EFFECTS OF MATERNAL MENTAL ILLNESS ON BEHAVIORAL DIFFICULTY IN PRESCHOOL CHILDREN: DO PARENTAL PERCEPTIONS OF PARENTING ABILITY AND THE PARENT-CHILD RELATIONSHIP PLAY A ROLE?

A Dissertation

by

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ABSTRACT

It is well known that connections between maternal mental illness and childhood mental illness exist (Laletas, Goodyear, & Reupert, 2017), although contributing factors and pathways that mediate such relationships remain understudied. The present study aimed to determine whether maternal perceptions, particularly as they relate to parenting ability and to the parent-child relationship, mediate relationships between maternal mental illness and subsequent behavioral difficulties in preschool-age children. Levels of maternal mental illness during gestation and up to one year post-birth were measured by assessing the prevalence of mental illness diagnoses and symptomatology via customized screeners, while current mental functioning was assessed via administration of the Mental Health Inventory (MHI). Suspected mediators, perceptions of parenting ability and perceptions of the parent-child relationship, were measured by the Parenting Sense of Competence Scale (PSOC) and Mothers Object Relations Scales (MORS), respectively. Current behavioral functioning for preschoolers was measured via the Preschool Pediatric Symptoms Checklist (PPSC). Current maternal mental functioning was found to be a significant predictor of child behavioral difficulties, as well as perceptions of parenting ability and perceptions of the parent-child relationship (specifically related to feelings of invasion within the relationship). Subsequently, these variables were found to be significant predictors of childhood behavioral difficulties. Predictive relationships between maternal mental illness and child behavioral difficulties were found to be significant when diagnostic receipt during gestation was characterized as a predictor, whereas non-significant relationships were confirmed when diagnoses received up to one year post-birth, symptomatology experienced during gestation, and symptomatology experienced up to one year post-birth were designated as independent variables. Maternal perceptions of parenting ability and of invasion within the parent-child relationship were found to

be significant mediators between maternal mental functioning and child behavioral difficulties, with both variables further emphasizing negative associations between independent and dependent variables.

DEDICATION

This dissertation is dedicated to the Riverbend Head Start program in Madison County, Illinois. From my experiences as a Head Start student to serving as a childcare volunteer, practicum student, teacher's assistant, mental health consultant, doctoral-level researcher, and graduate supervisor for various programs throughout Illinois and Texas, Head Start has supported me in every way possible. Special appreciation is given to Kym Brown. Thank you for all you have done for me and my family. Your kindness, generosity, and enthusiasm will forever remain in the hearts of those whose lives you've touched.

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CHAPTER 1

INTRODUCTION

It is well known that mental illness affects one's ability to function within their environment, and that it has great potential to lead to negative coping mechanisms and decreased life satisfaction. Furthermore, it is also commonly known that if one is diagnosed with a mental illness, it has the potential to affect their interpersonal relationships, which has great potential to affect the lives of more than just the individuals diagnosed.

There is a historic interest in rates of childhood mental illness, with approximately one in seven children between the ages of two and eight receiving at least one diagnosis of a mental, behavioral, or developmental disorder (Centers for Disease Control and Prevention [CDC], 2018a). Though incredibly concerning, it can be argued that the factors contributing to such high rates of diagnoses may be more troubling. As supporting evidence for a causal relationship between maternal mental illness and childhood behavioral difficulties has already been found (Kingston et al., 2018), the present study aims to determine whether additional factors have mediating effects on subsequent internalizing and externalizing behaviors in children.

The Parent-Child Relationship

As young children rely on their parents to ensure their safety and to promote their physical, cognitive, emotional, social, and behavioral growth, the quality of the parent-child relationship is a very important component of child development. Not only are positive parent-child relationships an important predictive factor for the development of healthy childhood attachment (Kochanska, 1998), they also have significant implications for later adolescent development and the development of positive parenting practices (U.S. Department of Health & Human Services, 2019). Additionally, implications for maternal functioning have been found, as mothers

experiencing attachment-related distress with their child are more likely to suffer from depressive symptoms (Badovinac et al., 2018).

Theory

The present study's theoretical basis is rooted in cognitive behavioral theory, which proposes that an individual's cognitions affect their feelings, subsequently affecting their behaviors (Gonzalez-Prendes & Resko, 2012). Based on evidence that maternal mental illness is causally related to internalizing and externalizing difficulties in young children (Kingston et al., 2018), it is suspected that this relationship is moderated by parental perceptions of both their parenting abilities and their relationship with their child. Aligning with cognitive behavioral theory, these perceptions of parenting ability and connectedness are hypothesized to affect parental feelings, thus altering their parenting practices and contributing to behavioral difficulties in their children.

Self-Efficacy

Self-efficacy is a psychological construct that can be defined as one's perception of their ability to successfully execute a behavior in order to produce a desired outcome (Bandura, 1977; American Psychological Association [APA], 2021b). Self-efficacy is often affected by outcome expectancies, which are individual expectations that if particular behaviors are exhibited, certain outcomes will ensue (Bandura, 1977).

Self-efficacy focuses primarily on cognitions that individuals experience regarding themselves and their abilities based on mastery criteria, whereas broader constructs (e.g., self-concept) often incorporate affective responses towards the self in addition to social pressures that influence these responses (Bong & Clark, 1999). Levels of self-efficacy are associated with initiation and persistence of coping behavior (Bandura, 1977), as well as goal setting, strength of

one's commitment to achieve their goals, and goal attainment (Bandura, 1994). This suggests that if one's self-efficacy is obstructed due to feeling insufficient compared to mastery criteria, their likelihood of trying to manage and cope with adverse situations will be significantly hindered. This can be observed in families, such as by a mother struggling to manage her child's difficult behaviors due to feelings of parental inadequacy as a result of her perceived inability to measure up to her perceptions of what constitutes an ideal mother. Parental self-efficacy has many implications, including parental mental health, child development, and the parent-child relationship (Albanese, Russo, & Geller, 2019).

Purpose of Present Study

The present study aims to determine the presence of potential relationships between maternal mental illness and childhood internalizing and externalizing behavioral difficulties. Mediating variables suspected to influence these relationships, maternal perceptions of parenting ability and maternal perceptions of the parent-child relationship, will also be observed in order to inform future interventions by determining potential variables of interest.

Data was collected from biological mothers of 3- and 4-year-old children who participate in data collection efforts associated with the Qualtrics data collection service promoted by Texas A&M University. Screening procedures were used to determine the presence of poverty status, as well as mental illness diagnoses, symptomatology, and reception of psychopharmaceutical and/or therapeutic treatment during gestation and up to one year post-birth. Following this administration, the Mental Health Inventory was utilized to determine present levels of maternal functioning. The Parenting Sense of Competence Scale (PSOC) was used to measure maternal perceptions of parenting ability, while the Mothers Object Relations Scales (MORS) was used to assess for perceptions of the mother-child relationship. The Preschool Pediatric Symptom Checklist (PPSC)

was used to assess for levels of childhood behavioral difficulties, although scoring restrictions resulted in internalizing and externalizing behaviors being measured collectively (further referred to as "behavioral difficulties"). Models demonstrating the proposed relationships between independent, dependent, and mediating variables can be seen in Figure 1, Figure 2, and Figure 3.

Figure 1

Hypothesized Model of the Relationship Between Maternal Mental Illness and Childhood Behavioral Difficulties

Figure 2

Hypothesized Model of Maternal Perceptions of Parenting Ability as a Mediating Variable Between Maternal Mental Illness and Childhood Behavioral Difficulties

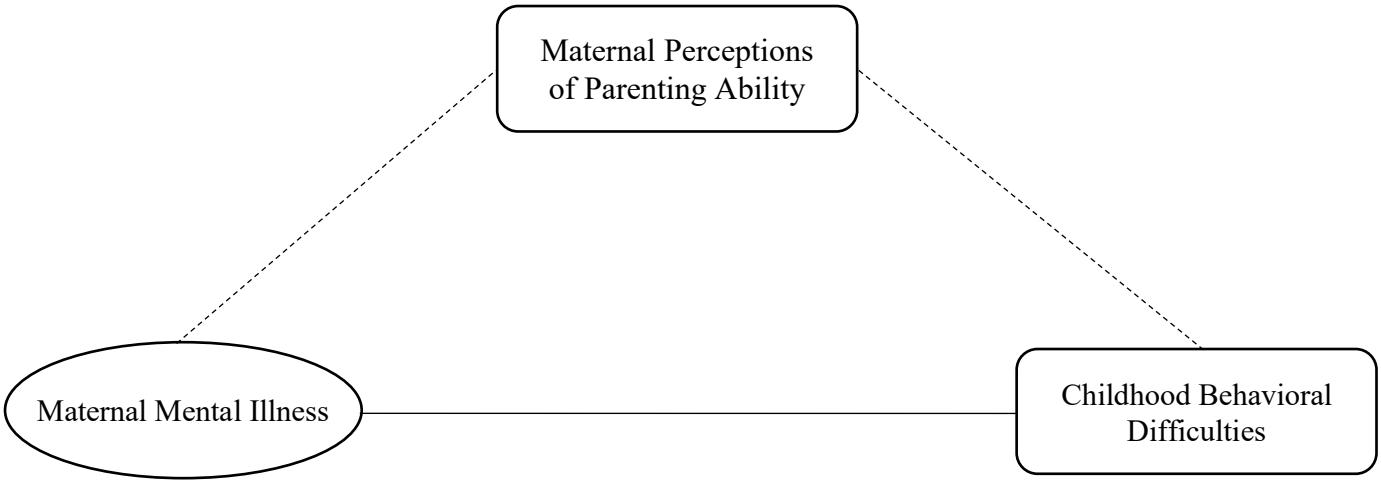
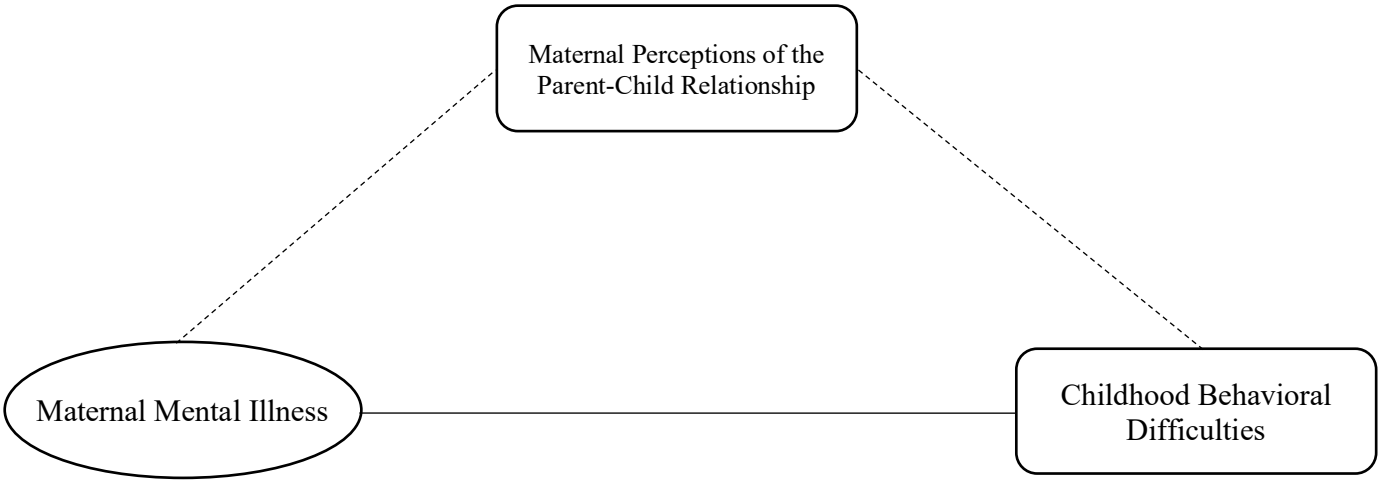


Figure 3

Hypothesized Model of Maternal Perceptions of the Parent-Child Relationship as a Mediating Variable Between Maternal Mental Illness and Childhood Behavioral Difficulties



Research Questions

For the purpose of the present study, the questions that must be answered are as follows:

1. To what extent does maternal mental illness predict mothers' perceptions of her own ability to parent effectively?

2. To what extent does maternal mental illness predict mothers' perceptions of her own relationship with her child?

3. To what extent is the relationship between maternal mental illness and childhood internalizing and/or externalizing behavioral difficulties mediated by maternal perceptions of parenting ability?

4. To what extent is the relationship between maternal mental illness and childhood internalizing and/or externalizing behavioral difficulties mediated by maternal perceptions of the parent-child relationship?

Hypotheses

It is currently hypothesized that: a) maternal mental illness will predict perceptions of parenting ability, demonstrating a negative association (that is, as mental illness symptoms/diagnoses rise, perceptions of parenting ability will fall), b) that maternal mental illness will predict perceptions of the parent-child relationship, demonstrating a negative association (that is, as mental illness symptoms/diagnoses rise, perceptions of the parent-child relationship will fall), and c) that significant mediating effects between maternal mental illness and childhood behavioral difficulties will be observed (that is, that the levels of perceptions related to parenting ability and to the parent-child relationship will separately affect the strength of the relationships between levels of maternal mental illness and subsequent childhood behavioral difficulties during the child's preschool years.

CHAPTER 2

REVIEW OF THE LITERATURE

Childhood Mental Illness

Mental illnesses are defined as health conditions involving changes in emotions, thinking, or behavior that elicit distress and have the potential to cause difficulty in functioning within social, familial, and/or work-related contexts (American Psychiatric Association, 2018). Although mental illness has the potential to affect all individuals, regardless of age, race, culture, or other identifying characteristics, individuals under the age of 18 are legally, as well as for the present study, classified as "children" and are often primary targets for mental illness prevention efforts. It should be noted, however, that particularly in relation to classifying age of mental illness onset, categorizations (e.g., "child", "adolescent", etc.) often vary by investigator (Frick, 2012).

Age and Childhood Mental Illness

Currently, rates of early childhood mental illness are reaching alarming numbers, with approximately 17% of children ages six and younger experiencing a mental illness during their early childhood years (Von Klitzing, Döhnert, Kroll, & Grube, 2015). Behavioral disorders were found to peak between the ages of six and eleven and to supersede rates of internalizing disorders (e.g., depression and anxiety) during early childhood (CDC, 2021). These rates are particularly concerning as we know that mental illness does not have a tendency to vanish, but instead to worsen over time if not treated appropriately (National Institute of Mental Health, 2020). Children already identified with having at least one mental illness are also at a higher risk for developing additional psychological conditions, making the likelihood of experiencing mental illness symptomatology later in life even greater (CDC, 2021).

Rates of adolescent mental illness have been found to be even higher than that of children, with approximately half of all chronic mental illnesses being identified in individuals by the time they are 14 years old (CDC, 2018b). Even more troubling is that these rates continue to rise as adolescents transition into adulthood, with approximately 20% of adults ages 18 and older having been diagnosed with a mental disorder, and approximately 75% of these disorders being identified by the time an individual is 24 years old (CDC, 2018b; American Psychiatric Association, 2018). Less than half of adults identified with having a mental illness receive treatment for their symptoms (American Psychiatric Association, 2018), suggesting that although the risk of developing a mental illness continues to rise over the lifespan, treatment options and availability are unable to keep up.

Race and Childhood Mental Illness

It has been found that minority children and adolescents have similar (or potentially even lower) rates of mental illness and behavioral health challenges than their non-Hispanic White counterparts (American Psychological Association [APA], 2021a). Non-Hispanic White children have been found to be significantly more likely to develop a mental, behavioral, or developmental disorder, particularly if they are males and/or between the ages of six and eight, demonstrating the highest likelihood of developing mental illness symptomatology than their non-white peers (Bitsko et al., 2016). White individuals are also significantly more likely to commit suicide than minority individuals (American Psychiatric Association, 2018), with suicide being the second leading cause of death for individuals, regardless of race, between the ages of 10 and 34 (CDC, 2017b) and having been found to often occur in individuals experiencing mental illness symptomatology (CDC, 2018b). Additionally, coming from an English-speaking home also increases one's likelihood of experiencing mental illness, although this has been found to be true for both White and non-White populations (Bitsko et al., 2016).

Despite these findings, minority individuals tend to experience more persistent mental illness due to a lack of access to appropriate mental and behavioral health services (American Psychiatric Association, 2018). This access, or lack thereof, has been found to be negatively affected by the interaction of minority status in combination with the effects of low socioeconomic status (e.g., material deprivation, perceived lower social status, etc.), family structure (e.g., single parent homes, blended families, etc.), adverse childhood experiences (e.g., exposure to violence), and social stress (e.g., economic disadvantage, residential segregation, etc.) (APA, 2019).

Etiology of Childhood Mental Illness

As we know that the risk of mental illness continues to increase over one's developmental period, and that mental illness can have detrimental impacts on one's ability to function appropriately, it is important to focus attention on preventing mental illness instead of simply treating it once it has already occurred. In regard to children, many factors have been found to contribute to mental illness both during childhood and subsequently later in life, including exposure to intimate partner violence (Cater, Miller, Howell, & Graham-Bermann, 2015), experiencing low socioeconomic status (particularly subjective social status, defined as one's perception of their social status) (McLaughlin, Costello, Leblanc, Sampson, & Kessler, 2012), prenatal toxin exposure (e.g., exposure to maternal cigarette smoking and/or alcohol use, environmental toxins, etc.) (Latimer et al., 2012; Frick, 2016), prenatal exposure to disease (Latimer et al., 2012; Green et al., 2018), having parents with low educational attainment (APA, 2021a), experiencing increased maternal stress during gestation (Latimer et al.; Frick, 2016), and having a parent with mental illness during childhood (Laletas, Goodyear, & Reupert, 2017). The latter is particularly concerning as it has been found that the number of children born to mothers with at least one mental illness is rising by approximately 3.7% per year (O'Donnell et al., 2013).

Children born to mothers experiencing mental illness are significantly more likely to experience abuse (Madlala & Kassier, 2018), have maltreatment reports placed on their behalf, and are up to two times as likely to receive a foster care placement (Kohl, Johnson-Reid, & Drake, 2011).

Identification of Childhood Mental Illness

Although developmental delays are often observable at very young ages, such as by a child being a late crawler or walker, mental illness and behavioral difficulties are often not acknowledgeable until a child is around preschool-age or beyond, leaving a delay in treatment until symptoms can be observed. Many factors affect the ability to detect mental illness at earlier points in a child's life, such as behavioral expectations for children differing across settings (particularly once a child begins attending school), a lack of mental health monitoring until they are school-aged, and young children's difficulties with expressing their needs, just to name a few. It is because of the previously mentioned heritability of mental illness, negative coping mechanisms and behavioral patterns, and problematic early detection of mental illness that research should begin looking towards the early developmental period. Studying the initial stages of development will facilitate appropriate implementation of prevention practices and the deterrence of the formation of mental illnesses or maladaptive coping mechanisms.

Although frequent pediatric screening for developmental and behavioral health difficulties is a highly recommended preventative practice (American Academy of Pediatrics [AAP], 2019), there are many barriers to treatment. As care within the pediatric setting is often more easily accessible and less stigmatizing than care received via a mental health setting, barriers such as billing difficulties (Fallucco et al., 2017), screener inefficiencies (e.g., screener length, time necessary to receive results, etc.) and site-specific challenges (e.g., staffing difficulties, standardization of screening procedures, financial strain, etc.) (Silver et al., 2017) often impede

these practices. School-based screenings could be an alternative, although these practices generally focus on assessing for problematic symptomatology and emotions, rather than strengths that could better inform intervention strategies and potentially deter mental illness formation (Moore, Mayworm, Stein, Sharkey, & Dowdy, 2019). Additionally, as appropriate follow-up would be warranted for students who may be identified as having developmental and/or behavioral health needs, schools are often hesitant to engage in universal screening due to a lack of resources for students who do not qualify for targeted services such as what would be provided via the special education system. Further, a lack of teacher buy-in, time to complete screening assessments, and motivation for parents and teachers to complete and submit screening materials may impede the ability for school systems to screen for developmental difficulties appropriately (Moore et al., 2019).

Trajectories of Childhood Mental Illness

Individuals who suffer from mental illness during their childhood years often have difficulty functioning academically (APA, 2021a; Deighton et al., 2018) and are at increased risk of developing academic impairments due to a higher likelihood of experiencing frequent absences, higher rates of suspension or expulsion, and failure that may lead to school dropout (APA, 2021a). Although there is supporting evidence to suggest a negative correlation between mental illness symptomatology and academic achievement, sex differences remain understudied (Deighton et al., 2018).

Despite the increasing availability of evidence-based mental health treatment options, rates of childhood mental illness and thus, subsequently rates of adolescent and adult mental illness, are not decreasing (CDC, 2021). This is suspected to be due to a lack of overall child mental health literacy (Tully, Hawes, Doyle, Sawyer, & Dadds, 2019), in addition to the sustained stigmatization

of mental illness (Krohn & Matone, 2017), which refers to one's understanding of mental health disorders that determines their recognition, prevention, and management. These factors contribute to the persistent insufficiencies in the acknowledgement, identification, and treatment of mental illnesses.

Maternal Mental Illness

Broadly, maternal mental illness can be defined as mental illness experienced by women who are childbearing, encompassing both women who have previously given birth as well as those experiencing gestation. More specifically, the literature often refers to the perinatal period when discussing maternal mental illness, which is comprised of the pregnancy or the antenatal period, and the year following childbirth, referred to as the postnatal period (National Collaborating Centre for Mental Health, 2014).

Prevalence of Maternal Mental Illness

Nationally, rates of mental illness are over 7% higher in women than in men, with rates of mental illness, regardless of sex, increasing by nearly 10% for individuals at or below the poverty line compared to individuals living at or above double the U.S. poverty threshold (Center for Behavioral Health Statistics and Quality, 2017). Worldwide estimates show approximately 10% of pregnant women and 13% of women who have just given birth experience a mental disorder, with depression being the leading mental illness experienced during the postpartum period (World Health Organization [WHO], 2020b). These rates are even higher in developing countries, with over 15% of pregnant women and nearly 20% of women postpartum experiencing mental illness (WHO, 2020b). Regardless of maternal status, depression has been identified as the most common women's mental health problem, depression is twice as common in women, and is largely more persistent in women than in men (WHO, 2020a).

In the United States, postpartum depression estimates vary from state to state, with rates ranging from 10-25% depending on location (CDC, 2017a). Women with mental illness have been found to be more likely to experience unplanned pregnancy (Allen-Mears, Blazevski, Bybee, & Oyserman, 2010), parent without spousal support, and live in single parent homes (Mowbray, Oyserman, Zemencuk, & Ross, 1995; Oyserman, Mowbray, Allen-Mears, & Firminger, 2000). Women experiencing mental illness are also more likely to have custody of their children taken away as custody can be revoked for the possibility of harm to a child, despite an actual lack of maltreatment (Lyte, 2017).

Identification of Maternal Mental Illness

Following birth, the mental status of the mother is often overlooked due to the intense focus often placed on the physical status of her and the fetus, with both pre- and post-natal mothers being found to be significantly less likely to receive diagnostic attention for mental illness than their control counterparts (Geier, Hills, Gonzalez, Tum, & Finley, 2015). As mothers frequently fail to prioritize or acknowledge their own mental health struggles (Gilson et al., 2018), and as symptoms of maternal mental illness are often attributed to shifts in mood and functionality due to physiological changes expected to occur during pregnancy (Kendig et al., 2018), identification of maternal mental illness is often difficult.

Screening for maternal mental illness (particularly depression) during the perinatal period is highly recommended by the American College of Obstetricians and Gynecologists (2015), as early identification allows intervention to occur, thus improving outcomes for both the mother and children. Utilizing valid, standardized measures to screen for maternal mental illness is also suggested, as clinical judgement alone often fails to identify problematic symptomatology appropriately, as is following a standardized screening procedure and response protocol for

mothers identified as having elevated symptomatology (American College of Obstetricians and Gynecologists, 2015).

Utilizing maternal screening methods within the pediatric health arena may be beneficial as these providers generally have a high frequency of family interactions during a child's first year of life (AAP, 2019). It is recommended that mothers be screened for mental illnesses, such as postpartum depression, within the pediatric care setting at their child's one-, two-, four-, and six-month appointments (AAP, 2019) to prevent negative outcomes for both the mother and child. However, careful consideration regarding such protocols should be taken as parent-focused screening within child-focused settings could potentially induce feelings of discomfort and/or personal invasion, thus resulting in aversiveness to attend preventative appointments and increasing the possibility that unfavorable child outcomes occur.

Treatment of Maternal Mental Illness

Even if diagnostic consideration is given, mothers were found to be approximately 24% less likely to receive treatment for their mental illness once diagnosed (Geier et al., 2015). Additionally, supporting evidence has been found to conclude that not only are mothers less likely to be identified with having a mental illness or to receive initial treatment, but they are often much more likely to experience treatment discontinuity as compared to controls (Krohn & Matone, 2017). This has been found to be particularly true for women of low socioeconomic status and women of color, as there is a pervasive lack of resources available to these women (Krohn & Matone, 2017). Consistent with these trends, the age of mental illness onset has been found to be positively correlated with social support received by mothers (Oyserman et al., 2000).

Despite the potential for resources to be available, younger women are less likely to receive stable treatment for mental illness once identified as they often feel they can handle the problem

on their own and are typically more affected by the stigma accompanying both the diagnoses and treatment of mental illness (Krohn & Matone, 2017). Stigmatization of mothers with mental illness has also been found to occur within the medical profession, as nurses have been found to perform fewer routine postpartum interventions with women identified as having a mental illness due to negative thoughts concerning the woman's parenting abilities (Ordan, Shor, Liebergall-Wischnitzer, Noble, & Noble, 2017).

Of those who do receive therapeutic treatment for mental illness symptomatology, pharmaceutical intervention is a common method utilized. Medications often prescribed to treat common symptoms of maternal mental illness (e.g., depressive and/or anxiety symptoms) include selective serotonin reuptake inhibitors (SSRI's), which are fairly easy to access in primary care settings, require minimal pharmacologic monitoring, and have minimal side effects (Marken & Munro, 2000), thus making them a desirable choice for intervention. Rates of symptomatology have been found to be negatively correlated with prenatal SSRI usage in mothers (Korja et al., 2018), suggesting that this is an effective method for treating depressive and/or anxious symptoms, including those associated with pregnancy. Although pharmaceutical treatment is desirable in many cases, therapeutic treatment (such as cognitive therapy) has been found to be similarly effective in reducing symptomatology and has shown to be more effective in reducing rates of relapse following treatment discontinuation (DeRubeis, Siegle, & Hollon, 2008). Despite their effectiveness, therapeutic interventions are less frequently utilized by mothers due to low perceived need and/or desire to address difficulties independently (Mojtabai et al., 2011), time commitments, social stigma (Krohn & Matone, 2017), and financial barriers (Rowan, Mc Alpine, & Blewett, 2013). Of these barriers, it is important to note that attitudinal barriers often supersede logistical barriers to receiving treatment, suggesting that although treatment may be available,

perceptions of mental illness and treatment may significantly interfere with the likelihood for intervention to be received and for treatment to be maintained (Krohn & Matone, 2017; Bruwer et al., 2011; Mojtabai et al., 2011).

Perceptions and Maternal Mental Illness

Krohn and Matone's (2017) findings, suggesting that many women often fail to receive appropriate mental health services, speak to the importance of not only identifying populations in need of appropriate diagnostic and treatment attention, but also to the detrimental effects that can occur when individuals are averse to receiving treatment, despite availability, due to their cognitions related to how they will be perceived if they were to seek help. As aforementioned, and supported by cognitive behavioral theory, an individual's cognitions have been found to have effects on their feelings and subsequent behaviors (Gonzalez-Prendes & Resko, 2012), which include the decision to abstain from receiving treatment due to potential feelings of shame and guilt that often accompany mental health difficulties. Not only do these negative cognitions have the potential to deter individuals from seeking treatment, but it can be assumed they have an even greater potential to affect the willingness of a pre- or post-natal mother to receive available mental health treatment due to the great emphasis that is so commonly placed on the wellbeing of the fetus/newborn, often at the expense of the mother's health.

Women are often perceived to be "selfish" or "weak" when they attempt to attend to their own needs before those of their children. Due to this stigma, mothers often avoid attending to their mental health, which ultimately impacts their mental state and ability to parent optimally. Coleman and Karraker (1997) found that women's perceptions of their ability to parent are positively correlated with the quality of care provided to their child, while Bornstein, Putnick, and Suwalsky (2018) suggest it may be possible for cognitions related to lower parental success to contribute to

insufficient control in parenting practices (either under-control leading to resentment and hostility, or over-control that may lead to invasive practices), thus potentially affecting the child's grasp on their own self-control and autonomy related to their internalizing and externalizing behaviors.

Connections Between Maternal and Childhood Mental Illness

Child Outcomes

Connections have been found between maternal mental illness and childhood developmental difficulties. Physically, children born to mothers suffering from mental illness have been found to experience low birth weight, developmental delays, inadequate immunization schedules, somatic symptoms, disrupted sleep patterns, as well as psychiatric and neurobehavioral disorders (Madlala & Kassier, 2018). Additionally, within a mental health context, these children often experience internalizing and externalizing behavioral difficulties (Kingston et al., 2018; Grant et al., 2000; Goosby, 2007; Gross, Shaw, Burwell, & Nagin, 2009; & WHO, 2020b), often thought to be a result of decreased maternal functioning (WHO, 2020b). Maternal mental illness has also been found to be a larger predictor of childhood developmental vulnerabilities than a variety of other hazardous exposures during gestation (e.g., exposure to infectious diseases during pregnancy) (Green et al., 2018), with the relationship between maternal mental illness and subsequent childhood behavioral difficulties being found to be mediated by socioeconomic status (Goosby, 2007), parenting style (Allen-Mears et al., 2010), and sex of the child (Burt et al., 2005).

Maternal Outcomes

Maternal mental illness, particularly depression, is associated with reduced maternal sensitivity, especially in samples where there is high social adversity (Murray, Halligan, & Cooper, 2010). This sensitivity has been found to be positively correlated with Theory of Mind abilities (i.e., one's ability to attribute mental states [e.g., beliefs, emotions, intents, etc.] to oneself, and to

realize that others have mental states that are different from their own) (Rigby, Conroy, Miele-Norton, Pawlby, & Happé, 2016), suggesting that mental illness has the ability to hinder one's ability to relate to, understand, and interact with others. Similarly, reduced sensitivity due to maternal depression has been found to be associated with less engagement, flexibility, and positive affection in mothers, as well as with less mutuality, reciprocity, and enjoyment in mother-child dyads (Albright & Tamis-LeMonda, 2002). In some cases, prolonged maternal mental illness has been found to have adverse effects not only on the mother's ability to care for herself (e.g., eating, sleeping, bathing regularly, etc.), but that childcare-specific behaviors such as typical infant care and breastfeeding practices may also be adversely affected (WHO, 2020b).

Reciprocity of Mental Illness

Although a fairly clear line can be drawn from maternal mental illness to childhood internalizing and/or externalizing difficulties, it is important to note that the relationship between these variables has been found to be reciprocal (that is, that mothers of children with behavior problems are more likely to experience mental illness later in life) (Kingsbury et al., 2017). Children of mothers with mental illness have been found to often experience perceptions of parent-child role reversal, in addition to perceived obligation to engage in caretaking activities for their mothers (Petrowski & Stein, 2016). These findings speak to the importance of providing holistic services that address the needs of both children and their parents, as parent-child interactions can greatly influence the wellbeing of both parties (Petrowski & Stein, 2016).

Maternal Mental Illness and Perceptions of Parenting Ability

As supporting evidence for a causal relationship between maternal mental illness and childhood behavioral difficulties has already been found (Kingston et al., 2018), the present study aims to determine whether additional factors (e.g., maternal perceptions of their parenting abilities

and maternal perceptions of their relationship with their child) have mediating effects on subsequent internalizing and/or externalizing behavioral difficulties in children. Previous research has found that fatigue/exhaustion (common symptoms of many mental illnesses) are significant predictors of maternal self-efficacy (Chau & Giallo, 2015; Dunning & Giallo, 2012; Giallo, Rose, & Vittorino, 2011) and parent-child relationships (Gillis & Roskam, 2019), and that family management, particularly in relation to managing a family with a child who has a developmental disability (e.g., cognitive, behavioral, etc.), has been found to be linked to maternal perceptions of management ability (McKechnie et al., 2018). Furthermore, evidence has been found to suggest negative correlations between problem behaviors in children and parental self-esteem (Johnston & Mash, 1989), suggesting a reciprocal relationship between child and maternal functioning.

Although becoming a mother is generally a significant component of a woman's self-concept, having the ability to support and encourage greater levels of meaning and connection, women with mental illness who struggle with feeling competent in their maternal role often experience hindered perceptions of self-concept and ability (Hine, Maybery, & Goodyear, 2019). Levels of maternal self-concept have been found to be positively correlated with perceptions of parenting knowledge and skills, in addition to perceptions of interpersonal relationships (Lee, Chung, Park, & Burns, 2016).

Theoretical Implications

As supported by cognitive behavioral theory, which proposes that an individual's feelings are the connecting link between thoughts and subsequent actions (Gonzalez-Prendes & Resko, 2012), perceptions have been found to be linked to behavior. Expectations of personal efficacy (an individual's belief in their capacity to exert control over their own motivation, behavior, and social environment) determine whether coping behavior will be initiated, how much effort will be

expended, and how long it will be sustained in the face of obstacles and aversive experiences (Bandura, 1977). These expectations are derived from four principal sources of information, including performance accomplishments, vicarious experiences, verbal persuasion, and physiological states (Bandura, 1977).

Perceptions and Related Outcomes

Women's perceptions of parenting ability have been found to be positively correlated with the quality of care given to their child (Coleman & Karraker, 1977), with parental self-efficacy having been found to mediate the relationship between fatigue (a common symptom of many mental illnesses) and hostility/low parental warmth (Chau & Giallo, 2015), maternal confidence and parenting stress (Liu, Chen, Yeh, & Hsieh, 2012), maternal substance use and subsequent cessation behaviors (Massey et al., 2012), and infant temperament and maternal depression (Cutrona & Troutman, 1986). Mothers with higher levels of self-concept have also been found to be significantly more likely to breastfeed their infants (Britton & Britton, 2008) and to have experience significantly lower levels of guilt and shame associated with how they believe others view their parenting abilities (Liss, Schiffrin, & Rizzo, 2013). These findings suggest that the extent to which a mother perceives herself and her abilities determines the extent to which she is able to appropriately care for her child, both pre- and postnatally.

It is important to note that maternal perceptions of parenting ability have been found to be significant predictors of parenting practices, although support for a similar connection between paternal perceptions of parenting ability and parenting practices has not been found (Glatz & Buchanan, 2019). Additionally, evidence to support continuous influence of maternal perceptions of parenting ability has been identified, as indicated by negative correlations between maternal perceptions of parenting ability and adolescent externalizing behaviors (Glatz & Buchanan, 2019).

Together, these findings suggest that addressing maternal perceptions of parenting ability not only has the potential to improve maternal self-esteem and levels of self-concept, but that long-term benefits for both the mother and her child may be possible by addressing maternal self-efficacy.

Maternal Mental Illness and Perceptions of the Parent-Child Relationship

Mental illness has been found to be one of the most significant predictors of maternal self-efficacy by the time their children are preschool age, followed closely by maternal attachment insecurity (Zietlow, Schlüter, Nonnenmacher, Müller, & Reck, 2014). Evidence to support a causal relationship between parent-child relationship quality and subsequent internalizing and/or externalizing behavioral difficulties in children, adolescents, and adults has been found (Steele & McKinney, 2019; Kruzhkova, Vorobyeva, Zhdanova, & Ljovkina, 2018). Strength of the parent-child relationship at early childhood has also been found to be a significant predictor of children's own ability to care for others (e.g., their own children, parents, etc.) when they reach adulthood (Lin & Wu, 2019), suggesting that early childhood is an ideal time to address parent-child relationship problems in order to avoid future behavioral and/or skill-related difficulties.

Sex Differences and the Parent-Child Relationship

Research has found that sons and daughters tend to form different relationships with their mothers individually, thus exposing them to different risk factors for potential internalizing and/or externalizing difficulties in the future (Steele & McKinney, 2019). Mixed results have been found in regard to how maternal parenting practices affect the parent-child relationship for both male and female children, with some findings suggesting that the behaviors of male children are more strongly affected by the quality of the mother-child relationship (Rogers & McKinney, 2019) and presence of maternal psychopathology (Franz & McKinney, 2019), while others suggest that

daughters are more likely to experience adverse mental health outcomes due to hindered child perceptions of the parent-child relationship (Steele & McKinney, 2019).

Due to the potential for perceptions of the parent-child relationship to differ among informant (e.g., parent versus child perceptions) and sex of the child (Rogers & McKinney, 2019), as well as the potential for maternal parenting practices to differ depending on the sex of the child (Steele & McKinney, 2019), it is important to take child sex differences into consideration when attempting to formulate interventions that intend to decrease internalizing and/or externalizing difficulties in children via targeting mother-child relationships.

Perceptions and Related Outcomes

Mental illness symptomatology (such as fatigue, a common symptom of several mental illnesses) can adversely impact the parent-child relationship (Gillis & Roskam, 2019), thus affecting parenting behaviors and subsequent child outcomes. Strength of the parent-child relationship has been found to be negatively correlated with childhood reactive temperament (difficult temperament), while reactive temperament has been found to be positively correlated with parent-child conflict (Acar, Torquati, Encinger, & Colgrove, 2018).

Implications for Future Research

As the formation and progression of mental illness are influenced by a wealth of confounding factors, future research should aim to study populations that are large and representative enough to allow for the disentanglement of symptoms, environmental factors, genetics (especially familial history of psychopathology), and individual developmental characteristics to determine the extent to which each factor influences the development of psychopathology (Latimer et al., 2012). Additionally, it has been recommended that future research conducted on the relationship between maternal and childhood mental illness/behavioral

health challenges focus on low socioeconomic and minority populations (Allen-Mears et al., 2010), use independent data to allow mediational claims to be tested (Burt et al., 2005), and examine the operationalization of parenting behaviors to determine harmful behaviors, as well the behaviors that serve as buffers between maternal mental illness and childhood mental illness (Goosby, 2007).

The present study aims to address each of these recommendations by utilizing empirical data collection methods that a) address low socioeconomic and minority populations, b) allow for the collection of data related to behavioral and emotional functioning of both mothers (such as through the use of the Mental Health Inventory [MHI]) and their children (such as through the use of the Preschool Pediatric Symptoms Checklist [PPSC]), and c) allow for the collection of data related to factors that affect parenting behaviors (such as through the use of the Mothers Object Relations Scales-Child [MORS-Child] and the Parenting Sense of Competence Scale [PSOC]).

As it has been found that interventions that focus on directly targeting specific characteristics (e.g., parental self-efficacy), but that also address more distal characteristics (e.g., relationship quality), elicit higher levels of effectiveness (Weber, Kamp-Becker, Christiansen, & Mingebach, 2019), the present study aims to identify any potential relationships that may be present between such variables in order to inform future interventions. It is hoped that through the use of these methods, predictive and protective factors may be identified in order to inform future research and treatment methods.

CHAPTER 3

METHODS

Research Design

The present study utilized a non-experimental design to analyze the relationships between maternal mental illness and childhood behavioral difficulties, as well as to determine whether maternal perceptions of parenting ability and of the parent-child relationship mediated the relationships between maternal mental illness and child behavioral outcomes. Data regarding gestational, post-natal, and current mental health functioning and treatment were also collected to assist with informing research findings and recommendations for future intervention. All data was collected via anonymous self-report format, with no identifying information being collected.

Participants

Biological mothers of 3- and 4-year-old children who participate in national research efforts associated with the Qualtrics participant pool were recruited via targeted email advertisement (Appendix A) to participate in the present study. A sample size of 110 mother-child dyads were obtained, with 69 mothers of 3-year-old children and 41 mothers of 4-year-old children volunteering to participate. Approximately 93% (n = 102) of the sample reported English as their primary language within the home, while approximately 7% (n = 7) reported Spanish as their primary language. Only one participant responded with "Other" when reporting the primary language spoken within their household. Table 1 summarizes the type of preschool participation by children as reported by participating mothers. Racial/ethnic identification of both mothers and their children, as well as how the present sample compares to recent U.S. poverty demographics (United States Census Bureau, 2021) is displayed in Table 2.

Table 1

Preschool Participation by Program Type

Type of Preschool Attended	N (% of Sample)
Not Currently Attending	48 (43.6%)
Head Start Program	27 (24.5%)
Public School Preschool Program	18 (16.4%)
Private Preschool Program	13 (11.8%)
Other	4 (3.6%)

Table 2

Racial/Ethnic Identification of Participants Compared to 2019 U.S. Poverty Demographics

Race/Ethnicity	# of Mothers (% of Sample)	# of Children (% of Sample)	% of Group At/Below U.S. Poverty Line
White/Caucasian	46 (41.8%)	42 (38.2%)	41.6%
Hispanic/Latino	31 (28.2%)	30 (27.3%)	28.1%
Black/African American	26 (23.6%)	29 (26.4%)	23.8%
Asian/Pacific Islander	5 (4.5%)	4 (3.6%)	4.3%
Biracial/Multiracial	2 (1.8%)	4 (3.6%)	---
Other	N/A	1 (0.9%)	2.2%

To substantiate the evaluation of how maternal mental health impacts child behavior, those who identified as a father, woman who did not give birth to their children (in the case of adoptions, foster parents, etc.), and other guardians/caretakers (e.g., grandparents, extended family members, etc.) were excluded from recruitment efforts. Prevalence of maternal mental illness

symptomatology and diagnoses, as measured via customized screening instruments (Appendix B) and reported during gestation and up to one year after giving birth, are shown in Table 3.

Table 3

Identification of Maternal Mental Illness During Gestation and Up to 1 Year Post-Birth

Type of Mental Illness Identification	During Gestation N (% of Sample)	Up to 1 Year Post-Birth N (% of Sample)	Multiple Timepoints Identified N (% of Sample)
Symptomatology	87 (79.1%)	74 (67.3%)	65 (59.1%)
Diagnoses	80 (72.7%)	76 (69.1%)	65 (59.1%)
Multiple Types Identified	74 (67.3%)	66 (60.0%)	53 (48.2%)

Procedure

The present study was conducted in conjunction with the Qualtrics data collection service associated with Texas A&M University. Study procedures were approved by the Texas A&M University Institutional Review Board in April 2021. Data collection procedures were conducted in May 2021.

Prior to study engagement, participants were screened by the Qualtrics data collection team to determine eligibility based on income level, maternal status, and racial/ethnic identification. More specifically, eligible participants were required to be at or below 100% of the U.S. Poverty Guidelines (U.S. Department of Health & Human Services, 2021; Appendix C) and were required to be the biological mother of the preschool-age child they would be referring to throughout duration of the study. Regarding racial/ethnic status, recruitment was aimed at ensuring the participant population aligned with that of recent U.S. poverty demographics: 41.6% Non-Hispanic White, 28.1% Hispanic, 23.8% Black, and 4.3% Asian (United States Census Bureau,

2021), with approximately 2.2% assumed to be of other racial/ethnic origin. Participants who met eligibility criteria were then given access to the data collection survey via email flyer distribution by the Qualtrics data collection team. All data collection procedures were completed anonymously via the Qualtrics data collection platform to ensure receipt of confidential survey responses. Each established rating scale (the MHI, PSOC, MORS, and PPSC) was transcribed verbatim into the Qualtrics data collection platform, with only minor edits to page formatting to align with Qualtrics formatting restrictions. No changes were made to instructions, narratives, items, or response selections. Informed consent procedures occurred at the beginning of the Qualtrics data collection survey (Appendix B).

Measures

Cronbach's alpha scores were calculated for each endorsed measure utilized (the MHI, PSOC, MORS-Child, and PPSC) to ensure suitable levels of internal consistency. Tavakol and Dennick (2011) designate alpha levels of .70 as the minimum threshold to classify a measure as internally consistent (as cited in Nunally & Bernstein, 1994; Bland & Altman, 1997; & DeVellis, 2003), which utilized for the present study.

History of Maternal Mental Illness

Maternal mental illness was measured via self-report of both mental illness symptomatology and receipt of psychological diagnoses, with both indicators being assessed during gestation and up to one year post-birth. Symptoms and diagnoses were quantified by prevalence via tailored screening tools to assist with determining predictive strength.

Current Maternal Mental Functioning

Following informed consent and maternal screening procedures, the Mental Health Inventory (MHI) (Veit & Ware, 1983; Appendix D) was administered to assess current maternal

mental functioning. The MHI is a self-report measure, consisting of 18 Likert scale items, that assesses the extent to which mental illness symptomatology has been experienced within the four weeks prior to completing the survey. The MHI produces a total score in addition to subscale scores for Anxiety, Depression, Behavior Control, and Positive Affect, with scores ranging from 0-100 and higher scores indicating better mental functioning. A Cronbach's alpha score of .93 has been calculated for the MHI by the original authors (National Multiple Sclerosis Society, 2021). The Cronbach's alpha for the current sample was .83. Sample items of this measure include "During the past 4 weeks how much of the time…have you been anxious or worried?…did you feel you had nothing to look forward to?"

Perceptions of Parenting Ability

Next, participants completed the Parenting Sense of Competence Scale (PSOC) (Gibaud-Wallston & Wandersman, 1978; Appendix E) to assess for maternal perceptions of parenting ability. The PSOC consists of 17 Likert scale items and is comprised of two subscales: Satisfaction and Efficacy (Researching Parents, 2021). The PSOC has been supported as a valid measure of parental self-esteem, demonstrating favorable concurrent (Johnston & Mash, 1989) and convergent (Ohan, Leung, & Johnston, 2000) validities when evaluated. The PSOC is comprised the Satisfaction and Efficacy scales, demonstrating a collective internal reliability of .79, followed by Satisfaction and Efficacy subscales obtaining alpha scores of .75 and .76, respectively (Johnston & Mash, 1989). The Cronbach's alpha for the current sample was .64, demonstrating unfavorable internal consistency. Follow-up factor analyses indicated that alpha scores would either decrease or remain consistent when each item was considered for exclusion (ranging from alpha scores of .59 to .64 depending on the item in question), suggesting that the obtained alpha of .64 is likely influenced by factors outside the control of survey content (e.g., survey length, participant size,

etc.) Sample items of this measure include “I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot”, and “Being a good mother is a reward in itself.”

Perceptions of the Parent-Child Relationship

To assess for maternal perceptions of the parent-child relationship, participants completed the Mothers Object Relations Scales-Child (MORS-Child) (The Open University, 2021; Appendix F) measure. The MORS-Child is a modification of the Mothers Object Relations Scales-Short Form (MORS-SF), with word “child” replacing the word “baby” as the change in the form. It consists of 14 Likert scale items that comprise two subscales: Warmth and Invasion. The MORS-Child has been found to exhibit good internal validity of .71 to .79 across differing populations (Oates, Gervai, Danis, Lakatos, & Davies, 2018). The Cronbach’s alpha for the present study was .76 as measured within the Warmth scale, and .82 as measured within the Invasion scale. Sample items of this measure include “My child cries for no obvious reason,” and “My child likes to please me.”

Child Behavioral Difficulties

Finally, participants completed the Preschool Pediatric Symptoms Checklist (PPSC) (Sheldrick et al., 2012; Appendix G) to assess for current levels of behavioral difficulties in their preschool-age children. The PPSC consists of 18 Likert scale items which were used to comprise a total scale score for the purpose of the present study. Sheldrick et al. (2012) determined favorable alpha scores, ranging from .88 to .92 depending on the population utilized, suggesting appropriate levels of internal consistency. Test-retest reliability was also found to yield a promising alpha score of .75 when assessed. The Cronbach’s alpha for the present study was .93. Sample items of this measure include “Does your child…Get upset if things are not done in a certain way?”, “Is your child…Aggressive,” and “Is it hard to…Keep your child on a schedule or routine?”

Analyses

Following completion of data collection, regression analyses were conducted in order to observe relationships between levels of the independent variable, degree of mental illness, and the dependent variable, behavioral difficulty in children. Analyses were performed to address suspected mediating pathways, parental perception of parenting abilities and parental perception of the parent-child relationship, that are assumed to be affected by levels of maternal mental illness and potentially associated treatment, in addition to subsequent levels of behavioral difficulty in preschool children.

CHAPTER IV

RESULTS

The present study was conducted to assess the relationship between maternal mental illness and internalizing/externalizing behavioral difficulties in preschool-age children. IBM SPSS Statistics software was used to perform all analyses. Regression analyses were conducted in order to assess the predictive capabilities of maternal mental illness identifiers on maternal perceptions and subsequent behavioral outcomes in children. Simple linear regression analyses were utilized when assessing the predictive strength of individual variables, while multiple regression analyses were performed to assess collective predictability in the presence of multiple independent variables.

Statistical assumptions of linear regression were assessed, including assumptions of normality, homoscedasticity, independence, and linearity, given standard practice guidelines and the necessity of such assurances to confirming accuracy of findings (Jupiter, 2017; Boston University School of Public Health, 2016). Assumptions of normality were assessed via Kolmogorov-Smirnov analyses and were found to be met for the Mental Health Inventory (MHI), Parenting Sense of Competence Scale (PSOC), and Mothers Object Relations Scales-Child (MORS-Child) Invasion scale, but not for the MORS-Child Warmth scale ($p<.001$) or the Preschool Pediatric Symptom Checklist ($p<.001$). Assumptions of homoscedasticity were assessed via Breusch-Pagan and Koenker tests, which confirmed that homoscedasticity assumptions had not been violated for the present measures. Assumptions related to independence were tested via Durbin-Watson analyses, resulting in findings that suggest potential violations of the independence assumption via positive autocorrelation (Durbin-Watson value = 1.89). Multicollinearity was also

deemed nonexistent, given that each inter-measure correlation measured below .80. Linearity of the data was assessed via scatterplot analysis, resulting in linearity assumptions being met.

Participant Descriptive Statistics

Approximately 79.1% (n = 87) of participants reported experiencing at least one type of mental illness symptomatology during gestation, while 72.7% (n = 80) reported that a medical professional told them they had at least one diagnosis of a mental illness during gestation. Roughly 67.3% (n = 74) of participants reported experiencing mental illness symptomatology up to one year post-birth, while 69.1% (n = 76) reported being told by a medical professional that they had at least one diagnosis of a mental illness during this time period. Further, over half of the participants reported experiencing at least one type of mental illness symptomatology in addition to being told that they had at least one diagnosis of a mental illness. Likewise, 67.3% (n = 74) experienced both symptoms and a diagnosis during gestation, 60.0% (n = 66) experienced both up to one year after giving birth, and 48.2% (n = 53) showed symptoms and had at least one diagnosis during both timepoints.

Approximately 59.1% (n = 65) of participants experienced mental illness symptomatology during gestation as well as up to one year post-birth, while 59.1% (n = 65) reported having at least one mental illness diagnosis during both timepoints. It should be noted that symptomatology and diagnoses reported across timepoints were not necessarily constant across participants, meaning that participants who reported any type of symptomatology or diagnoses during both gestational and post-birth timepoints were considered in analyses. For example, an individual would be counted if they reported experiencing anxious symptomatology during gestation, but only experiencing depressive symptomatology post-birth. Only 45.6% of participants reported

consistent symptoms across timepoints, with 40% of participants reporting consistent diagnoses across timepoints.

Maternal Mental Illness and Child Behavioral Outcomes

The first hypothesis implied that children born to mothers suffering from mental illness, either during gestation and/or up to one year after giving birth, would have higher rates of behavioral difficulties. It was also of interest to assess mother's current mental functioning, considering the proximity that such functioning has to child behavior.

Although differentiating between childhood internalizing and externalizing difficulties was of interest for the present study, measures used to assess child behavioral functioning (the Preschool Pediatric Symptoms Checklist [PPSC]) only allowed for a total score to be calculated. This score was utilized as an indicator for levels of the dependent variable as supported by the PPSC: behavioral difficulties. PPSC scores of 9 or above classify a child as being "at risk," indicating behavioral functioning that may need additional evaluation and/or support (Sheldrick et al., 2012). Intercorrelations between measured variables are identified in Table 4.

Table 4

Summary of Variable Intercorrelations

				Variable								
Variable	n	M	SD	1	2	3	4	5	6	7	8	9
1. Gestational Diagnoses	110	1.28	1.14	---								
2. Post-Birth Diagnoses	110	1.30	1.27	.61*	---							
3. Gestational Symptomatology	110	3.90	3.60	.59*	.37*	---						
4. Post-Birth Symptomatology	110	3.24	3.58	.46*	.63*	.54*	---					
5. MHI	110	52.97	15.70	-.39*	-.36*	-.35*	-.40*	---				
6. PSOC	110	65.64	9.22	-.16	-.05	-.01	.02	.39*	---			
7. MORS (Warmth)	110	30.22	4.41	-.12	-.06	-.01	.04	.11	.22*	---		
8. MORS (Invasion)	110	16.83	7.43	.19*	.05	.03	-.04	-.28*	-.48*	-.03	---	
9. PPSC	110	11.31	8.50	.28*	.18	-.02	.12	-.35*	-.35*	-.14	.58*	---

*$p<.05$

To test the predictions between prevalence of maternal mental illness symptomatology, diagnoses, treatment, and subsequent child behavioral outcomes, linear regression analyses were performed. Simple linear regression analyses were performed to assess the predictive strength of single independent variables on childhood behavioral difficulty, while multiple linear regression analyses were conducted to assess the predictive strength of concurrent independent variables on the dependent variable. Relationships were deemed statistically significant when $p<.05$, while R^2 values of .04, .25, and .64 were utilized to determine the presence of practical significance, moderate effects, and strong effects, respectively (Ferguson, 2009).

Maternal Diagnoses and Child Behavior

Maternal mental illness, as measured by receipt of diagnoses during gestation and up to one year after giving birth, was found to have mixed results regarding its predictive capability for childhood behavioral difficulties. The strength of this relationship was found to be significant ($F(2,107) = 4.70$, $p<.02$) in the case of diagnostic confirmation during gestation, versus post-birth diagnosis which was found to be non-significant ($p<.90$). As shown in Table 5, a low R^2 value ($R^2=.08$) suggests a fairly weak relationship between independent and dependent variables as only 8% of the variance within childhood behavioral difficulties can be explained by gestational/post-birth diagnosis of mental illness.

Table 5

Multiple Regression Analyses for Maternal Diagnoses to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	8.56	1.23	---	6.97	<.001*
Gestational Diagnoses	2.05	.87	.28	2.35	.02*
Post-Birth Diagnoses	.10	.78	.01	.12	.90
R^2	.08				
F	4.70				

*p<.05

Maternal Symptomatology and Child Behavior

It was found that maternal mental illness, as measured by prevalence of common mental illness symptomatology, was a non-significant predictor of childhood behavioral difficulties. Both gestational symptomatology (p<.31) and post-birth symptomatology (p<.11) were found to have low predictive strength in relation to child behavioral difficulties (see Table 6). A low R^2 value (R^2=.02) also supports the lack of strength between independent and dependent variables as only 2% of variance when assessing childhood behavioral difficulties was able to be explained by gestational and post-birth symptomatology.

Table 6

Multiple Regression Analyses for Maternal Symptomatology to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	10.96	1.23	---	8.89	<.001*
Gestational Symptomatology	-.27	.27	-.12	-1.01	.31
Post-Birth Symptomatology	.43	.27	.18	1.61	.11
R^2	.02				
F	1.32				

*p<.05

Current Maternal Mental Functioning and Child Behavior

To assess for more proximal contributors to child behavioral functioning, current maternal mental functioning was assessed via the Mental Health Inventory (MHI). Higher scores on the MHI were indicative of higher mental functioning, while higher scores on the PPSC were indicative of higher child behavioral difficulties. MHI scores were found to be a significant predictor ($F(1,108) = 14.55$, p<.001) of child behavioral difficulties, revealing a negative relationship between independent and dependent variables (see Table 7). However, a fairly low R^2 (R^2=.12) suggests that the predictive strength of current mental functioning to child behavioral difficulties is not as strong as had been expected, as only 12% of the variance observed within child behavioral difficulties is able to be contributed to current mental functioning.

Table 7

Regression Analyses for Current Maternal Mental Functioning to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	21.19	2.70	---	7.85	<.001*
Current Mental Functioning	-.19	.05	-.35	-3.81	<.001*
R^2	.12				
F	14.55				

*p<.05

Perceptions of Parenting Ability

Research Question 1. To what extent does maternal mental illness predict mothers' perceptions of her own ability to parent effectively?

The initial research question aimed to determine the extent to which maternal mental illness predicts mothers' perceptions of her own ability to parent effectively. Mother's perceptions of parenting ability were assessed via the Parenting Sense of Competency Scale (PSOC). First, regression analyses were conducted to determine the predictive strength between the independent variable, degree of maternal mental illness, and the suspected mediating variable, perceptions of parenting ability. Results revealed that current maternal mental functioning was a significant predictor of maternal perceptions of parenting ability ($F(5,104) = 5.61$, p<.001), demonstrating a positive relationship between variables, while gestational/post-birth receipt of diagnoses and gestational/post-birth mental illness symptomatology were found to all be non-significant predictors. An R^2 value of .21 indicates that approximately 21% of the variance accounted for

within the dependent variable, perceptions of parenting ability, can be collectively attributed to the independent variables measured (see Table 8).

Table 8

Regression Analyses for Maternal Mental Functioning to Perceptions of Parenting Ability

	Perceptions of Parenting Ability				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	49.35	3.83	---	12.89	<.001*
Gestational Diagnoses	-1.53	1.03	-.19	-1.48	.14
Post-Birth Diagnoses	.58	.93	.08	.63	.53
Gestational Symptomatology	.41	.31	.16	1.33	.19
Post-Birth Symptomatology	.41	.32	.16	1.26	.21
Current Mental Functioning	.28	.06	.47	4.77	<.001*
R^2	.21				
F	5.61				

*p<.05

Next, additional regression analyses were performed in order to assess for potential relationships between maternal perceptions of parenting ability and the dependent variable, child behavioral difficulties. Results indicated that maternal perceptions of parenting ability were a significant predictor of child behavioral difficulties ($F(1,108) = 15.13$, p<.001), demonstrating a negative association between variables (see Table 9). An R^2 value of .12 was obtained, indicating that approximately 12% of the variance accounted for within the dependent variable can be

attributed to perceptions of parenting ability. Figure 4 provides a visual representation of the relationships between maternal mental illness, maternal perceptions of parenting ability, and childhood behavioral difficulties.

Table 9

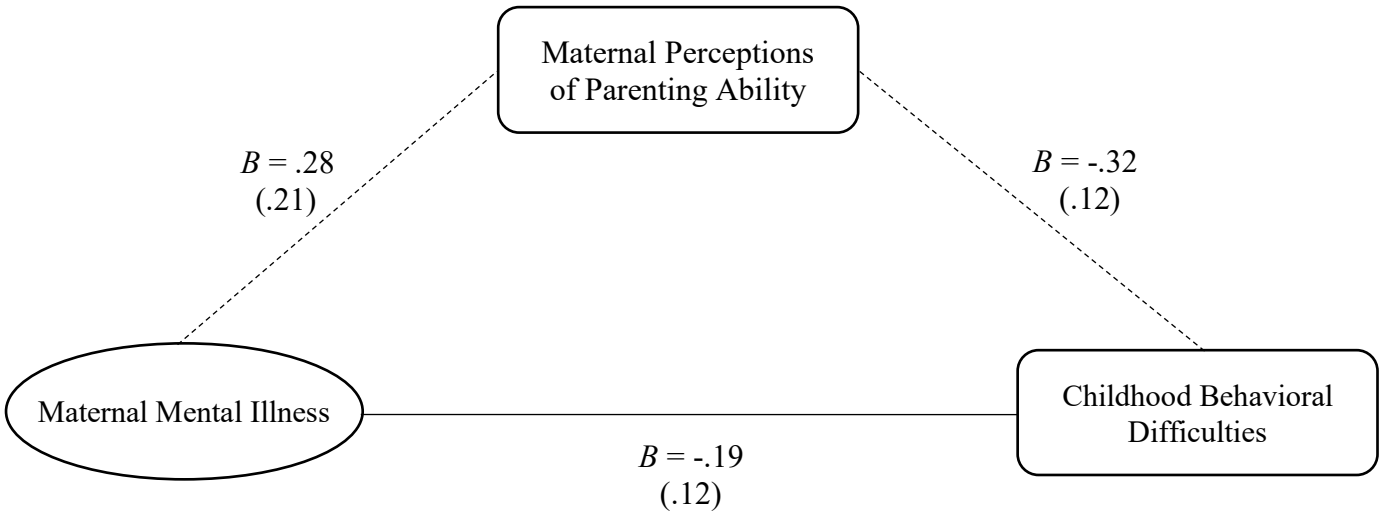
Regression Analyses for Perceptions of Parenting Ability to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	32.52	5.51	---	5.91	<.001*
Perceptions of Parenting Ability	-.32	.08	-.35	-3.90	<.001*
R^2	.12				
F	15.13				

*p<.05

Figure 4

Model Representing Perceptions of Parenting Ability as a Significant Mediating Variable Between Current Maternal Mental Functioning and Childhood Behavioral Difficulties



Note. The independent variable, maternal mental illness, represents current mental functioning as reported on the MHI. Betas are reported, while values in parentheses represent total effects.

Perceptions of the Parent-Child Relationship

Research Question 2. To what extent does maternal mental illness predict mothers' perceptions of her own relationship with her child?

The next research question aimed to determine the extent to which maternal mental illness predicts mothers' perceptions of her own relationship with her child. Hypotheses regarding mediational effects of maternal perceptions of the parent-child relationship between independent and dependent variables were tested via regression analyses. Maternal perceptions of the parent-child relationship were measured via the Mothers Object Relations Scales (MORS), with scores

from the Warmth and Invasion scales being utilized to assess separate predictive capabilities. First, the predictive strength between the independent variable, degree of maternal mental illness, and the suspected mediating variable, perceptions of the parent-child relationship, were assessed via regression analyses.

Results from analyses utilizing the Warmth scale indicated that the number of gestational/post-birth mental illness diagnoses, the number of gestational/post-birth mental illness symptoms experienced, and current levels of maternal mental functioning were all considered non-significant predictors of perceived Warmth within the parent-child relationship (see Table 10). A low R^2 value of .04 also suggests that perceptions of Warmth within the parent-child relationship are not well predicted by the independent variables considered, suggesting that only 4% of the variance within perceptions of parent-child Warmth can be attributed to the independent variables.

Table 10

Regression Analyses for Maternal Mental Functioning to Perceptions of Parent-Child Warmth

	Perceptions of Parent-Child Warmth				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	28.55	2.02	---	14.11	<.001*
Gestational Diagnoses	-.54	.55	-.14	-.99	.33
Post-Birth Diagnoses	-.17	.49	-.05	-.34	.73
Gestational Symptomatology	.06	.16	.05	.37	.72
Post-Birth Symptomatology	.19	.17	.15	1.10	.28
Current Mental Functioning	.03	.03	.12	1.08	.28
R^2	.04				
F	.80				

*p<.05

Subsequent results from analyses utilizing the Invasion scale indicated that current maternal mental functioning is a significant predictor of perceived Invasion within the parent-child relationship (F(5,104) = 3.33, p<.003), demonstrating a negative association between variables (see Table 11). The relationship between the number of mental illness diagnoses received during gestation and subsequent perceptions of parent-child Invasion approached significance (p<.051), demonstrating a positive relationship between variables. Non-significant relationships between the number of diagnoses received during the post-birth time period, as well as the number of mental illness symptoms experienced during gestation and during the post-birth time period, were also confirmed. An R^2 value of .14 indicates that approximately 14% of the variance accounted for

within the dependent variable can be collectively attributed to the independent variables considered.

Table 11

Regression Analyses for Maternal Mental Functioning to Perceptions of Parent-Child Invasion

	Perceptions of Parent-Child Invasion				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	25.20	3.22	---	7.81	<.001*
Gestational Diagnoses	1.72	.87	.26	1.97	.051
Post-Birth Diagnoses	-.41	.79	-.07	-.53	.60
Gestational Symptomatology	-.24	.26	-.12	-.94	.35
Post-Birth Symptomatology	-.37	.27	-.18	-1.36	.18
Current Mental Functioning	-.15	.05	-.32	-3.06	.003*
R^2	.14				
F	3.33				

*p<.05

Following these computations, additional regression analyses were performed in order to assess for potential relationships between maternal perceptions of the parent-child relationship, as informed by the Warmth and Invasion subscales on the MORS, and the dependent variable, child behavioral difficulties. Results indicated that perceptions of Invasion within the mother-child relationship (e.g., feeling controlled by the child, experiencing thoughts/feelings of unwelcome interference by the child, etc.) were significant predictors of child behavioral difficulties (F(2,107)

= 28.84, $p<.001$), while findings from the Warmth subscales did not yield significant results (see Table 12). An R^2 value of .35 suggests that approximately 35% of the variance accounted for within the dependent variable, child behavioral difficulties, can be collectively attributed to the independent variables seen in Table 11. Figure 5 provides a visual representation of the relationships between maternal mental illness, maternal perceptions of the parent-child relationship (specific to perceptions of Invasion), and childhood behavioral difficulties.

Table 12

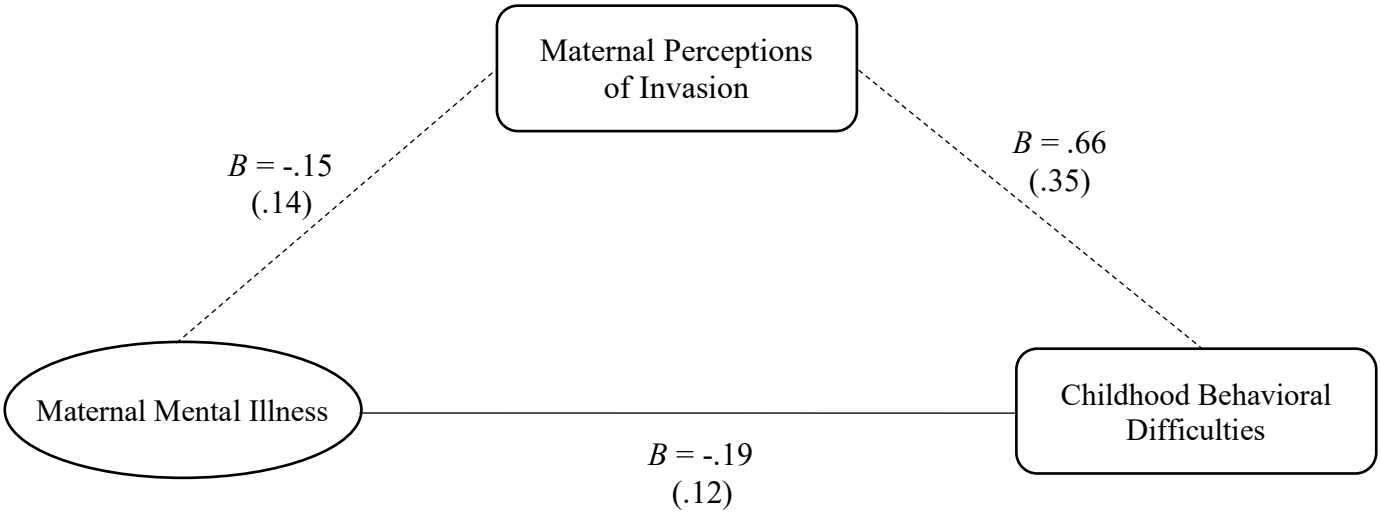
Regression Analyses for Perceptions of the Parent-Child Relationship to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	7.15	4.87	---	1.47	.15
Warmth	-.23	.15	-.12	-1.53	.13
Invasion	.66	.09	.58	7.40	<.001*
R^2	.35				
F	28.84				

*$p<.05$

Figure 5

Model Representing Perceptions of Invasion as a Significant Mediating Variable Between Current Maternal Mental Functioning and Childhood Behavioral Difficulties



Note. Figure 5 was changed from the original model (Figure 3) to reflect Invasion as a mediating variable, given that Warmth (another measure of the parent-child relationship) was deemed a non-significant predictor of child behavioral difficulties. The independent variable, maternal mental illness, represents current mental functioning as reported on the MHI. Betas are reported, while values in parentheses represent total effects.

Mediation Model

In order to inform research questions, it was of interest to determine whether maternal perceptions of parenting ability, as well as maternal perceptions of the parent-child relationship, mediated the relationship between maternal mental illness and childhood behavioral difficulties. It was hypothesized that significant mediating effects for both variables would be observed, thus

helping to explain the relationship between maternal mental illness and childhood behavioral problems.

Indirect Effects of Hypothesized Mediating Variables

Research Questions 3 & 4. To what extent is the relationship between maternal mental illness and childhood behavioral difficulties mediated by maternal perceptions of: parenting ability (Research Question 3); the parent-child relationship (Research Question 4)?

The third research question intended to examine the extent to which the relationship between maternal mental illness and childhood behavioral difficulties is mediated by maternal perceptions of parenting ability, while the fourth research question aimed to determine the extent to which it is mediated by maternal perceptions of the parent-child relationship. Mediational regression analyses were conducted to assess for the presence of significant indirect effects between maternal mental illness, mediating variables (perceptions of parenting ability and perceptions of the parent-child relationship), and subsequent child behavioral difficulties. Maternal perceptions of parenting ability were found to be a significant mediator between maternal mental illness, as measured by the MHI, and child behavioral difficulties, thus strengthening the previously identified inverse relationship (effect size = -.05). Maternal perceptions of parent-child Invasion were also found to be a significant mediator between maternal mental illness and child behavioral difficulties when maternal mental illness, assessed via the MHI, was analyzed as a predictor (effect size = -.08). Perceptions of parent-child Warmth were not determined to significantly mediate associations between independent and dependent variables.

Post-Hoc Analyses

Following investigation of research questions and hypotheses, exploratory analyses were conducted to determine whether participating in counseling and/or pharmaceutical treatment for

mental illness mediated the relationship between maternal mental illness and childhood behavioral difficulties. Analyses were only conducted to assess the relationship between treatment received and child behavior (versus also assessing for relationships between maternal mental illness and treatment received, as would typically be conducted to assess for mediation), as it is assumed that treatment would only be sought if participants were to have received a diagnosis of a mental illness and/or if they had experienced mental illness symptomatology. Results indicated that counseling treatment received for maternal mental illness, as measured by counseling received during gestation, up to one year post-birth, and during both timepoints, were non-significant predictors of the dependent variable (see Table 14). An R^2 of .04 also suggests that the relationships between gestational/post-birth counseling treatment and child behavioral difficulties is poorly explained, indicating that approximately 4% of the variance accounted for when assessing child behavioral difficulties is collectively explained by the independent variables listed in Table 14.

Table 13

Multiple Regression Analyses for Counseling Treatment to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	11.21	1.02	---	10.94	<.001*
Gestational Counseling Treatment	4.54	2.64	.22	1.72	.09
Post-Birth Counseling Treatment	-1.87	2.24	-.10	-.84	.41
Counseling Treatment at Both Timepoints	-3.46	4.11	-.13	-.84	.40
R^2	.04				
F	1.48				

*p<.05

Similar analyses were conducted to assess for potential relationships between pharmaceutical treatment for maternal mental illness (measured as being received during gestation, up to one year post-birth, and at both timepoints) and child behavioral difficulties. Findings indicate that pharmaceutical treatment received during gestation was a significant predictor of child behavioral difficulties ($F(3,106) = 4.04$, p<.003; see Table 15), although findings contradict expectations as a positive association between variables was noted, while receiving such treatment during the post-birth and combined time periods was not found to be a significant predictor. A fairly low R^2 value of .10 suggests that the predictive capability of gestational/post-birth treatment to child behavioral difficulties is fairly weak, as only 10% of the variance accounted for within the dependent variable can be collectively attributed to the independent variables seen in Table 15.

Table 14

Multiple Regression Analyses for Pharmaceutical Treatment to Child Behavior

	Child Behavioral Difficulties				
Variable	*B*	*SE B*	β	t-statistic	*p*
Constant	10.49	.99	---	10.59	<.001*
Gestational Pharmaceutical Treatment	7.60	2.47	.39	3.07	.003*
Post-Birth Pharmaceutical Treatment	-2.49	2.40	-.13	-1.04	.30
Pharmaceutical Treatment at Both Timepoints	-3.32	3.91	-.14	-.85	.40
R^2	.10				
F	4.04				

*p<.05

CHAPTER V

DISCUSSION

The present study aimed to explore relationships between maternal mental illness and subsequent behavioral difficulties in preschool-age children. It is well known that connections between maternal mental illness and childhood mental illness exist (Laletas, Goodyear, & Reupert, 2017), although contributing factors and pathways that mediate such relationships remain understudied. As research has found that perceptions of self-efficacy strongly predict coping behaviors (Bandura, 1977) as well as goal setting, strength of one's commitment to achieve their goals, and goal attainment (Bandura, 1994), it was deemed efficacious to assess maternal levels of self-efficacy as it pertains to parenting ability. Assessing maternal perceptions as they relate to the parent-child relationship was also deemed pertinent given previous findings that have found strong connections between parent-child relationship quality and subsequent internalizing and/or externalizing behavioral difficulties in children (Steele & McKinney, 2019; Kruzhkova, Vorobyeva, Zhdanova, & Ljovkina, 2018). Additionally, given evidence indicating that mental illness is more prevalent in low-income populations (McLaughlin, Costello, Leblanc, Sampson, & Kessler, 2012), it was of importance to target such populations to better inform future identification and intervention efforts.

It was hypothesized that maternal mental illness would be negatively associated with perceptions of parenting ability, that maternal mental illness would be negatively associated with perceptions of the parent-child relationship, and that significant mediating effects between maternal mental illness and childhood behavioral difficulties would be observed.

Maternal Mental Illness

A large body of research has focused on addressing relationships between maternal mental illness and child behavior. More notably, a significant portion of this research has found that maternal mental illness is often a significant predictor of child behavioral difficulties in the early developmental years (Kingston et al., 2018; Grant et al., 2000; Goosby, 2007; Gross, Shaw, Burwell, & Nagin, 2009; & WHO, 2020b), suggesting the need for continued evaluation and treatment for mothers experiencing mental illness. Findings from the present study supported a significant relationship between the number of mental illness diagnoses received during the gestational period and subsequent childhood behavioral difficulties, representing a positive relationship between variables. Findings were not significant, however, when assessing the relationship between the number of mental illness diagnoses received during the post-birth period and subsequent child behavioral difficulties, nor when relationships between maternal experience of mental illness symptomatology (either pre- or post-birth) and child behavioral difficulties were explored.

When analyzing factors expected to be more proximal predictors of current child behavior, it was found that current maternal mental functioning (as measured by the MHI) was a significant predictor of childhood behavioral difficulties. A negative relationship was noted between independent and dependent variables, suggesting that efforts to foster higher levels of present maternal mental functioning have the potential to significantly impact behavioral functioning within the preschool-age population.

Overall, findings indicate that initial expectations, that previously identified maternal mental illness and/or current mental functioning would be predictive of child behavioral outcomes, are only partially supported when assessed as independent predictors. Results indicate that the

methods utilized to determine maternal mental illness and/or functioning can be imperative to conducting accurate assessments across time periods. Additionally, findings suggest that maternal assessment and intervention efforts should utilize a comprehensive framework in order to ensure critical factors do not go overlooked, with longitudinal approaches being recommended to ensure a holistic understanding of mental functioning and expected outcomes.

Perceptions of Parenting Ability

Based on previous research indicating that perceptions of parental self-efficacy often influence parenting efforts and quality of care provided by mothers (Coleman & Karraker, 1977), it was hypothesized that perceptions of parenting ability would further explain the well-recognized relationship between maternal mental illness and behavioral difficulties in preschool-age children. Findings from the present study did not support significant relationships between levels of maternal mental illness diagnoses, received either during gestation or up to one year post-birth, and perceptions of parenting ability. Similarly, non-significant relationships were found between levels of maternal mental illness symptomatology, either experienced during gestation or up to one year post-birth, and perceptions of parenting ability. These findings suggest that although non-significant relationships were determined between variables of interest, future research may benefit from assessing relationships between maternal mental functioning and maternal perceptions of parenting ability during gestation and post-birth time periods (versus assessing current perceptions of parenting ability as compared to previous mental illness diagnoses and/or symptomatology).

When assessing for potential relationships between current maternal functioning (as measured by the MHI), perceptions of parenting ability (the suspected mediating variable, as measured by the PSOC), and childhood behavioral difficulties (as measured by the PPSC),

multiple significant pathways were identified. Significant relationships between the independent and dependent variables were identified (current maternal mental functioning and subsequent child behavioral difficulties), as were relationships between current maternal mental functioning and perceptions of parenting ability, and between perceptions of parenting ability and childhood behavioral difficulties. These findings suggest that perceived parenting ability may play a key role in facilitating the relationship between maternal mental functioning and subsequent behavioral performance in preschool-age children, making this variable an ideal target for early childhood and family-based intervention efforts.

Mediational findings indicate that perceptions of parenting ability are significant predictors of child behavioral difficulties when maternal mental functioning (as measured by the MHI) is used as a predictor. An inverse relationship has been identified, indicating that child behavioral difficulties decrease as maternal mental functioning increases.

Perceptions of the Parent-Child Relationship

Perceptions of the parent-child relationship were expected to mediate the connections between maternal mental illness and subsequent child behavioral difficulties, as previous research has supported these claims (Steele & McKinney, 2019; Kruzhkova, Vorobyeva, Zhdanova, & Ljovkina, 2018). Results from the MORS were utilized to inform maternal perceptions of the parent-child relationship, with the Warmth and Invasion scales being assessed as separate mediating variables between maternal mental illness and child behavioral difficulties.

When assessing relationships between maternal mental illness and perceptions of Warmth within the parent-child relationship, findings revealed that maternal mental illness, as measured by prevalence of mental illness diagnoses and symptomatology experienced across gestational and

post-birth timepoints, was a non-significant predictor. Similarly, current maternal mental functioning was found to be a non-significant predictor of perceived Warmth.

Consistent with findings related to perceived Warmth, perceptions of Invasion within the parent-child relationship were found to be poorly predicted by maternal mental illness, which was measured by prevalence of mental illness diagnoses and symptomatology experienced across gestational and post-birth timepoints. However, it should be noted that current maternal mental functioning was found to be a significant predictor of perceived Invasion, demonstrating a negative relationship between the two variables. As heightened perceptions of invasion may lead to rejection of maternal behavior and an at-risk relationship between mother and child (The Open University, 2021), particularly in the presence of decreased Warmth, findings suggest that greater efforts should be placed on ensuring that regular screening of maternal mental functioning and treatment for maternal mental illness is accessible. More specifically, efforts to foster greater perceptions of child management ability and external support within the maternal population should be endeavored as hindered perceptions are often subsequent to heightened perceptions of Invasion (The Open University, 2021).

Subsequent findings supported a significant predictive relationship between perceptions of the parent-child relationship, when measured via the Invasion scale, and childhood behavioral difficulties, demonstrating a negative association. In contrast, a non-significant relationship between variables was identified when levels of perceived Warmth was utilized as an independent variable.

Lastly, mediational findings indicate that perceptions of parent-child Invasion are significant predictors of child behavioral difficulties when maternal mental functioning (as

measured by the MHI) is used as a predictor. An inverse relationship has been identified, indicating that child behavioral difficulties decrease as maternal mental functioning increases.

Treatment for Maternal Mental Illness

Upon conducting exploratory analyses to determine whether participating in counseling and/or pharmaceutical treatment for mental illness predicted childhood behavioral difficulties, mixed results were found. When assessing for predictive effects of participating in counseling treatment, as measured by counseling received during gestation, up to one year post-birth, and during both timepoints, no significant relationships were found. These findings are not surprising given that previous analyses had identified poor relationships between maternal mental illness and subsequent child behavioral difficulties (with the exception of gestational diagnoses, a significant relationship found to contain substantial variation).

Pharmaceutical treatment received during gestation was found to be a significant predictor of child behavioral difficulties. However, it is important to note that these findings contradicted expectations as a positive relationship between variables was noted, suggesting that receiving pharmaceutical treatment for mental illness during gestation is associated with higher rates of behavioral difficulty in preschool-age children. These findings are currently unable to be explained, suggesting that future research may benefit from gathering additional information (e.g., type of pharmaceutical prescribed, duration of treatment, etc.) to help verify or refute present findings. Receiving pharmaceutical treatment for maternal mental illness, as measured during the post-birth and combined time periods, was not found to be a significant predictor of child behavioral difficulties.

These findings align with general trends noted throughout the present study, such as that current maternal functioning has been identified as a much larger predictor of maternal perceptions

of parenting ability, maternal perceptions of the parent-child relationship, and of child behavioral functioning. Future research is likely to benefit from assessing participation in current treatment for mental illness, as findings from the present study suggest that participation in counseling and/or pharmaceutical treatment during gestation and/or up to one year post-birth are likely to be poor predictors of current behavioral functioning within the preschool population. It should also be noted that the present study did not assess for predictive relationships between maternal mental illness and treatment received, as it was assumed that treatment would only be sought in cases of mental illness diagnosis and/or experience of symptomatology, meaning that the presence of a mediational relationship was not truly ascertained.

Limitations

One of the greatest limitations is likely the convenience sample utilized. Although efforts were made to diversify the sample recruited, such as by trying to align racial/ethnic demographics with that of recent U.S. poverty demographics, and to ensure high-risk families were the focus of investigation, such as by utilizing survey items that screened out families living above the poverty line, the sample is ultimately skewed as recruitment efforts were only aimed at individuals who already participate in the Qualtrics data collection pool. Additionally, although it was necessary to screen out participants who were not biological mothers of their preschool age-children, it is believed that findings would be more generalizable if future studies broadened their participant pool to include a more diverse range of parenting figures (e.g., fathers, foster/adoptive parents, etc.) High rates of mental illness were also identified in the current sample, which is believed to be influenced by recent societal stressors (e.g., COVID-19) and, thus, needs to be taken into consideration when attempting to generalize the present findings as time progresses. These rates are also expected to be influenced by the poverty status, which future studies should address by

using income level as a separate predictor for maternal mental illness, aforementioned mediating variables, and subsequent child behavioral difficulties.

Additional limitations were present when selecting measures for data collection, such as being constrained by funding restrictions, the necessity to utilize measures that were readily available, and psychometric properties of particular measures being reported by their own creators. Despite these limitations, no evidence was found to suggest any measures were not appropriate for measuring variables of interest.

Caution should also be utilized when assessing and analyzing variables related to diagnostic receipt, as it is possible that information may be omitted upon a patient being diagnosed (Zolkefli, 2018). Although less likely to occur as time progresses, factors including (but not limited to) time constraints during appointments, miscommunication and/or the use of medical/psychological jargon by the provider, and assumptions made by the provider and/or patient (e.g., a provider assuming the patient knows they have been diagnosed with generalized anxiety disorder because they were prescribed medication to treat anxious symptomatology, a patient believing they no longer have a diagnosis of depression as their symptoms have shown significant improvement, etc.) may ultimately lead to a patient leaving under incorrect assumptions regarding their status.

Implications for Future Practice

Outcomes from the present study supported previous research findings that have identified connections between maternal mental illness and child behavioral difficulties. However, results only supported predictive relationships between maternal mental illness and child behavioral difficulties when gestational receipt of mental illness diagnoses and current maternal mental functioning were analyzed as separate predictors. These findings suggest that future research

efforts may benefit from addressing maternal mental functioning and perceived difficulties related to child behavior as continuous variables, such as by utilizing a longitudinal approach beginning in infanthood, in order to gain a greater understanding of the relationship between gestational functioning and later functioning as the mother of a preschool-age child.

As the present study found supporting evidence to suggest that maternal perceptions of parenting ability and of the parent-child relationship (specifically related to feelings of Invasion) are both predicted by current maternal mental functioning as well as predictive of child behavioral outcomes, it is recommended that future research endeavors and intervention efforts aim to address these constructs. More information is needed to determine best methods for facilitating greater perceptions of parenting ability and of the parent-child relationship in order for future maternal, child, and family-centered intervention efforts to be successful.

Focusing efforts on improving perceptions of parenting ability is expected to be beneficial, particularly when treating mental illness and/or child behavioral difficulties is not feasible, as increased perceptions of parenting ability may act as a buffer, thus reducing the likelihood that child behavioral difficulties occur (in the case of preventative efforts) or worsen (in the case of intervention efforts). Additionally, it is anticipated that efforts to promote greater perceptions of community support, particularly when working with mothers who suffer from mental illness (thus, likely to experience decreased mental functioning), may help to reduce perceptions of parent-child invasion and subsequent child behavioral difficulties. Additionally, it is expected that focusing intervention efforts on increasing child independence via parent-focused services (e.g., parent training, family therapy, community partnerships, etc.) will decrease feelings of parent-child invasion as decreased child dependence is likely to facilitate decreased maternal stress. Research and intervention efforts aimed at normalizing perceptions of parent-child invasion are also

recommended as these feelings are often shamed (similar to perceived parenting ability), and thus untreated. Increasing the availability and normalcy of mental health services should be a focus of future projects, given that individuals in need of the most support are likely to experience significant fears of seeking treatment or disclosing their parenting-related difficulties due to feelings of shame and anticipated judgement.

When assessing for relationships between treatment received for mental illness and child behavioral difficulties, exploratory analyses were only able to identify pharmaceutical treatment for mental illness received during gestation and as a significant predictor. An unexpected positive relationship between pharmaceutical treatment and childhood behavioral difficulties was identified, yet unable to be explained, indicating that future research efforts may benefit from examining factors that contribute to treatment seeking, efficacy, and subsequent outcomes across critical developmental periods for both mothers and their children.

Conclusions

The purpose of the present study was to assess for the presence of factors that mediate the relationship between maternal mental illness and child behavioral difficulties, a relationship consistently identified in previous literature (Kingston et al., 2018; Grant et al., 2000; Goosby, 2007; Gross, Shaw, Burwell, & Nagin, 2009; & WHO, 2020b), in order to further inform future research and intervention efforts. Taken together, findings indicated that hypotheses were only partially supported. Current maternal mental functioning was found to be a significant predictor of child behavioral difficulties, as well as perceptions of parenting ability and perceptions of the parent-child relationship (specifically related to feelings of invasion within the relationship). Subsequently, these variables were found to be significant predictors of childhood behavioral difficulties. Predictive relationships between maternal mental illness, as measured by the

prevalence of mental illness diagnoses received and symptomatology experienced during gestation and up to one year post-birth, and child behavioral difficulties were largely unsupported, with the exception of diagnostic receipt during gestation. Both perceptions of parenting ability and of invasion within the parent-child relationship were identified as significant mediators within the relationship between maternal mental illness and child behavioral difficulties, with negative associations demonstrating decreases in child behavior difficulties accompanying increases in maternal mental functioning.

The present findings have informed recommendations that suggest further endeavors to gather additional data surrounding the identification and treatment of maternal mental illness, address wide-ranging populations, and implement longitudinal frameworks during research efforts, are likely to be beneficial for informing intervention efforts within the family and early childhood arenas. Although a number of suspected predictors to childhood behavioral difficulties were unfounded when addressed by the present study, continued research to address the specifics of these variables is likely to prove useful. Additionally, as maternal perceptions of parenting ability and of invasion within the parent-child relationship were found to be significant mediators between maternal mental functioning and child behavioral difficulties, future research and intervention efforts are likely to benefit from addressing these constructs.

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APPENDIX A

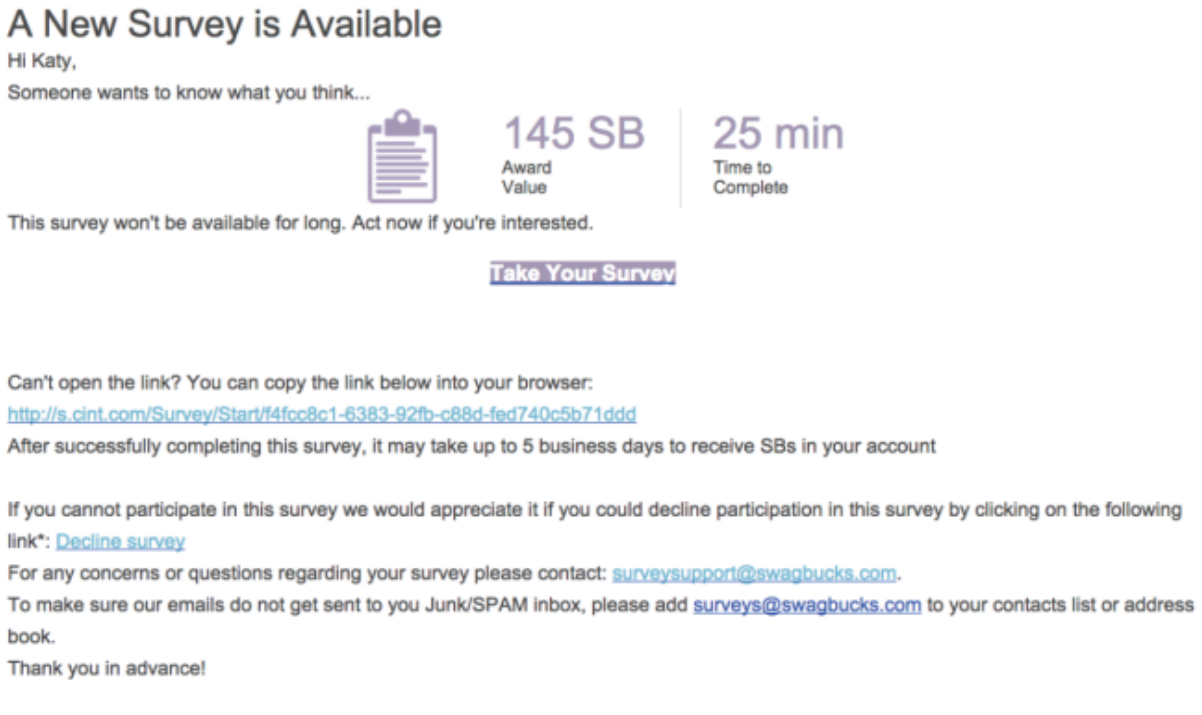
Sample Participant Recruitment Flyer

HOW ARE PARTICIPANTS INVITED TO PARTICIPATE IN A SURVEY?

Panel members are sent an email invitation or prompted on the respective survey platform to proceed with a given survey.

The typical survey invitation is generally very simple and generic. It provides a hyperlink which will take the respondent to the survey as well as mention the incentive offered.

WHAT DOES A TYPICAL EMAIL INVITATION TO A SURVEY LOOK LIKE?



A New Survey is Available

Hi Katy,

Someone wants to know what you think...

145 SB
Award Value

25 min
Time to Complete

This survey won't be available for long. Act now if you're interested.

Take Your Survey

Can't open the link? You can copy the link below into your browser:
http://s.cint.com/Survey/Start/f4fcc8c1-6383-92fb-c88d-fed740c5b71ddd
After successfully completing this survey, it may take up to 5 business days to receive SBs in your account

If you cannot participate in this survey we would appreciate it if you could decline participation in this survey by clicking on the following link*: Decline survey
For any concerns or questions regarding your survey please contact: surveysupport@swagbucks.com.
To make sure our emails do not get sent to you Junk/SPAM inbox, please add surveys@swagbucks.com to your contacts list or address book.
Thank you in advance!

APPENDIX B

Introduction/Consent Form

Introduction
The purpose of this form is to give you information that may affect your decision as to whether or not to participate in this research study. The purpose of this study is to learn more about factors that may affect preschooler behaviors. We hope to learn more about typical preschool behaviors, as well as how mothers and their children interact. You have received this survey because you are the parent of a child who is currently in a preschool program.

What will I be asked to do?
If you agree to participate, you will be asked to complete a history form and to provide information about your child's behavior and your relationship with your child on various rating scales. On these rating forms, you will be asked to indicate the rate of specific behaviors and feelings by you and your child. This is estimated to take 25 to 40 minutes, and you can complete the forms at your leisure.

What are the risks involved in this study?
The risks in this study are minimal and are not greater than risks ordinarily met in daily life. The major risk would be one to your privacy, which is why identifying information (e.g., names) will not be collected. Any results will be reported as group data, not for any individual. Additionally, minor discomfort may occur, as questions about mental illness, parenting, parent-child relationships, and child behavior will be asked.

What are the possible benefits of this study?
There is no direct benefit from participating in this study. It is hoped that the results will inform educational practices within preschool programs.

Do I have to participate?
No. Your participation is voluntary. You may choose not to participate or to withdraw at any time without affecting your relations with Texas A&M University (TAMU) or the researchers or any other agency.

Will I be paid?
Compensation agreements/arrangements will be made via direct communication with the Qualtrics team. Any questions regarding compensation should be directed to a Qualtrics representative.

Who will know about my participation in this study?
The records of this study will be kept private; only the researchers involved in the study will see the data that is collected unless otherwise indicated by law. The Institutional Review Board (IRB) at TAMU can access all the materials for the purpose of auditing the study. Research records will be stored securely, and any results will be reported for the group and not for individuals. Researchers will have no way to connect your name to your responses.

Is there anything else I should consider?
Sometimes in the process of completing the rating forms, people have questions and become anxious. If you want to talk to a counselor about any concerns or issues you may think of as a result of being in the study, please contact your local mental health facility. National resources include:

- National Suicide Prevention Lifeline……1-800-273-8255
- Substance Abuse & Mental Health Services Administration Helpline……1-800-662-4357
- Crisis Text Line……Text HELLO to 741741

Whom do I contact with questions?
If you have questions about this study, you may contact Samantha Meek (smeek@tamu.edu) or Dr. Krystal Simmons, (979-845-3447; ktcook@tamu.edu).

Whom do I contact about my rights as a participant?
This research study has been reviewed by the Human Subjects' Protection Program and/or the IRB at Texas A&M University. For questions about your rights as a research participant, to provide input regarding research, or if you have questions, complaints, or concerns about the research, you may call the Texas A&M University

Human Research Protection Program office by phone at 1-979-458-4067, toll free at 1-855-795-8636, or by email at irb@tamu.edu.

Signature
Please be sure you have read the above information, asked questions and received answers to your satisfaction. Please keep a copy of this consent form for your records. By checking the "Yes, I agree to participate in this study" box below, you are acknowledging that you are at least 18 years of age and that you consent to participate in this study.

- ◯ Yes, I agree to participate in this study
- ◯ No, I do not wish to participate in this study

Please select your gender

- ◯ Female
- ◯ Male
- ◯ Other
- ◯ Prefer not to respond

Do you have a biological child between the ages of 3 and 4 years old?

- ◯ Yes
- ◯ No

Please select your child's age:

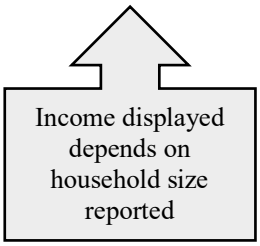
- ◯ 3 years old
- ◯ 4 years old

Please indicate the number of people who live in your household

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8
- ◯ 9
- ◯ 10
- ◯ 11
- ◯ 12
- ◯ 13
- ◯ 14
- ◯ 15

Is your combined household income less than or equal to $12,880 per year?

- ◯ Yes
- ◯ No



Please answer the questions as best you can. All answers will remain anonymous.

Mother's Information:

Are you the biological mother of the child you will be referring to throughout the duration of this survey? (check one):

- ◯ Yes
- ◯ No

What language do you speak the most at home? (check one):

- ◯ English
- ◯ Spanish
- ◯ Other

Race of **mother**. (check one):

- ◯ Black/African American
- ◯ White/Caucasian
- ◯ Hispanic/Latino
- ◯ Asian/Pacific Islander
- ◯ Native American/Alaskan Native
- ◯ Biracial or Multiracial

Child's Information:

My child attends a (check one):

- ◯ Head Start Program
- ◯ Private Preschool Program
- ◯ Public School Preschool Program
- ◯ My child does not attend school at this time
- ◯ Other

Gender of child you will be referring to throughout the duration of this survey (check one):

- ◯ Male
- ◯ Female

Race of **child** you will be referring to throughout the duration of this survey (check one):

- ◯ Black/African American
- ◯ White/Caucasian
- ◯ Hispanic/Latino
- ◯ Asian/Pacific Islander
- ◯ Native American/Alaskan Native
- ◯ Biracial or Multiracial

Were you told by a medical professional that you had any of these conditions during the following times? (Please check all that apply)

	During Pregnancy	Up to 1 Year After Giving Birth
Depression	☐	☐
Anxiety	☐	☐
ADHD	☐	☐
Bipolar	☐	☐
Personality Disorder	☐	☐
Other	☐	☐

Did you have any of these symptoms during the following times? (Please check all that apply)

	During Pregnancy	Up to 1 Year After Giving Birth
Sadness	☐	☐
Loss of interest	☐	☐
Sleep problems	☐	☐
Mood swings	☐	☐
Difficulty concentrating	☐	☐
Difficulty staying still	☐	☐
Feeling easily upset	☐	☐
Disorganization	☐	☐
Memory problems	☐	☐
Relationship problems	☐	☐

Did you receive any of these treatments/services during the following times? (Please check all that apply)

	During Pregnancy	Up to 1 Year After Giving Birth
Medication	☐	☐
Counseling	☐	☐
I did not receive treatment during this time	☐	☐

MENTAL HEALTH INVENTORY (MHI)

The next set of questions are about how you feel, and how things have been for you during the past 4 weeks. If you are marking your own answers, please circle the appropriate response (0, 1, 2,...). If you need help in marking your responses, tell the interviewer the number of the best response. Please answer every question. If you are not sure which answer to select, please choose the one answer that comes closest to describing you. The interviewer can explain any words or phrases that you do not understand.

During the past 4 weeks, how much of the time...

	All of the time 1	Most of the time 2	A good bit of the time 3	Some of the time 4	A little bit of the time 5	None of the time 6
1. has your daily life been full of things that were interesting to you?	○	○	○	○	○	○
2. did you feel depressed?	○	○	○	○	○	○
3. have you felt loved and wanted?	○	○	○	○	○	○
4. have you been a very nervous person?	○	○	○	○	○	○
5. have you been in firm control of your behavior, thoughts, emotions, feelings?	○	○	○	○	○	○
6. have you felt tense or high-strung?	○	○	○	○	○	○
7. have you felt calm and peaceful?	○	○	○	○	○	○
8. have you felt emotionally stable?	○	○	○	○	○	○
9. have you felt downhearted and blue?	○	○	○	○	○	○
10. were you able to relax without difficulty?	○	○	○	○	○	○
11. have you felt restless, fidgety, or impatient?	○	○	○	○	○	○
12. have you been moody, or brooded about things?	○	○	○	○	○	○
13. have you felt cheerful, light-hearted?	○	○	○	○	○	○
14. have you been in low or very low spirits?	○	○	○	○	○	○
15. were you a happy person?	○	○	○	○	○	○
16. did you feel you had nothing to look forward to?	○	○	○	○	○	○
17. have you felt so down in the dumps that nothing could cheer you up?	○	○	○	○	○	○
18. have you been anxious or worried?	○	○	○	○	○	○

Parenting Sense of Competence Scale
(Gibaud-Sallston & Wandersman, 1978)

Please rate the extent to which you agree or disagree with each of the following statements.

	Strongly Disagree 1	Disagree 2	Somewhat Disagree 3	Somewhat Agree 4	Agree 5	Strongly Agree 6
1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.	○	○	○	○	○	○
2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age.	○	○	○	○	○	○
3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot.	○	○	○	○	○	○
4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	○	○	○	○	○	○
5. My mother was better prepared to be a good mother than I am.	○	○	○	○	○	○
6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent.	○	○	○	○	○	○
7. Being a parent is manageable, and any problems are easily solved.	○	○	○	○	○	○
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	○	○	○	○	○	○
9. Sometimes I feel like I'm not getting anything done.	○	○	○	○	○	○
10. I meet by own personal expectations for expertise in caring for my child.	○	○	○	○	○	○
11. If anyone can find the answer to what is troubling my child, I am the one.	○	○	○	○	○	○
12. My talents and interests are in other areas, not being a parent.	○	○	○	○	○	○
13. Considering how long I've been a mother, I feel thoroughly familiar with this role.	○	○	○	○	○	○
14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent.	○	○	○	○	○	○
15. I honestly believe I have all the skills necessary to be a good mother to my child.	○	○	○	○	○	○
16. Being a parent makes me tense and anxious.	○	○	○	○	○	○
17. Being a good mother is a reward in itself.	○	○	○	○	○	○

Mothers Object Relations Scales

My Child:

Please underline one choice for each of the questions below. There are no 'right' or 'wrong' answers; many of these are true of all children at times.

1. My child smiles at me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

2. My child annoys me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

3. My child likes doing things with me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

4. My child talks to me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

5. My child irritates me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

6. My child likes me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

7. My child wants too much attention -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

8. My child laughs -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

9. My child gets moody -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

10. My child dominates me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

11. My child likes to please me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

12. My child cries for no obvious reason

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

13. My child is affectionate towards me -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

14. My child winds me up -

- ◯ 5 Always
- ◯ 4 Very often
- ◯ 3 Quite often
- ◯ 2 Sometimes
- ◯ 1 Rarely
- ◯ 0 Never

PRESCHOOL PEDIATRIC SYMPTOM CHECKLIST (PPSC)

These questions are about your child's behavior. Think about what you would expect of other children the same age, and tell us how much each statement applies to your child.

Does your child...

	Not at all 0	Somewhat 1	Very Much 2
Seem nervous or afraid?	○	○	○
Seem sad or unhappy?	○	○	○
Get upset if things are not done in a certain way?	○	○	○
Have a hard time with change?	○	○	○
Have trouble playing with other children?	○	○	○
Break things on purpose?	○	○	○
Fight with other children?	○	○	○
Have trouble paying attention?	○	○	○
Have a hard time calming down?	○	○	○
Have trouble staying with one activity?	○	○	○

Is your child...

	Not at all 0	Somewhat 1	Very Much 2
Aggressive?	○	○	○
Fidgety or unable to sit still?	○	○	○
Angry?	○	○	○

Is it hard to...

	Not at all 0	Somewhat 1	Very Much 2
Take your child out in public?	○	○	○
Comfort your child?	○	○	○
Know what your child needs?	○	○	○
Keep your child on a schedule or routine?	○	○	○
Get your child to obey you?	○	○	○

APPENDIX C

2021 United States Poverty Guidelines

2021 POVERTY GUIDELINES FOR THE 48 CONTIGUOUS STATES AND THE DISTRICT OF COLUMBIA

PERSONS IN FAMILY/HOUSEHOLD	POVERTY GUIDELINE
1	$12,880
2	$17,420
3	$21,960
4	$26,500
5	$31,040
6	$35,580
7	$40,120
8	$44,660
For families/households with more than 8 persons, add $4,540 for each additional person.	

2021 POVERTY GUIDELINES FOR ALASKA

PERSONS IN FAMILY/HOUSEHOLD	POVERTY GUIDELINE
1	$16,090
2	$21,770
3	$27,450
4	$33,130
5	$38,810
6	$44,490
7	$50,170
8	$55,850
For families/households with more than 8 persons, add $5,680 for each additional person.	

2021 POVERTY GUIDELINES FOR HAWAII

PERSONS IN FAMILY/HOUSEHOLD	POVERTY GUIDELINE
1	$14,820
2	$20,040
3	$25,260
4	$30,480
5	$35,700
6	$40,920
7	$46,140
8	$51,360
For families/households with more than 8 persons, add $5,220 for each additional person	

APPENDIX D

Mental Health Inventory (MHI)

MHI-1

Patient's Name: _____ **Date:** ____/____/____
F M L month day year

ID#: _____ **Test#:** 1 2 3 4

MENTAL HEALTH INVENTORY (MHI)

The next set of questions are about how you feel, and how things have been for you during the past 4 weeks. If you are marking your own answers, please circle the appropriate response (0, 1, 2,...). If you need help in marking your responses, tell the interviewer the number of the best response. Please answer every question. If you are not sure which answer to select, please choose the one answer that comes closest to describing you. The interviewer can explain any words or phrases that you do not understand.

During the past 4 weeks, how much of the time...

	All of the time	Most of the time	A good bit of the time	Some of the time	A little bit of the time	None of the time
1. has your daily life been full of things that were interesting to you?	1	2	3	4	5	6
2. did you feel depressed?	1	2	3	4	5	6
3. have you felt loved and wanted?	1	2	3	4	5	6
4. have you been a very nervous person?	1	2	3	4	5	6
5. have you been in firm control of your behavior, thoughts, emotions, feelings?	1	2	3	4	5	6

During the past 4 weeks, how much of the time...

	All of the time	Most of the time	A good bit of the time	Some of the time	A little bit of the time	None of the time
6. have you felt tense or high-strung?	1	2	3	4	5	6
7. have you felt calm and peaceful?	1	2	3	4	5	6
8. have you felt emotionally stable?	1	2	3	4	5	6
9. have you felt downhearted and blue?	1	2	3	4	5	6
10. were you able to relax without difficulty?	1	2	3	4	5	6
11. have you felt restless, fidgety, or impatient?	1	2	3	4	5	6
12. have you been moody, or brooded about things?	1	2	3	4	5	6
13. have you felt cheerful, light-hearted?	1	2	3	4	5	6
14. have you been in low or very low spirits?	1	2	3	4	5	6
15. were you a happy person?	1	2	3	4	5	6

During the past 4 weeks, how much of the time...

	All of the time	Most of the time	A good bit of the time	Some of the time	A little bit of the time	None of the time
16. did you feel you had nothing to look forward to?	1	2	3	4	5	6
17. have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
18. have you been anxious or worried?	1	2	3	4	5	6

APPENDIX E

Parenting Sense of Competence Scale (PSOC)

Parenting Sense of Competence Scale

(Gibaud-Wallston & Wandersman, 1978)

Please rate the extent to which you agree or disagree with each of the following statements.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired. 1 2 3 4 5 6

2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age. 1 2 3 4 5 6

3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot. 1 2 3 4 5 6

4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. 1 2 3 4 5 6

5. My mother was better prepared to be a good mother than I am. 1 2 3 4 5 6

6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent. 1 2 3 4 5 6

7. Being a parent is manageable, and any problems are easily solved. 1 2 3 4 5 6

8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. 1 2 3 4 5 6

9. Sometimes I feel like I'm not getting anything done. 1 2 3 4 5 6

10. I meet by own personal expectations for expertise in caring for my child. 1 2 3 4 5 6

11. If anyone can find the answer to what is troubling my child, I am the one. 1 2 3 4 5 6

12. My talents and interests are in other areas, not being a parent. 1 2 3 4 5 6

13. Considering how long I've been a mother, I feel thoroughly familiar with this role. 1 2 3 4 5 6

14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent. 1 2 3 4 5 6

15. I honestly believe I have all the skills necessary to be a good mother to my child. 1 2 3 4 5 6

16. Being a parent makes me tense and anxious. 1 2 3 4 5 6

17. Being a good mother is a reward in itself. 1 2 3 4 5 6

APPENDIX F

Mothers Object Relations Scales – Child (MORS-Child)

My Child:

Please underline one choice for each of the questions below. There are no 'right' or 'wrong' answers; many of these are true of all children at times.

1. My child smiles at me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

2. My child annoys me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

3. My child likes doing things with me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

4. My child talks to me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

5. My child irritates me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

6. My child likes me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

7. My child wants too much attention -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

8. My child laughs -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

9 My child gets moody -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

10. My child dominates me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

11. My child likes to please me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

12. My child cries for no obvious reason -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

13. My child is affectionate towards me -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

14. My child winds me up -

5 Always
4 Very often
3 Quite often
2 Sometimes
1 Rarely
0 Never

TEXAS A&M UNIVERSITY

Samantha Meek <smeek@tamu.edu>

using MORS in your research

1 message

John.Oates <john.oates@open.ac.uk> Fri, Sep 25, 2020 at 3:16 AM
To: "SMeek@tamu.edu" <SMeek@tamu.edu>

Dear Samantha,

Thank you for your message on the MORS website.

Yes, certainly, I would be happy for you to use MORS in your research, and I think it would be fine to administer it using Qualtrics. Please though keep the response items identical. Depending on your sample size, it would be of interest to analyse the MORS data to see if it performs in a similar way psychometrically to a paper version.

Please also keep in touch as your research proceeds.

Where are you based?

John

The Open University

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Tel: +44 (0) 1908 652395 john.oates@open.ac.uk

APPENDIX G

Preschool Pediatric Symptoms Checklist (PPSC)

PPSC:

18 months, 0 days to 65 months, 31 days

V1.07, 4/1/17

Child's Name:

Birth Date:

Today's Date:

PRESCHOOL PEDIATRIC SYMPTOM CHECKLIST (PPSC)

These questions are about your child's behavior. Think about what you would expect of other children the same age, and tell us how much each statement applies to your child.

		Not at all	Somewhat	Very Much
Does your child...	Seem nervous or afraid?	0	1	2
	Seem sad or unhappy?	0	1	2
	Get upset if things are not done in a certain way?	0	1	2
	Have a hard time with change?	0	1	2
	Have trouble playing with other children?	0	1	2
	Break things on purpose?	0	1	2
	Fight with other children?	0	1	2
	Have trouble paying attention?	0	1	2
	Have a hard time calming down?	0	1	2
	Have trouble staying with one activity?	0	1	2
Is your child...	Aggressive?	0	1	2
	Fidgety or unable to sit still?	0	1	2
	Angry?	0	1	2
Is it hard to...	Take your child out in public?	0	1	2
	Comfort your child?	0	1	2
	Know what your child needs?	0	1	2
	Keep your child on a schedule or routine?	0	1	2
	Get your child to obey you?	0	1	2

Floating Hospital for Children at Tufts Medical Center