.36	-0.64	-1.33
R-SQRT Transformation	0	-0.05	-0.20	-0.06	-0.12
Attitudes					
Original	0	0.15	0.60	-0.79	-1.63
Winsorized	0				
No Transformation					
Knowledge					
Original	0	0.42	1.73	-0.62	-1.28
Winsorized	0				
SQRT Transformation	1	0.14	0.57	-0.61	-1.26
Practices					
Original	2	-0.98	-4.02	2.78	5.75
Winsorized	0	-0.03	-0.11	-0.86	-1.79
R-SQRT Transformation	2	0.47	1.92	1.08	2.24
Overall Specific PTR Quality					
Original	1	-0.61	-2.50	1.38	2.86
Winsorized	0	-0.19	-0.78	-0.30	-0.62
R-SQRT Transformation	1	0.12	0.49	0.38	0.79
Confidence					
Original	2	-0.45	-1.84	0.51	1.05
Winsorized	0	-0.23	-0.95	-0.19	-0.40
R-SORT Transformation	3	-0.02	-0.07	0.13	0.27

Transformation Data for Aim Two Outcome Variables

SQRT = Square Root Transformation R-SQRT = Reflection and Square Root Transformation

Table 4 (cont'd)

	Number of	Skew	Standardized	Kurtosis	Standardized
	Outliers		Skew		Kurtosis
Collaboration					
Original	1	-0.50	-2.05	1.73	3.58
Winsorized	0	0.05	0.19	-0.32	-0.65
R-SQRT Transformation	1	-0.04	-0.17	0.89	1.84
Caring					
Original Data	1	-0.65	-2.67	0.53	1.10
Winsorized Data	0	-0.43	-1.75	-0.39	-0.80
R-SQRT Transformation	1	0.25	1.03	-0.38	-0.78

SQRT = Square Root Transformation R-SQRT = Reflection and Square Root Transformation

	Degree in Early	Childhood		
	Yes	No	Row Total	χ^2
	n (%)	n (%)	n (%)	
Level of Education				53.02°
No college degree	4 (3.10)	25 (19.10)	29 (22.10)	
Associate degree	31 (23.70)	4 (3.10)	35 (26.70)	
Bachelor's degree	46 (35.10)	11 (8.40)	57 (43.50)	
Graduate or professional degree	9 (6.90)	1 (0.80)	10 (7.60)	
Column Total n (%)	90 (68.70)	41 (31.30)	131 (100.00)	
$a = p \le 0.05$				

Crosstabulations Between Level of Education and Degree in Early Childhood

 $p \le 0.05$ $b = p \le 0.01$ $c = p \le 0.001$

Crosstabulations Between Level of Education and Level of CDA Certification

	CDA Certification				
	No CDA	CDA, No	CDA &	Row Total	χ^2
		Endorsement	Endorsement		
	n (%)	n (%)	n (%)	n (%)	
Level of Education					13.30 ^a
No college degree	16 (12.80)	5 (4.00)	8 (6.40)	29 (23.20)	
Associate degree	20 (16.00)	4 (3.20)	9 (7.20)	33 (26.40)	
Bachelor's degree	43 (34.40)	7 (5.60)	4 (3.20)	54 (43.20)	
Graduate or professional degree	9 (7.20)	0 (0.00)	0 (0.00)	9 (7.20)	
Column Total <i>n</i> (%)	88 (70.40)	16 (12.80)	21 (16.80)	125 (100.00)	
$a = p \le 0.05$					

p = 0.00 $b = p \le 0.01$ $c = p \le 0.001$

	(CDA Certification			
		CDA, No	CDA &		
	No CDA	Endorsement	Endorsement	Row Total	χ^2
	n (%)	n (%)	n (%)	n (%)	
Degree in Early Childhood					0.61
Yes	61 (48.80)	10 (8.00)	13 (10.40)	84 (67.20)	
No	27 (21.60)	6 (4.80)	8 (6.40)	41 (32.80)	
Column Total <i>n</i> (%)	88 (70.40)	16 (12.80)	21 (16.80)	125 (100.00)	
$a = p \le 0.05$					
b = p < 0.01					

Crosstabulations Between Degree in Early Childhood and Level of CDA Certification

 $p \le p \le 0.01$ $r = p \le 0.001$

Crosstabulations Between Professional Development (PD) Attendance and Type of Training

	Type of Training					
	One-Time	Multi-	Online	Coaching/	Row Total	
	Workshop/	Session	Course	Mentoring		
	Training			Session		
	n (%)	n (%)	n (%)	n (%)	n (%)	
PD Attendance						
Did not attend a PD training	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Did attend a PD training, focused on other ages	7 (10.80)	4 (6.20)	2 (3.10)	0 (0.00)	13 (20.00)	
Did attend a PD training, focused on infants and toddlers	33 (50.80)	15 (23.10)	3 (4.60)	1 (1.50)	52 (80.00)	
Column Total <i>n</i> (%)	40 (61.50)	19 (29.20)	5 (7.70)	1 (1.50)	65 (100.00)	

Crosstabulations Between Professiona	l Development (PD) Attendance	and Helpfulness in	Changing Teaching Practices
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	Helpfulness in Changing Teaching Practices				
	Not Helpful	Somewhat	Very Helpful	Row Total	
	_	Helpful			
	n (%)	n (%)	n (%)	n (%)	
PD Attendance					
Did not attend a PD training	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	
Did attend a PD training, focused on other ages	1 (1.50)	4 (6.20)	8 (12.30)	13 (20.00)	
Did attend a PD training, focused on infants and toddlers	0 (0.00)	19 (29.20)	33 (50.80)	52 (80.00)	
Column Total <i>n</i> (%)	1 (1.50)	23 (35.40)	41 (63.10)	65 (100.00)	

Crosstabulations Between Type of Training and Helpfulness in Changing Teaching Practices

	Practi	ces		
	Not Helpful	Somewhat	Very Helpful	Row Total
		Helpful		
	n (%)	n (%)	n (%)	n (%)
Type of Training				
One-Time Workshop/Training	1 (1.50)	16 (24.60)	23 (35.40)	40 (61.50)
Multi-Session	0(0.00)	4 (6.20)	15 (23.10)	19 (29.20)
Online Course	0(0.00)	3 (4.60)	2 (3.10)	5 (7.70)
Coaching/Mentoring Session	0 (0.00)	0 (0.00)	1 (1.50)	1 (1.50)
Column Total <i>n</i> (%)	1 (1.50)	23 (35.40)	41 (63.10)	65 (100.00)

Helpfulness in Changing Teaching

Crosstabulations Between Type of Training and Helpfulness in Changing Teaching Practices for Participants who Attended a PD Training that Contained Information Specific to Infants and Toddlers

	Help	ofulness in Changin	ng Teaching Practice	es
	Not Helpful	Somewhat	Very Helpful	Row Total
		Helpful		
	n (%)	n (%)	n (%)	n (%)
Type of Training				
One-Time Workshop/Training	0(0.00)	13 (25.00)	20 (38.50)	33 (63.50)
Multi-Session	0(0.00)	3 (5.80)	12 (23.10)	15 (28.80)
Online Course	0 (0.00)	3 (5.80)	0 (0.00)	3 (5.80)
Coaching/Mentoring Session	0 (0.00)	0 (0.00)	1 (1.90)	1 (1.90)
Column Total <i>n</i> (%)	0 (0.00)	19 (36.50)	33 (63.50)	52 (100.00)

Repeated	Measures	T-Test	Results 1	4ssessing	$Time_1$ and	<i>Time</i> ₂ C	Jutcome 1	Measures	

	M(SD)	DF	t	р	d
Overall General PTR Quality					
Time ₁	3.03 (0.33)				
Time ₂	3.10 (0.32)				
Difference	-0.08 (0.29)	96	-2.53	0.01	0.26
Attitudes					
Time ₁	3.23 (0.29)				
Time ₂	3.17 (0.30)				
Difference	0.06 (0.34)	96	1.67	0.10	0.17
Knowledge					
Time ₁	2.05 (0.60)				
Time ₂	2.34 (0.68)				
Difference	-0.29 (0.57)	96	-5.05	0.00	0.51
Practice					
Time ₁	3.15 (0.49)				
Time ₂	3.29 (0.41)				
Difference	-0.14 (0.40)	96	-3.34	0.00	0.34
Organiti Stranifia DTD Orgality					
Time	2.71(0.57)				
	3.71(0.57)				
Difference	5.71(0.36)	06	0.10	0.02	0.01
Confidence	0.00 (0.46)	90	0.10	0.92	0.01
Time	2 47 (0.71)				
Time	3.47(0.71)				
Difference	5.49(0.72)	06	0.24	0.91	0.02
Colleboration	-0.01 (0.30)	90	-0.24	0.81	0.02
Time	2 16 (0 56)				
	3.40(0.50)				
Difference	5.48(0.55)	06	0.52	0.60	0.05
Coring	-0.03 (0.49)	90	-0.55	0.00	0.03
Time	4.21 (0.62)				
	4.21(0.02)				
$D: \mathcal{C}$	4.10(0.01)	06	1.02	0.21	0.10
Difference	0.05 (0.52)	96	1.02	0.31	0.10

PTR = parent-teacher relationship

Correlations for Aim Two Continuous Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Depressive Symptoms												
2. Job Demands	0.26 ^b											
3. Job-Specific Demands	0.23 ^a	0.42°										
4. Job Rewards	-0.38°	-0.15	-0.26 ^b									
5. Job Control	-0.28 ^b	-0.34°	-0.24 ^a	0.27 ^b								
6. General Overall	-0.27 ^b	-0.08	-0.10	0.49°	0.33 ^b							
7. Attitudes	-0.29 ^b	-0.29 ^b	-0.13	0.42 ^c	0.20 ^a	0.72 ^c						
8. Knowledge	-0.22 ^a	-0.06	-0.11	0.34 ^c	0.26 ^b	0.74 ^c	0.33°					
9. Practice	-0.16	0.10	-0.02	0.39°	0.31 ^b	0.87°	0.38°	0.55°				
10. Specific Overall	-0.33°	-0.16	-0.19	0.24 ^a	0.11	0.30 ^b	0.34 ^c	0.18	0.19			
11. Confidence	-0.34 ^c	-0.16	-0.20 ^a	0.22 ^a	0.11	0.23 ^a	0.29 ^b	0.14	0.12	0.94 ^c		
12. Collaboration	-0.34°	-0.15	-0.18	0.29 ^b	0.15	0.38°	0.34 ^c	0.29 ^b	0.27 ^b	0.92°	0.81°	
13. Caring	-0.23 ^a	-0.12	-0.15	0.17	0.06	0.24 ^a	0.33 ^b	0.08	0.16	0.91°	0.77°	0.75°

^a = Significant at $p \le 0.05$ ^b = Significant at $p \le 0.01$ ^c = Significant at $p \le 0.001$

Correlations for Aim Two Continuous Variables, Controlling for Depressive Symptoms

	1 2	3	4	5	6	7	8	9	10	11	12
1. Depressive Symptoms											
2. Job Demands											
3. Job-Specific Demands	0.37°										
4. Job Rewards	-0.12	-0.23 ^a									
5. Job Control	-0.29 ^b	-0.21 ^a	0.22 ^a								
6. General Overall	-0.02	-0.07	0.46 ^c	0.26 ^b							
7. Attitudes	-0.27 ^b	-0.09	0.37°	0.14	0.71°						
8. Knowledge	0.02	-0.10	0.33 ^b	0.18	0.72 ^c	0.34 ^c					
9. Practice	0.15	-0.01	0.36 ^c	0.26 ^b	0.86 ^c	0.36 ^c	0.50°				
10. Specific Overall	-0.08	-0.12	0.15	0.02	0.28^{b}	0.29 ^b	0.18	0.20			
11. Confidence	-0.09	-0.13	0.12	0.01	0.21ª	0.24 ^a	0.14	0.12	0.93°		
12. Collaboration	-0.07	-0.12	0.19	0.05	0.33 ^b	0.28 ^b	0.25ª	0.25ª	0.91°	0.80°	
13. Caring	-0.06	-0.10	0.12	0.00	0.27 ^b	0.30 ^b	0.12	0.19	0.91°	0.75°	0.75°

^a = Significant at $p \le 0.05$ ^b = Significant at $p \le 0.01$ ^c = Significant at $p \le 0.001$

		Group	Site	Level of	Early	CDA	PD	Final
	Intercept	Assignment	Location	Education	Childhood	Certification	Experiences	Model
	β	β	β	β	β	β	β	F
	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	Г
Overall	3.18°	-0.07	-0.17	-0.02	0.00	0.02	0.05	1.76
	(0.11)	(0.07)	(0.08)	(0.04)	(0.08)	(0.05)	(0.04)	
Attitudes	3.34°	-0.21°	-0.12	-0.05	0.00	0.02	0.06	3.34 ^b
	(0.10)	(0.07)	(0.08)	(0.04)	(0.08)	(0.04)	(0.03)	
Knowledge	2.43°	-0.09	-0.32	-0.05	0.07	0.07	0.05	1.05
-	(0.24)	(0.16)	(0.19)	(0.10)	(0.19)	(0.10)	(0.08)	
Practices	3.25°	0.06	-0.14	0.00	-0.01	0.02	0.04	0.89
	(0.13)	(0.08)	(0.10)	(0.05)	(0.10)	(0.05)	(0.04)	

Aim One: Standard Multiple Regression Analyses for General Parent-Teacher Relationship Quality

PD = Professional Development ^a = $p \le 0.05$ ^b = $p \le 0.01$ ^c = $p \le 0.001$

		Group	Site	Level of	Early	CDA	PD	Final
	Intercept	Assignment	Location	Education	Childhood	Certification	Experiences	Model
	β	β	β	β	β	β	β	F
	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	I'
Overall	3.73°	-0.08	-0.08	0.01	-0.02	0.00	0.07	0.42
	(0.20)	(0.13)	(0.06)	(0.08)	(0.15)	(0.08)	(0.07)	
Confidence	3.54°	-0.13	-0.01	-0.02	0.02	0.01	0.07	0.24
	(0.25)	(0.16)	(0.19)	(0.10)	(0.19)	(0.10)	(0.09)	
Collaboration	3.42°	0.00	-0.11	0.06	-0.08	0.05	0.07	0.64
	(0.19)	(0.12)	(0.15)	(0.07)	(0.14)	(0.08)	(0.06)	
Caring	4.26 ^c	-0.13	-0.13	0.00	-0.02	-0.05	0.06	0.60
	(0.22)	(0.14)	(0.17)	(0.09)	(0.16)	(0.09)	(0.07)	

Aim One: Standard Multiple Regression Analyses for Specific Parent-Teacher Relationship Quality

PD = Professional Development ^a = $p \le 0.05$ ^b = $p \le 0.01$ ^c = $p \le 0.001$

<u> </u>	ntercept	Group Assignment	Site	Depressive	Ioh	Specific	T - 1.	T 1	D' 1
<u> </u>	ntercept	Assignment	т <i>(</i> •		300	specific	JOD	Job	Final
	ρ	0	Location	Symptoms	Demands	Demands	Rewards	Control	Model
	р	β	β	β	β	β	β	β	\mathbf{F}
	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	Г
Overall	3.21°	-0.09	-0.15 ^a	0.00	0.02	0.03	0.25°	0.21 ^b	6.60 ^c
	(0.05)	(0.06)	(0.06)	(0.00)	(0.07)	(0.04)	(0.06)	(0.08)	
Attitudes	3.34°	-0.22°	-0.10	0.00	-0.15 ^a	0.07	0.19°	0.10	6.57°
	(0.05)	(0.06)	(0.06)	(0.00)	(0.07)	(0.04)	(0.06)	(0.07)	
Knowledge	2.51°	-0.13	-0.30	0.00	0.12	0.00	0.33 ^a	0.41ª	2.92 ^b
-	(0.13)	(0.15)	(0.16)	(0.01)	(0.18)	(0.10)	(0.16)	(0.19)	
Practices	3.31°	0.03	-0.13	0.00	0.13	-0.01	0.25°	0.23ª	4.04 ^c
	(0.07)	(0.08)	(0.08)	(0.00)	(0.09)	(0.05)	(0.08)	(0.10)	

Aim Two: Standard Multiple Regression Analyses for General Parent-Teacher Relationship Quality

 $a = p \le 0.05$ $b = p \le 0.01$ $c = p \le 0.001$

Aim Two: Standard Multiple Regression Analyses for General Parent-Teacher Relationship Quality, with Depressive Symptoms x Job Rewards Moderation

						Job-				
		Group	Site	Depressive	Job	Specific	Job	Job		Final
	Intercept	Assignment	Location	Symptoms	Demands	Demands	Rewards	Control	Moderator	Model
	β	β	β	β	β	β	β	β	β	\overline{L}
	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	Г
Overall	3.19°	-0.10	-0.16 ^b	0.00	0.03	0.02	0.29°	0.18 ^a	-0.01 ^b	6.94°
	(0.05)	(0.06)	(0.06)	(0.00)	(0.07)	(0.04)	(0.07)	(0.07)	(0.01)	
Attitudes	3.34°	-0.22°	-0.11	0.00	-0.15ª	0.07	0.21°	0.09	-0.01	5.92°
	(0.05)	(0.06)	(0.06)	(0.00)	(0.07)	(0.04)	(0.07)	(0.08)	(0.01)	
Knowledge	2.46°	-0.14	-0.33ª	-0.01	0.12	-0.01	0.43°	0.31	-0.05°	4.22°
C	(0.13)	(0.14)	(0.15)	(0.01)	(0.17)	(0.10)	(0.16)	(0.18)	(0.01)	
Practices	3.30°	0.03	-0.14	0.00	0.14	-0.01	0.28°	0.20ª	-0.01	3.82°
	(0.07)	(0.08)	(0.08)	(0.00)	(0.09)	(0.05)	(0.08)	(0.10)	(0.01)	
a = n < 0.05										

 $a = p \le 0.05$ $b = p \le 0.01$ $c = p \le 0.001$

Aim Two: Standard Multiple Regression Analyses for Specific Parent-Teacher Relationship Quality

						Job-			
		Group	Site	Depressive	Job	Specific	Job	Job	Final
	Intercept	Assignment	Location	Symptoms	Demands	Demands	Rewards	Control	Model
	β	β	β	β	β	β	β	β	E
	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	Г
Overall	3.76°	-0.03	-0.05	-0.02 ^a	-0.02	-0.06	0.17	-0.03	2.20 ^a
	(0.11)	(0.13)	(0.13)	(0.01)	(0.15)	(0.08)	(0.13)	(0.15)	
Confidence	3.53°	-0.05	0.05	-0.02 ^b	-0.02	-0.09	0.18	-0.05	2.19 ^a
	(0.13)	(0.15)	(0.16)	(0.01)	(0.18)	(0.10)	(0.16)	(0.19)	
Collaboration	3.51°	0.02	-0.07	-0.02ª	-0.02	-0.05	0.22	-0.01	2.74 ^a
	(0.10)	(0.12)	(0.12)	(0.01)	(0.14)	(0.08)	(0.12)	(0.14)	
Caring	4.25°	-0.07	-0.14	-0.01	-0.03	-0.06	0.10	-0.03	1.12
	(0.12)	(0.14)	(0.15)	(0.01)	(0.16)	(0.10)	(0.15)	(0.17)	
a = -0.05									

 $p^{a} = p \le 0.05$ $p^{b} = p \le 0.01$ $p^{c} = p \le 0.001$

Aim Two: Standard Multiple Regression Analyses for General Parent-Teacher Relationship Quality, with Depressive Symptoms x Job Rewards Moderation

						Job-				
		Group	Site	Depressive	Job	Specific	Job	Job		Final
	Intercept	Assignment	Location	Symptoms	Demands	Demands	Rewards	Control	Moderator	Model
	β	β	β	β	β	β	β	β	β	F
	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	(SE)	Г
Overall	3.74°	-0.04	-0.06	-0.02 ^b	-0.02	-0.07	0.20	-0.06	-0.01	2.06
	(0.11)	(0.13)	(0.13)	(0.01)	(0.15)	(0.08)	(0.14)	(0.16)	(0.01)	
Confidence	3.51°	-0.06	0.04	-0.02 ^b	-0.01	-0.09	0.22	-0.08	-0.01	2.04
	(0.14)	(0.15)	(0.16)	(0.01)	(0.18)	(0.10)	(0.17)	(0.19)	(0.01)	
Collaboration	3.48°	0.01	-0.09	-0.02 ^b	-0.01	-0.05	0.28ª	-0.04	-0.02	2.89 ^b
	(0.10)	(0.12)	(0.12)	(0.01)	(0.13)	(0.08)	(0.12)	(0.14)	(0.01)	
Caring	4.25°	-0.08	-0.15	-0.01	-0.03	-0.06	0.10	-0.03	0.00	0.97
	(0.12)	(0.14)	(0.15)	(0.01)	(0.16)	(0.10)	(0.15)	(0.18)	(0.01)	
$a = n \le 0.05$										

 $p^{a} = p \le 0.05$ $p^{b} = p \le 0.01$ $p^{c} = p \le 0.001$

APPENDIX B: FIGURES

Figure 1

Moderation Effect of Job Rewards on the Relationship between Depressive Symptoms and Overall General Parent-Teacher Relationship Quality



Figure 2





Figure 3

Moderation Effect of Depressive Symptoms on the Relationship between Job Rewards and Overall Specific Parent-Teacher Relationship Quality

