Maternal Self-Care, Attachment Style, and Observed Parenting in a Preschool Sample with Autism Spectrum Disorder

Michal L. Johnson

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ABSTRACT

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Michal L. Johnson

Background. Mothers of children with Autism Spectrum Disorder (ASD) report high levels of stress, depression, marital strain, and divorce, with little time to devote to their own self-care due to the high demands of their child’s care. Despite their well-documented levels of stress and the relationship of stress to negative parenting, there are few observational studies of parenting in this population. Thus, it is critical to examine factors influencing maternal wellbeing and quality of parenting. Two factors to explore include 1) parental use of self-care, as self-care is related to reduced stress and better health and functioning of individuals and is easily modifiable and 2) attachment style, which, while being less modifiable, influences the degree to which an individual engages in self-care and the quality of relationships which are modifiable, including parent-child interactions.

Methods. Participants were 42 mother-child dyads, with children ages 2-6 to 5-6 recruited from a preschool utilizing an Applied Behavior Analysis (ABA) approach to schooling. Children had a classification of ASD, verified by the Autism Diagnostic Observation System – Two (ADOS--2) (Lord, Rutter, DiLavore, Risi, Gotham, & Bishop, 2012). Parenting behaviors were observed across three tasks designed to mirror naturalistic mother-child interactions, which were videotaped for later coding using the Psychological Multifactor Care Scale — ASD Adapted Preschool Version (Brassard, Donnelly, Hart, & Johnson, 2016). Mothers completed questionnaires assessing demographic variables, parenting stress with the Parenting Stress Index – Fourth Edition, Short Form (Abidin, 2012), attachment style with the Experience in Close Relationships – Short Form (Wei, Russell, Mallinckrodt, & Vogel, 2007), depression with the
Patient Health Questionnaire – 9 (Kroenke, Spitzer, & Williams, 2001), and self-care with items adapted from the *Promise Neighborhoods RFA Indicators and the Promise Neighborhoods Research Consortium [PNRC] Measurement System; Promise Neighborhoods Research Consortium: Measures, 2001* concerning exercise, diet, smoking, overweight, and sleep.

**Results.** Mothers in this sample engaged in high levels of positive and infrequent and mild levels of negative parenting. Those who did engage in negative parenting reported higher levels of stress and higher anxious and avoidant attachment. Multiple regression analysis using conditional process analysis (Hayes, 2018) found significant indirect effects of self-care on quality of parenting for both positive ($r^2 = .61$) and harsh ($r^2 = .18$) observed parenting, when mediated by parental stress. Individuals with a high degree of self-care demonstrated less stress which related to more positive, less harsh parenting. When depressive symptoms were included as a mediator in a casual model the impact of depression was significant. Self-care was significantly related to quality of parenting for both positive and harsh parenting in a mediational model with higher levels of self-care relating to lower levels of maternal depressive symptoms, which related to lower levels of parental stress, which related to more instances of positive parenting ($r^2 = .64$) and fewer instances of harsh parenting ($r^2 = .24$).

Anxious attachment was significantly related to self-care with avoidant attachment as a moderator, explaining 56% of the variance. Anxious attachment related to both positive and harsh parenting directly and indirectly through self-care and stress. Avoidant attachment was not significantly related to quality of parenting, although it interacted significantly with anxious attachment in a model of attachment style, self-care, stress, and quality of parenting. Anxious and avoidant attachment style on self-care showed mothers who were preoccupied (high anxiety/low avoidance) demonstrated the most self-care, followed by secure (low anxiety/low avoidance), dismissing (low anxiety/high avoidance), with fearful parents (high anxiety, high
avoidance) demonstrating the least self-care. Regression models controlled parental race (White, Hispanic), household income, number of children in the home, and the number of adults in the home, a proxy for caregiving support, determined by the dependent variable.

   Observed parenting behaviors were found to be skewed with most mothers using high levels of positive parenting behaviors and low levels of harsh parenting behaviors. Mothers in this sample reported higher levels of stress (20.5% above the cutoff) and maternal depressive symptoms (10% above the cutoff vs. 7% above the cutoff) compared to normative samples, consistent with the literature on parents of children with ASD.

   Conclusions. Parent’s use of self-care is a modifiable variable related to reduced stress and depression, and better quality of parenting. Attachment is related to the amount of self-care a mother engages in as well as quality of parenting indicating that a mother’s attachment style should be considered in designing interventions.
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SELF-CARE, ATTACHMENT STYLE AND OBSERVED PARENTING OF ASD

Introduction

Parenting children in the early childhood years presents a myriad of challenges. Preschool years are a time of significant growth for children because they begin to increase mobility, test limits, push boundaries, and begin formal education. Combined, these factors can lead to increased levels of stress in parents due the child’s demand for a higher level of attention. These burdens are felt heavily by those with a preschool aged child who has a disability since these children require more time devoted to their care, more financial resources, and more parental energy to maximize the child’s well-being.

Children with autism spectrum disorder (ASD) present their own specific challenges for parents due to significant delays, limitations in behavior and language, and a demand for a higher level of support and investment of time (Hastings & Johnson, 2001). Parents of children with ASD take less time for themselves to recharge and reframe than other parents, experience lower levels of well-being and self-competence, and report dramatically higher levels of stress, anxiety, depression and divorce (Benson, 2010; Eisenhower, Baker, & Blacher, 2005; Hartley et al., 2010; Hartley, Seltzer, Head, & Abbeduto, 2012; Rezendez & Scarpa, 2011; Weiss & Lunsky, 2011). Additionally, having a child with ASD creates other stressors which include financial burdens due to cost of care and loss of social support due to a lack of understanding of diagnostic needs by others (Benson, 2010; Eisenhower et al., 2005; Rezendez & Scarpa, 2011). Many of these factors have been shown to negatively affect parenting behaviors in samples of typically developing children (Beckerman, Berkel, Mesman, & Alink, 2018; Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Stier, Leventhal, Berg, Johnson, & Mezger, 1993).

Parenting is a complex association of factors which interact and impact one another to influence the quality of individual parenting. These factors can be categorized into three distinct
domains which determine not only the quality of parenting, but also the individual parent and child’s wellbeing. Those domains are: (a) sources of stress and support, (b) individual parental personality and psychological resources, and (c) child individual characteristics (Belsky, 1984)

When one of these systems is problematic, parents demonstrate higher stress and more likelihood of engaging in less optimal parenting, demonstrating a need for assistance. Although there are previously established interventions for stressed parents (e.g., of premature infants, children at risk for maltreatment), only recently has research begun to develop or adapt interventions to address the unique needs of parents of children with ASD (e.g., Mindfulness-Based Stress Reduction, Acceptance and Commitment Therapy; Catalano, Holloway, & Mpofu, 2018). More research and program development are needed.

A potentially effective and low-cost intervention for reducing stress in parents of ASD children is the promotion of self-care. Self-care broadly refers to methods used to promote wellbeing across areas of functioning. Parental self-care can be further defined as the ability to promote individual strength and well-being in order to continue the job of parenting. There have been relationships established between an individual’s self-care and overall health and levels of stress, although only a few studies have examined self-care behaviors in the context of parenting (Carroll, Gilroy, & Murra, 1999; Carter, Kruse, Blakely, & Collings, 2011; Giallo, Wade, Cooklin, & Rose, 2011; Maily, Huberty, Dinkle, & McAuley, 2014). Of these studies, none have examined the contribution of self-care to quality of parenting, including parenting children with ASD. The proposed study will examine self-care variables including quality of sleep, quality of diet, exercise, smoking, and weight.

However, in order to best understand self-care, it’s important to examine factors which may influence how parents utilize self-care. One factor to examine is a parent’s attachment style
which has been shown to influence engagement in self-care. Self-reported attachment style measures an individual’s reported degree of avoidance (uncomfortableness with closeness in relationships) and anxiety (intense fear of rejection and desire for close relationships) with others. Attachment style has demonstrated a relationship with specific self-care behaviors and overall health related quality of life. Secure individuals demonstrate the most positive health behaviors. The more insecurely attached an individual is the more negative self-care behaviors they engage in (Ahrens, Ciechanowski, & Katon, 2012; Brenk-Franz et al., 2015; Feeney and Ryan, 1994; Sadava et al., 2009; Stapleton, Woodcroft-Brown, & Chatwin, 2016). Attachment style has also been shown to have a significant impact on quality of parenting. Both dimensions of attachment style have demonstrated strong relationships with parenting across a range of ages and contexts, with more secure parents demonstrating higher quality parenting than those with insecure attachment styles (anxiety and avoidance) (Jones, Cassidy, & Shaver, 2015).

Overall, this dissertation seeks to examine self-care and its relationship with parental stress and the quality of observed parenting. Additionally, self-reported attachment style will be examined to determine how an individual’s degree of anxiety or avoidance may be influencing a parent’s use of self-care, and how this further relates to parenting stress and quality of parenting. Considering past research which indicates attachment style is significantly related to parenting quality, the direct relationship between a parent’s degree of avoidance or anxious behaviors and observed parenting will also be explored. Examination of these factors of self-report attachment, self-care, stress, and quality of parenting may allow for more individual and tailored support for parents of children with ASD.
Chapter One: Literature Review

Parenting a Child with ASD

Parenting a child with a disability is a stressful experience for parents and children with ASD as children with ASD are a particularly difficult population due to their high needs. ASD refers to behaviorally defined neurodevelopmental disorders characterized by deficits in two domains: 1) social communication and interaction and, 2) restricted or repetitive patterns of behavior, interests, or activities; including stereotyped or repetitive movements (American Psychiatric Association [DSM-V], 2013). Individuals with ASD present with a range of abilities and symptom severity resulting in a heterogeneous presentation across individuals. The Center for Disease Control and Prevention’s (CDC, date) latest report on ASD gives the prevalence as 1 in 68 children in the United States. Boys are impacted 4.5 times more than girls, with 1 in 42 boys and 1 in 189 girls diagnosed with ASD.

The diagnostic criteria for ASD, as outlined in the DSM-V, include persistent deficits in social communication and social interaction as well as restricted patterns of behaviors or interests. The symptoms must be present in the early developmental period and are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Furthermore, individuals are categorized based on severity level, with a Level 3 “requiring very substantial support,” a Level 2 “requiring substantial support” or a Level 1 “requiring support” (American Psychiatric Association [DSM-V], 2013).

Individuals with ASD demonstrate significant deficits in social communication and interaction as defined in the DSM-V. These deficits may be seen as an abnormal social approach and failure of normal back-and-forth conversation, a reduced sharing of interest, emotions, or affect, and a failure to initiate or respond to social interactions. They may also demonstrate poor
verbal and nonverbal communication, abnormal eye contact and body language, an inability to understand and use gestures, or a total lack of facial expressions and nonverbal communication. Children with ASD also have difficulties adjusting their behavior for various social situations and sharing in imaginary play or making friends. The characteristic repetitive patterns of behavior, interest, or activities may be reflected in motor stereotypes, lining up toys, peering at items, echolalia, or idiosyncratic phrases. They also demonstrate rigidity regarding routines and patterns, and may demonstrate difficulty with small changes, transitions, rigid thinking, and rituals (American Psychiatric Association [DSM-V], 2013).

Children with ASD also demonstrate poor outcomes in longitudinal studies with 75-85% of individuals maintaining their diagnosis of ASD into adulthood (Anderson et al., 2007; Howlin, Goode, Hutton, & Rutter, 2004; Magiati, Tay, & Howlin, 2014; Russell et al., 2012). Adults with ASD also demonstrate negative outcomes with employment, social relationships, physical and mental health, and quality of life. This leads to heavy demands on parents and caregivers (Howlin & Moss, 2012). Long term studies of individuals with ASD show most adults with ASD remain dependent on parents or other caregivers for support in education, housing and job-related situations throughout their lives (Billstedt, Gillberg, & Gillberg, 2010).

Furthermore, while parenting a typically developing (TD) child is stressful for all parents, parenting a child with ASD, because of high needs throughout the lifespan, presents unique challenges and stressors. Mothers of children with ASD are one of the most isolated and highly stressed groups of parents, demonstrating less social support (Boyd, 2002; Bromley, Hare, Davison, & Emerson, 2004), and twice as many days of stress, when compared to mothers of TD children (Hayes & Watson, 2013; Reed, Howse, Ho, & Osborne, 2016; Smith et al., 2010; Weiss & Lunsky, 2011). Mothers of children with ASD experience lower cortisol levels (a biological
marker of chronic stress) than parents of children without disabilities (Hartley et al., 2012). Other individuals with these low of cortisol levels include those with significant chronic stressors including adults with PTSD, Holocaust victims, parents of children with cancer, and combat soldiers.

Parents of children with ASD also report having less time for personal care as compared to other mothers (Brandon, 2007). Smith et al., (2010) found that mothers of children with ASD reported spending almost 5 hours a day in childcare activities as compared to 3 hours for mothers of TD children, and they spend more time in direct care of their child when compared to mothers of TD children (Pisula & Kossakowska, 2010). Mothers of children with ASD also spent nearly one additional hour a day doing chores and had 1 hour a day less for leisure activities than mothers of TD children (Smith et al., 2010).

Research has shown that time spent with children with disabilities induces a higher negative affect when compared to parents of children without a disability and mothers may be more negatively affected by having a child with ASD than fathers (see Seltzer, Greenberg, Floyd, Pettee, & Hong, 2001 for a summary of findings; Smith et al., 2010). Mothers of children with ASD also demonstrate dramatically higher levels of stress, anxiety, depression, and divorce when compared to parents of children with other psychiatric conditions and developmental disabilities (Eisenhower, Baker, & Blacher, 2005; Hartley et al., 2010; Hartley et al., 2012; Rezendes & Scarpa, 2011; Weiss & Lunsky, 2011).

Dimensions and Determinants of Parenting

In order to better understand the factors influencing mothers of children with ASD, the multiple dimensions which influence parenting behaviors throughout a child’s life should be examined, first on a basic biological level. Beginning in pregnancy, mothers undergo hormonal
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modifications which induce changes in the maternal brain to promote responsiveness to the child, which is critical for optimal well-being of both child and mother. Changes in parental responsiveness are also limited not only to mothers, as these hormonal changes were also seen in fathers in a recent observational study by Edelstein et al. (2015), demonstrating a continued physiological adaption toward parenting that goes beyond the base maternal hormones. Researchers suggest the hormonal changes that occur prior to birth may be driven by the psychological, emotional, and behavioral changes due to expectancy of a child (Edelstein et al., 2015; Pryce, Martin, & Skuse, 1995; Stozlenberg, 2016). Davis and Sandman (2010) have also linked this hormonal relationship to post-natal infant outcomes such as later cognitive development. This relationship between biology and behavior goes beyond simple hormonal changes. Postnatally, an activation of specific neural pathways occurs which motivates parents to bond, nurture and protect their offspring (Rilling & Young, 2014). Studies using neuroimaging have identified both mothers and fathers displaying neuronal activation in response to infant cues as predicted by the amount of time spent in direct childcare (Abraham, Hendler, Shapira-Lichter, Kanat-Maymon, Zagoory-Sharon, & Feldman, 2014). This activation of neural pathways, as influenced by parental biology and behaviors, also assists with shaping the child’s neural development and predicting later social behaviors. Overall, starting from conception throughout infancy, and beyond, both mothers and fathers demonstrate hormonal and neurological changes which provide parents with resources that promote nurturance, bonding, and protection critical for the child’s future cognitive and social development.

In addition to the inherent, biological adaption of humans to parenting, development of parenting skills is also influenced by social and cultural factors. All societies imbue their members with views on how individuals should parent. These views are influenced by race,
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Ethnicity, and other cultural factors (Bornstein, 2002; Bornstein & Putnick, 2012). National origin has even been shown to shape parents’ teaching behaviors and more than gender, birth order, or socioeconomic status. Cultures also vary significantly in how they evaluate quality parenting, including how parents manage infant distress, engage in physical contact, and provide face to face attention (Goodnow, Cashmore, Cotton, & Knight, 1984; Keller, Voelker, & Yovsi, 2005). Thus, cultural influences can have a dramatic influence on how parents learn to nurture their children. Additionally, other factors such as maternal age, level of education, and prenatal anxiety influence quality of parenting (Thomson et al., 2014).

Belsky (1984) further explored this combination of biological, personal, and social factors which influence parenting by categorizing parenting into three domains of determinants that contribute to parent and child outcomes: (a) child’s individual characteristics, such as child temperament and presence of a disability, (b) individual parental personality and psychological resources, which can include the presence of psychological disorders and a parent’s individual attachment style, and (c) sources of stress and support, which may include social support, self-care and socioeconomic status. The largest contributors to parent’s functioning as proposed by Belsky (1984) are individual characteristics of the parent, such as personality, psychological well-being, and personal developmental history. These factors also interact with child characteristics and sources of stress to affect the entire child-rearing system. Belsky (1984) further argued when two of the three systems are at risk due to factors such as parents’ marital relationships, a child’s developmental history, lack of social networks, or lack of jobs; then, parental functioning is at even greater risk for negative outcomes (Appleyard, Egeland, Dulmen, & Sroufe, 2005; Pianta, Egeland, & Hyatt, 1986).
Universal Dimensions of Parenting

In addition to the factors discussed above which contribute to a parent’s functioning, it is important to identify specific parenting behaviors which make up a parent’s observed parenting behavior as well as the overall quality of parenting. There is a robust literature on parenting which has identified three universal dimensions: (a) emotional support, such as providing a comforting and protecting presence and demonstrating warmth and affection toward the child (the absence of which is emotional neglect), (b) instruction, which includes scaffolding, maintaining the child’s involvement, guidance, limit setting, and the facilitation of age appropriate social and cognitive development (the absence of which is social and/or cognitive neglect), and (c) harsh parenting, which includes the presence of psychological aggression and emotional abuse, including behaviors such as spurning, corrupting/exploiting, terrorizing, coercion, physical and sexual abuse, and neglect (Belsky, 1984; Brassard, Hart, & Hardy, 1993; Britto, & Ulkuer, 2012; Clark, 1999; Lansford & Deater-Deckard, 2012; Verhoeven, Junger, Van Aken, Dekovic, & Van Aken, 2007). Within these dimensions of parenting, research has shown that parents who are able to provide emotional support and warmth, use scaffolding and instruction to assist with children’s learning, and demonstrate few harsh parenting tactics; are most likely to have children who demonstrate the greatest long-term well-being (Baumrind, 1996, 2005; Canetti, Bachar, Galili-Weisstub, Kaplan De-Nour, & Shalev, 1997; Dix, 1991). A more in-depth review of the three dimensions is described below.

**Emotional Support.** Parent’s emotional support of children refers to parent’s use of warmth and empathic behaviors, sensitivity, supportive presence, and encouragement of a child’s autonomy (Baumrind, 2005). Emotional support also includes acknowledgement of a child’s accomplishments, a positive emotional connection, and noticing and responding to a child’s
dysphoric affect in an accepting and containing way. This concept is a key component to examine when assessing quality of parenting, as these behaviors communicate security and comfort to the child, which is critical for long-term development (Bariola, Gullone, & Hughes, 2011; Wallin, 2007). The absence of emotional support has been linked to poor outcomes such as problems with physical health, poor self-esteem, and depression (Boutelle, Eisenberg, Gregory, & Neumark-Sztainer, 2009; Shaw, 2006; Yeung & Leadbeater, 2010). Further, at its most extreme, emotional neglect leads to severe outcomes including intellectual deficits, abnormal social functioning, and at its most extreme, death (Norman, Byambaa, De, Butchart, Scott, & Vos, 2012).

Although children with ASD may demonstrate difficulty with reciprocal social interactions, parents of these children still demonstrate significant use of emotional support in their parenting. Sigman, Mundy, Sherman, & Ungerer (1986) used parent-child interactions to examine aspects of emotional support and found that while children with ASD used less social overtures towards their parents, their social responses to positive parenting behavior did not differ from either mentally retarded or TD children. They also found that parents of children with ASD were found to demonstrate significantly more physical contact with their child (holding, touching the child) although parents’ motivations for using touch and whether the touch was affectionate were not examined.

However, children with ASD demonstrate mutual pleasure in a way that differs from TD children. This may lead to less optimal parenting. Sigman et al. (1986) demonstrated that children with ASD show less engagement during tasks by bringing objects of interest to caregivers less frequently, walking away, and asking for help less than the comparison group. This difference in expression of mutual pleasure and social reciprocity between the parent and
child may lead parents of children with ASD to emotionally withdraw from parenting (Zeliadt, 2015), possibly leading to emotional disengagement, and in some cases, neglect. Parental responsiveness also differs in mothers of children with ASD. Boonen et al. (2015) found mothers of children with ASD demonstrated lower scores on measures of sensitivity from the Parental Behavior Scale-ASD (PBS-A), despite having comparable levels of positive support (although this encompasses a broader range of parenting behaviors).

**Parental instruction.** Parental instruction refers to a parent’s active involvement in their child’s education and facilitation of learning by using scaffolding, guidance, and limit setting during parent-child interactions. This instruction facilitates a child’s development and can include, but is not limited to, actively playing, teaching vocabulary and basic concepts, and reading to children. Parental skills in this domain are critical, as they have been shown to significantly impact children’s later cognitive functioning, academic achievement, and social, emotional, and behavioral outcomes (Baumrind, 1967; Englund, Luckner, Whaley, & Egeland, 2004; Hammond & Carpendale, 2014). Parental instruction must also be appropriately attuned to the developmental level of a child and the child’s cognitive capacities and knowledge (Mermelshtine, 2017). It should include appropriate supervision, limit setting, and consistent expectations (Baumrind, 1996). Parents who demonstrate poor use of instruction may be demonstrating cognitive or social neglect which contributes to such negative outcomes as lower general intelligence, less receptive vocabulary, lower combined math and reading scores, and worse overall academic performance (Hildyard, & Wolfe, 2002; Maguire, Williams, Naughton, Cowley, Tempest, Mann., . . . Kemp, 2015).

Children with ASD demonstrate a significant need for quality instruction unique to their developmental needs. As a group, these children demonstrate skill deficits such as difficulty
communicating needs, difficulty with social interactions, frequent imitation and language
deficits, and difficulty with change and transitions; all of which can be difficult to modify and
change. When children with ASD are provided with specialized, frequent instruction of a high
quality designed to increase generalizability of skills, some of these deficits can be reduced.
Studies examining parents of children with ASD demonstrate the importance of parental
involvement in the intervention process that uses high quality instruction as it improves
generalizability of skills and increases the amount of intervention a child receives. It has also
been shown to improve social-communication, competence, and the quality of parent-child
interactions (Burrell & Borrego, 2012; McConachie & Diggle, 2007; Siller, Hutman, & Sigman,
2012). Through the acquisition of additional sets of instructional skills, parents can better
promote the well-being of their children, and reduce their own stress.

**Harsh parenting.** The broad spectrum of parenting behaviors includes both the positive
parenting behaviors noted above as well as negative parenting behaviors; which combined,
contribute to the complete parent/child relationship. The following section provides a review of
harsh parenting in the form of psychological (i.e., emotional) maltreatment, including
psychological abuse and emotional neglect and social/cognitive neglect. These are the behaviors
most likely to be witnessed in an observed parent-child interaction.

Harsh parenting is most frequently found in high-risk families who demonstrate high
levels of internal and external stressors. One of these stressors is the presence of a disability,
including ASD, which increases risks for harsh parenting in preschool and other populations
(Blacher, Baker, & Kaladjian, 2012). Harsh parenting refers to tactics such as terrorizing,
corrupting/exploiting, spurning, and intrusiveness. The presence of these behaviors, both at a
level of poor parenting and rising to the level of maltreatment, is an important contributor to
negative outcomes in children. The absence of harsh parenting leads to higher levels of positive outcomes.

Parenting exists along a continuum, and there are many parenting behaviors that may be considered poor parenting which do not rise to the level of psychological maltreatment. There is a cross-cultural agreement concerning the rights of children to live in a safe environment, free from harm (United Nations Convention on the Rights of the Child, 1989). This agreement guides the definition of maltreatment by examining the impact on the child. Discipline is considered abusive if a child is significantly impacted by the following criteria: 1) child is significantly harmed, 2) child is not reporting or showing significant symptoms, but acts have engendered fear of bodily injury and the child demonstrates more transient signs of fear and anxiety, and 3) neither of the above is true but objective outsiders estimate the inherent harmfulness of the act (Slep, Heyman, & Snarr, 2011). It is important to note that even if harsh and negative parenting does not rise to a level of maltreatment, it is still related to less optimal and pathological outcomes in children.

Psychological maltreatment (PM) is “a repeated pattern of extreme incident(s) of caretaker behavior that thwart the child’s basic psychological development needs (e.g., safety, socialization, emotional and social support, cognitive stimulation, respect) and convey a child is worthless, defective, damaged, unloved, unwanted, endangered, primarily useful in meetings another’s’ needs, and/or only expendable” (Brassard, Hart, Baker, & Chiel, 2017). PM can also include acts by a parent such as verbal attacks toward the child or denying a child emotional responsiveness. The term “psychological” is also used in this definition to comprise the cognitive, affective, and interpersonal dimensions of this form of maltreatment not implied by the term “emotional abuse,” which is commonly used in the literature. Definitions and guidelines
of psychological maltreatment also vary across states, so it is important to define other common terms for PM including “emotional abuse,” “harsh parenting,” “emotional maltreatment,” or “coercive parenting.”

There are six types of caregiver acts defined as constituting PM when demonstrated as a repetitive pattern: (1) spurning (e.g., rejection, degrading, or belittling the child); (2) terrorizing (e.g., threatening violence or physical harm or placing child in frightening situations); (3) isolating (e.g., physically or socially confining the child) (4) exploiting/corrupting (e.g., use child in ways to serve the adult, actively teach negative behaviors, intrusiveness and other forms of violating a child’s boundaries), (5) denying emotional responsiveness (e.g., ignoring or failing to express affection toward the child); (6) neglect of health and education (e.g., failing to provide necessary educational and medical services to a child in need). These behaviors convey to a child they are unloved, unwanted, and worthless. Unlike other types of abuse where a child indirectly draws conclusions about their own worth because of parental actions, PM is often an explicit message to the child of his lack of worth, or worth which results primarily in meeting another’s needs.

PM has been found to be extremely damaging to the well-being of children, leading to intrapersonal problems of thoughts, feelings and behaviors, emotional problems and symptoms, social competency problems and anti-social functioning, learning problems and behavioral problems, as well as physical health problems (Collishaw, Dunn, O’Connor, & Golding, 2007; Hart, Brassard, Baker, & Chiel, 2017; Maguire, Williams, Naughton, Cowley, Tempest, Mann, . . Kemp, 2015; Norman et al., 2012). Of significance is the increased risk for individuals with disabilities such as ASD for child maltreatment. Jones et al., (2012) conducted a comprehensive meta-analysis (16 studies that included a total of 14,721 individuals) that included individuals
with any type of disability defined as intellectual impairments, disabilities associated with mental illness, physical impairments, and sensory impairments; and studies that measured violence perpetrated against children that included physical violence, sexual violence, emotional abuse, neglect, and any type of violence. They found that children with disabilities were at significantly greater risk for victimization from caregivers, when compared to a TD population, due to a lack of social support and resources to reduce caregiver burden. Other reasons included a need for increased care and stigma associated with disabilities, among others. Furthermore, impairments specifically associated with a child’s disability such as a child’s communication or behavioral difficulty (common in an ASD population), may increase a child’s vulnerability to violence by caregivers. Compared with other disability types (e.g., physical or sensory disabilities), individuals with mental or intellectual abilities demonstrated a 21% increased prevalence for the combined measure of violence (all categories of violence, abuse, and neglect combined), 27% for emotional or psychological abuse, and 8% for physical and emotional neglect (Jones et al., 2012). Further analysis examined the risk of violence as reported in 11 studies with 13,505 children with disabilities and demonstrated that children with disabilities compared to children without, were at increased odds for experiencing emotional abuse and neglect, with odds ratios of 4.4 and 4.6, respectively (Jones et al., 2012). Of note, studies examining maltreatment in populations with broad categories of disabilities do not specify the prevalence of maltreatment in an ASD population.

Blacher et al., (2012) also examined positive and negative parenting behaviors by comparing children between the ages of 3 and 5 with multiple developmental disabilities (including ASD) and TD children, using the PCIRS (Parental Child Interaction Rating System). They identified “negative parenting” behaviors which included maternal negativity and
intrusiveness and found that negative parenting was higher in the developmentally disabled group, in both structured and unstructured interactions (Cohen’s $d$ indicates large effects: .81 to .96 for structured, medium effects: .50 to .66 for unstructured). They further examined parenting by syndrome specificity, finding that parents of children with ASD did not differ in their parenting from parents of children with other developmental delays, but did differ from parents in a TD population.

**Risk factors of harsh parenting.** Parents of children with ASD demonstrate higher levels of stress than parents of TD children, which significantly predicts a parent’s use of psychological aggression (Chan & Sigafoos, 2001; Hayes & Watson, 2013). Parents of this population are also faced with significant parenting burdens in areas of social relationships due to lack of time to engage with other parents, perception of continual need for high levels of care for their child over time, and additional financial stress due to factors such as loss of one parent’s income, specialty schooling, therapeutic interventions, specialized equipment, and the lack of health coverage for behavioral therapies (Hartley et al., 2010; Seltzer et al., 2001; Smith et al., 2010; Weiss & Lunsky, 2011). Other risk factors for harsh parenting include whether parents view parenting a child with ASD as a burden, and poor investment due to the potential negative outcomes and the parents’ experience of discrimination based on their child’s diagnosis (Chan & Lam, 2016; Holmes & Carr, 1991). However, due to the high demands of parenting a child with ASD, parents may be unable to seek out the supports and services that would most help from schools, health services, and religious communities. The potentially inadequate financial and social support for this population is detrimental to families’ basic need fulfillment and leads to increased stress. Other risk factors that increase risk of harsh parenting include characteristics
such as community level of poverty, high ratio of children in the household, and father’s absence (Sidebotham & Heron, 2006).

Beyond the external and community-based risk-factors, certain other caregiver features may also make parents of young children with disabilities more likely to engage in harsh parenting. The age and education of the mother is a significant risk factor, as research has shown how young and unprepared caregivers, under the age of 18 with low educational achievement, are more likely to maltreat their children (Mersky, Berger, Reynolds, & Gromoske, 2009; Sidebotham & Heron, 2006; Stier et al., 1993). Caregivers who also demonstrate psychological disorders, such as depression, anxiety, low self-esteem, low empathy, and poor impulse control are at increased risk. Lastly, caregivers’ own history of child abuse is a significant predictor of later abuse as a parent (Berlin, Appleyard, & Dodge, 2011; Sidebotham & Heron, 2006).

Protective factors against harsh parenting. Despite the high number of risk factors for parents of young children with ASD, there are also many protective factors which reduce their risk for harsh parenting. Bonis & Sawin (2016) reported in a comprehensive review that social capital, or investing in relationships that provide resources, is an important protective factor in reducing parents’ stress and promoting their good health. These relationships included family, friends, and community groups. Other external factors such as social support, and marital satisfaction have demonstrated reduced stress and overall well-being in parents of children with ASD (Gouin, Estrela, Desmarais, & Barker, 2016; Hibbard & Desch, 2007; Liu & Wang, 2015; Tehee, Honan, & Hevey, 2009). A higher level of education was also a protective factor for parents of children with ASD, as parents who demonstrated higher education were more likely to both afford and seek out professional assistance to manage their child’s care (Bonis & Sawin, 2016). Other protective factors for mothers of young children with ASD include internal factors
such as parent empowerment, parents use of mindful parent training and mindfulness, caregiver quality of life, positive experiences from parenting their child, and parental self-efficacy (Bluth, Roberson, Billen, & Sams, 2013; Conner & White, 2014; Ferraioli & Harris, 2013; Khoury-Kassabri, Attar-Schwartz, & Zur, 2014; Weiss & Lunsky, 2011).

**Parenting behaviors in an ASD population.** Due to the popular, though offensive and inaccurate theory of “refrigerator mothers” (cold parenting) being the cause of ASD, research in parenting domains in this area have been limited (Attwood, 2008). However, due to the rise in diagnoses of ASD and the discrediting of this theory, literature in the past decade has emerged to examine parenting behaviors in the ASD population using both self-reported and formal observational measures; studies which examined parenting behaviors are reviewed below.

**Parental self-report studies.** Maljaars, Boonen, Lambrechts, Van Leeuwen & Noens (2014) examined parenting behaviors of mothers of children with ASD (formally diagnosed by qualified professionals with the ADOS-2) between the ages of 6-18 (n=552), when compared to a TD control group (n=437). The study controlled for child characteristics (age) but no parent characteristics. Most mothers were married or cohabitating with a partner, and more than half had completed higher education (bachelors or master’s degree). General parenting behavior was measured through self-report using the Parental Behavior Scale-Short and select subscales from the PBS-A to measure parenting behaviors specifically related to ASD (Parent Behavior Scale - Autism). The PBS is comprised of 5 scales: Positive Parenting, Discipline, Harsh Punishment, Material Rewarding, and Rules. The authors found that mothers of children with ASD, compared to mothers of TD children, differed significantly in their scores on various domains. Mothers of children with ASD reported less rule setting and use of discipline, but demonstrated more positive parenting, stimulating the environment, and adapting the environment to their child’s
needs. Mothers of ASD children ages 12 and under reported a higher level of material rewarding than mothers of TD children. Mothers of adolescents (age 13-18) with ASD were also more likely to adapt their environment to help stimulate the development of their child and use positive parenting strategies when compared to parents of TD adolescents. Given the extra levels of support needed by individuals with ASD in adolescence as compared with a TD population, these findings make sense.

Parenting stress is related to self-reported parenting behaviors. Osborne, McHugh, Saunders and Reed (2008) studied dyads of parents and children with ASD (N=72) between the ages of 5-16 as diagnosed by specialist pediatricians using the Gilliam ASD Rating Scale (GARS) and Vineland Adaptive Behavior Scale as additional supportive information for their diagnosis. They examined parenting behaviors through parent self-report on the Parent Child Relationship Inventory (PCRI) across three domains: limit setting, communication, and involvement. They did not control for parent demographics. Parenting stress was negatively correlated within these three domains, or in other words, parents who demonstrated higher levels of self-reported stress were less able to use appropriate and effective parenting strategies. Following 9-10 months, while the children were undergoing some type of teaching/educational intervention, only the negative correlation between parenting stress and limit setting remained significant as parents with higher reported stress reported lower levels of limit setting.

Observational measures of parenting. Few studies of parenting in children with ASD include observational measures, which are a more objective assessment of parents functioning and relationships with their children. Boonen et al. (2015) examined parent-child dyads of school aged children (N=58) between the ages of 7 and 11 diagnosed with ASD (n=30) and without ASD (n=28). All 30 children who were diagnosed with ASD received a formal diagnosis of ASD
according to the DSM-IV-TR criteria, and independently confirmed in the study through the ADOS-2. Parent demographic factors were not controlled for. Results demonstrated that mothers of children with ASD, compared to TD children, demonstrate less provision of structure (similar to “quality of instruction” in the present study) and observed sensitivity (similar to “emotional responsiveness” in the present study). However, when controlling for parenting stress, group differences were no longer significant. Also, parents of children with ASD were more likely to adapt the environment for their children, and materially reward them.

Donnelly (2015) studied parent-child relationships for 5 to 12-year-old children ASD (N=30), using the same observational measures used in this dissertation (Psychological Multifactor Care Scale — ASD Adapted Preschool Version, PMCS-ASD). Participant’s diagnosis of ASD were made based on a psychiatric intake interview, gold standard diagnostic criteria based on a parent interview, and semi-structured observation (Autism Diagnostic Interview – Revised [ADI-R] and ADOS-2 (Lord et al., 2012], respectively). Findings indicated that participants demonstrated low rates of negative parenting behaviors on average and generally displayed supportive and flexible parenting. A third of the sample demonstrated minimal to a great deal of PM. Notably, the rates of negative parenting in her school-aged ASD sample were comparable to a LSES sample of non-maltreating mothers and TD preschool children and notably lower than a matched child protective service maltreatment sample that used the same observational scale (Brassard et al., 1993). Donnelly (2015) found that parents of children with a co-morbid disorder, most commonly ADHD, demonstrated lower levels of positive parenting and higher levels of negative parenting. Parents demonstrated higher levels of patience when children had lower levels of adaptive intellectual functioning on structured teaching tasks.
Blacher et al., (2012) examined how child syndromes and observation context related to mothers’ parenting behaviors. The participants (N=183) included mothers of children with developmental disabilities (ASD, Cerebral Palsy, Down Syndrome, undifferentiated developmental delay, typical cognitive development) in a longitudinal study of parenting behavior across the ages of 3, 4, and 5. The mothers were largely Caucasian (75.5%), employed (58.3%), and had a family income over $50,000 (50%). Parents were rated on both negative and positive parenting behaviors as measured by the Parenting-Child Interaction Rating System (PCIRS) across both structured and unstructured tasks. Negative parenting scores across time were higher for parents of developmentally delayed children compared to TD children. Parenting scores also differed across tasks, with more negative parenting in structured tasks and higher positive parenting in unstructured tasks. Mothers of children with ASD showed as much positive parenting and no higher levels of negative parenting than TD children (although this sample size was small, N=12). Lastly, observed negative parenting was highly related to child factors such as developmental disability or behavior problems, where positive observed parenting was most related to mother’s demographic factors such as level of education.

In summary, when compared to a TD sample, mothers of children with ASD were found to demonstrate higher stress, less rule setting and discipline, as well as less effective parenting strategies in both observed parenting and parental self-report. Positively, these parents demonstrate the same or even more positive parenting and minimal harsh parenting behaviors. Limitations of this research include few studies of preschool age children as most included school age children and there were only a few studies of observed parenting. Lastly, few studies specify or control for demographic variables in their samples that might be related to parenting including race, socio-economic class, level of education of parent, etc.
**Self-Care**

Mothers of children with ASD experience high levels of stress, depression, divorce, and low self-competence; which in TD samples are related to an increased risk for harsh parenting. There is a great need to identify strategies parents use to help cope with the stressors of parenting and improve well-being. Parental use of self-care is a modifiable variable related to increased wellbeing. Self-care broadly refers to the process of utilizing a method to promote overall well-being in multiple areas. In parents, this can be further defined as the ability to promote their own strength and individual well-being to be able to continue the job of parenting. This can include various activities such as seeking and maintaining social support, interpersonal relationships, physical activity, smoking cessation, good nutrition, quality of sleep, mindfulness, engaging in hobbies or leisurely activities, stress management and using adaptive coping strategies (Carroll et al., 1999; Ryan, 2009). Many of these strategies have been shown to have a relationship with improved physical and emotional health, while only a few have been explored as variables which influence parent’s wellbeing, and none have looked at the relationship between self-care and quality of parenting.

**Exercise.** In recognition of the overall health benefits of physical activity, the Center for Disease Control and Prevention (CDC, 2008) has issued guidelines relating to minimum physical activity levels for adults: 2 hours and 30 minutes (150 minutes) of moderate-intensity aerobic activity every week and muscle-strengthening activities on 2 or more days a week. Exercise is a potential mediator in levels of depression and anxiety, as well as other mental disorders (Mochcovitch, Deslandes, Freire, Garcia, & Nardi, 2016; Rethorst, Wipfli, & Landers, 2009; Wipfli, Rethorst, & Landers, 2008). Exercise is an effective component of stress management
programs, reducing levels of stress for 20-30 minutes after exercise produces a calming effect that can last for hours (Chong, Tsunaka, Tsang, Chan, & Cheung, 2011; Jackson, 2013).

Active mothers also view exercise as a way to de-stress and have an outlet to engage in away from the demands of daily parenting (Mailey et al., 2014). However, despite the many well-documented physical and emotional benefits of exercise, parents, particularly mothers, show decline in physical activity after the birth of their children (Albright, Maddock, & Nigg, 2006; Hull et al., 2010; Rhodes et al., 2013). Parents report many other barriers to exercise including family responsibilities, guilt about being away from their children, lack of support, scheduling constraints, work, and judgement from others (Bellows-Riecken & Rhodes, 2008; Mailey et al., 2014; Mailey, Phillips, Dlugonski, & Conroy, 2016).

**Healthy diet.** Diet has been proven to promote well-being across multiple areas, particularly through examination of food security. Individuals who do not have access to safe, nutritious, affordable food and demonstrate a poor diet are more likely to report feelings of stress and distress, higher levels of fatigue, and poor mental health (Carter et al., 2011; Giallo, Wood, Jellett, & Porter, 2013; O’Neil et al., 2014). Additionally, individuals with poor dietary quality (high fat foods, snacking, meal skipping) have lower levels of wellbeing and higher levels of depression and emotional disorders (Farhangi, Dehghan, & Jahangiry, 2018; Meegan, Perry, & Phillips, 2017; Pina-Camacho, Jensen, Gaysina, & Barker, 2014). Research has also demonstrated correlations between an increase in consumption in high quality healthy foods relating to improvements in psychological well-being and overall mental health (Blanchflower, Oswald, & Stewart-Brown, 2012; Jacka et al., 2010; Jacka et al., 2011; Mujcic & Oswald, 2016; O’Neil et al., 2014).
Sleep. Quality of sleep is another area of self-care important to well-being that is often lost for parents. The National Institute of Health (NIH) recommends that adults should obtain between 7-8 hours of sleep a day. They further report that individuals whose sleep is out of sync with their body clocks (such as caregivers) should pay special attention to their sleep needs (National Institute of Health, 2012). High quality of sleep is valuable to the well-being of parents and has been linked to decreases in levels of stress and enhancement of positive affect (Giallo et al., 2011). However, poor quality of sleep demonstrates a relationship between depression and anxiety, and significantly predicts poor psychological well-being in mothers of children with developmental disabilities (Blaxton, Bergeman, Whitehead, Braun, & Payne, 2015; Chu & Richdale, 2009).

Substance use. Other areas of self-care which have shown negative impacts on individuals physical health and psychological wellbeing include use of substances such as cigarettes, marijuana, and alcohol which have been proven to be harmful to the overall health of individuals. Smokers have been shown in multiple studies to have poorer psychological health, including higher levels of anxiety and stress. Overall, smokers have more instances of negative outcomes across levels of functioning than nonsmokers. Individuals who are experiencing co-morbid anxiety and depression also demonstrate less likelihood of quitting smoking (Grant, Hasin, Chou, Stinson, & Dawson, 004; Lyvers, Hall, & Bahr, 2009; Parrott, 2006; Schmitz, Kruse, & Kugler, 2003; Schumann, Hapke, Meyer, Rumpf, & Ulrich, 2004). The abuse or overuse of other substances such as marijuana and alcohol can also prove detrimental to an individual’s wellbeing. Individuals who increased their use of marijuana over time reported higher levels of depression (Feeney & Kampman, 2016; Pahl, Brook, & Koppel, 2010). Individuals who have higher levels of alcohol consumption demonstrate health problems
including more cardiovascular problems, liver cirrhosis, and various types of cancer, as well as psychological personality traits such as low conscientiousness, low agreeableness, and high neuroticism (Corrao, Bagnardi, Zambon, & Arico, 1999; Malouff, Thorsteinsson, Rooke, & Schutte, 2007; Ronksley, Brien, Turner, Mukamal, & Ghali, 2011).

Studies of self-care for parents. There are only a few empirical studies which examine parent’s use of self-care. Of the existing literature, studies examine self-care behaviors in parents and their perceived effectiveness, but none explore actual quality of parenting as related to self-care. Furthermore, there is limited research on self-care behaviors in mothers of children with ASD. Raynor and Pope (2016) reported an integrative review of research from 1980-2013 on improving the physical health and emotional well-being of parents (inclusive of mothers who were substance abuse users) when self-care was not acute or chronic disease focused. They found three qualitative studies and five quantitative which addressed self-care behaviors in various populations of mothers.

Qualitative studies of mother’s self-care. Barkin and Wisner (2013) interviewed new mothers on how maternal self-care related to new motherhood, including women’s value of self-care, effective applications of self-care, and barriers. Self-care was broadly defined as the mother’s ability (and desire) to take care of herself emotionally and physically including diet, taking time for one’s self, attention to hygiene and physical appearance, adequate sleep, and willingness to delegate. Two separate schools of thought emerged from the focus groups. First, mothers felt as if self-care was of primary importance and they reported effective self-care to include exercise, allowing the infant’s father to take care of the child, and going out to restaurants, while barriers included financial stress and difficulty accepting help and setting
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boundaries. However, mothers also associated good parenting with selflessness and would often not engage in self-care due to a sense of responsibility for caring for their children.

Taylor and Johnson (2010) used an open-ended survey to explore how women manage fatigue after child birth in a sample of 59 well women. Findings were categorized into three themes: self-care practices, how mothers managed the load (asking for help, lowering expectations of parenting role), and how it worked. Self-care behaviors identified included sleeping/taking a nap/resting, conserving energy, time-out, relaxing, and exercise. Mothers were also found to use self-care strategies more than getting help from others or lowering their expectations for parenting. Barriers to self-care included lack of support and financial resources.

Mendias, Clark, Guevara, and Svrcek (2011) had 10 mothers, with children of various ages, identify their own perception of their health and wellness by asking when they did not feel like themselves. They then asked what self-care practices they used when they did not “feel like yourself or felt unhealthy/unwell.” Mother’s self-care practices included rest and withdrawal from the stressors, engagement in pleasurable activities, physical activities and stress management, while barriers to self-care included financial stress and lack of social support.

Overall, these qualitative studies indicated the most helpful self-care strategies (particularly for new mothers) were exercise, sleep, letting someone else help, and lowering expectations. Barriers predominantly included financial resources, time, and lack of support from others. Only one study examined mothers of children of a range of ages (Mendias et al., 2011), while the remainder looked primarily at self-care in mothers of newborns.

Quantitative studies of mothers’ self-care. Kapp (1998) examined mothers’ confidence with infant and maternal self-care behaviors (SCBs) two weeks after birth for 104 first time mothers in Long Island, New York. Confidence with self and infant care was measured using the
Maternal and Infant Care Confidence Scale (MICCS). Six self-care behaviors were explored including perineal care, breast care, knowledge of nutrition, elimination, activity and exercise, and postpartum blues. First time mothers became more comfortable with all forms of self-care two weeks postpartum except for a continued lack of confidence in exercise and poor nutrition. Mothers who already had children were comfortable with engaging in all the above listed forms of self-care two weeks postpartum, except for nutrition.

Cooklin, Giallo, & Rose (2012) examined the relationship between fatigue and parenting behaviors and what psychosocial factors may impact fatigue. Parents were sent a survey asking about parental well-being, including questions of self-care, identified as diet and physical activity, and sleep quality for 1,276 parents with children of varied ages. Poor sleep quality and low self-care (quality of diet and physical activity) were independently and significantly associated with higher fatigue. Poor sleep quality, poor quality of diet and low physical activity were also associated with more sleep disturbances and worse physical health.

Berg, Larson, Bauer, & Neumark-Sztainer’s (2011) longitudinal population-based cohort study examined dietary patterns, physical activity, and BMI’s for fathers and mothers from diverse social backgrounds with children younger than five years old. Data was collected from the second and third waves of Project EAT (Eating and Activity in Teens and Young Adults), a population-based study. Height and weight were assessed by self-report, a food frequency questionnaire assessed the past year’s intake of fruits, vegetables, whole grains, milk products, and sugar-sweetened beverages. Physical activity questions were adapted from the Godin Leisure-Time Exercise Questionnaire and asked how frequently parents engaged in various forms of exercise. Covariates included gender, race, ethnicity, and socioeconomic status.
Overall, parenthood was related to several negative physical health outcomes (social emotional functioning was not evaluated). Young mothers had higher BMIs, consumed greater amounts of sugary drinks, calories, and high fat foods compared to non-mothers. Both mothers and fathers reported less physical activity than non-parents, and mothers had higher mean BMIs than childless women.

Ko and Chen (2010) reported on a cross-sectional comparative study examining health promoting behaviors of ethnic Han Taiwanese and indigenous women in Taiwan. Self-care behavior in the study was measured through the Health Promoting Lifestyle Profile II scale which measures health promoting behaviors related to dimensions of spiritual growth, personal relationships, nutrition, physical activity, health responsibility, and stress management. Significant differences were found in health responsibility and exercise for the two groups, with the Han Taiwanese group demonstrating better outcomes for overall healthy lifestyle, self-actualization, stress management, nutrition, and interpersonal support. When demographic variables were controlled for no differences remained, demonstrating the need for the examination of culture as a factor in women’s use of self-care.

Huang, Yeh, and Tsai (2011) examined the effects of counseling on diet and physical activity from pregnancy or birth to six months postpartum, on weight retention for Taiwanese women (N=189). Participants were randomly assigned to two experimental groups [from pregnancy to six months post-partum (EP) and from birth to six months post-partum (EPP)] focused on education around individualized diet and physical exercise education plans, and one control group without an intervention.

Self-care behaviors were operationalized as total scores on the Self-Rated Abilities for Health Practices (SAHP), a 28-item, 5-point scale used to measure perceived ability to engage in
health promoting behaviors. The SAHP has four subscales measuring exercise, nutrition, responsible health practice, and psychological well-being. Women in both experimental groups had higher scores for health-promoting behaviors, particularly for the nutrition and physical activity subscales, when compared to the comparison group. The results demonstrated the efficacy of using interventions designed to promote dietary and physical activity during pregnancy to improve health and minimize weight gain postpartum.

Overall, the quantitative studies identified mothers as struggling with less exercise, eating more unhealthy food, having poor sleep quality, and having a higher BMI than nonmothers. More physical activity, as well as improved nutrition and sleep, were related to improved well-being. Demographic variables influenced mothers use of self-care.

*Self-care for mothers of children with ASD.* Research on self-care behaviors for mother of children with ASD is limited to a few studies which examine parental sleep quality, exercise, and quality of diet. Lopez-Wagner, Hoffman, Sweeney, Hodge, & Gilliam (2008), examined sleep quality of parents of children diagnosed with ASD (n=106), compared to a TD sample (n=168) using the Pittsburg Sleep Quality Index (PSQI). They found parents of children with ASD reported greater sleep problems for themselves than children of TD parents. Sleep quality of parents of children with ASD was also examined by Meltzer (2007). Mothers (n=35) and fathers (n=22) both completed the Pittsburg Sleep Quality Index, a 7-day sleep diary and wore an actigraph for 1 week. Results also showed parents of children with ASD have different sleep patterns with earlier wake times and demonstrate shorter total sleep time than parents of TD children.

Allike, Larsson, & Smedje (2010) compared mothers (n=31) and fathers (n=30) of children with ASD to mothers (n=30) and fathers (n=29) of a TD population. Parents were given
the 12-item Short-Form Health Survey (HRQL) which measures individuals self-reported limitations in physical activities, lack of energy, emotional health, and general health. Parents of children with ASD reported poorer physical health on the HRQL although did not differ on subscales of self-perceived mental well-being.

Giallo et al., (2013) explored parenting fatigue and its relationship to other aspects of parenting and wellbeing in a sample of 50 mothers. Mothers were asked to rate their fatigue on the Fatigue Assessment Scale (FAS), as well as rate their sleep and health behaviors including questions on perception of quality of diet and overall physical activity. Mothers reported having moderate levels of fatigue, higher than a TD comparison sample. The strongest predictors of fatigue were quality of maternal sleep and quality of physical activity.

In summary, multiple studies show that engagement in more self-care (exercise, quality of diet, quality of sleep, not smoking, lower weight) is related to less stress and higher levels of reported mental and physical wellbeing. Few studies have examined these specific variables in parents and even fewer have examined these in mothers of children with ASD. The existing literature shows the most helpful self-care strategies include physical activity, good nutrition, and high quality of sleep. However, many parents demonstrate barriers to engaging in these self-care behaviors, including tight finances, limited time, and lack of support from others. Three studies have shown that mothers of ASD demonstrate poor self-care and have poorer sleep and physical health when compared to mothers of TD children. Although a few studies have shown that parents engage in fewer positive self-care activities than non-parents, they do not examine the impact of these variables on quality of parenting. Considering the potential impact self-care may have on parents, there relationship between self-care, parenting stress, and parenting behaviors should be explored.
Attachment Style and Parenting Behavior

Bowlby (1969) identified attachment as a behavioral system developed in the context of the parent-child relationship. Attachment organizes infant behaviors around the seeking and maintaining proximity to an attachment figure (typically a parent). Children learn to expect behaviors from their parents in terms of their response to negative affect, availability, and sensitivity to the child’s needs. These unique relationships with each caregiver shape an individual’s style of dealing with attachment related issues and relationships and eventually develops into a children’s attachment style as an adult. In adult relationships, attachment style can be seen in romantic relationships as well as in the parent-child relationships with their own children.

Attachment behavior was first explored experimentally in infants through Mary Ainsworth’s “strange situation.” Infants are introduced to events likely to elicit stress: being in a strange room, being introduced to strange adults, and brief separation from their parents. Depending on how a child reacts to the separation, they are then categorized into three attachment styles of secure, avoidant, or ambivalent. Secure infants are visibly upset when their caregiver leaves a room but are happy when they return. Avoidant infants will ignore the caregiver, showing little emotion when they depart or return. Ambivalent infants will not explore the room, are wary of strangers, and ambivalent when the parent returns (Ainsworth, Blehar, Waters, & Wall, 1978).

Infants response to the strange situation is largely influenced by their internal working models (IWM’s) which infants develop of themselves, their attachment figures, and relationships in various contexts (Bretherton & Munholland, 2008). IWM’s serve as templates for how current relationships function; therefore, they carry forward from infancy into adulthood, with
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modifications based on life events and relationship changes, for how future relationships will work, including the parent-child relationship. An infant who undergoes sensitive and warm caregiving from a responsive attachment figure is more likely to develop a model of them self as worthy of love and a model of future attachment figures as sensitive, secure, and reliable individuals in times of needs (George & Solomon, 1999; Johnson et al., 2010; Jones et al., 2012). This system is most evident in infants (at their most vulnerable stage in life); however, it remains relatively stable throughout childhood, although open to environmental influences, and once established in adulthood resistant to change. It’s further believed these IWM’s are carried into how parent’s will eventually behave with their own children (Cassidy & Shaver, 2008; Main & Goldwyn, 1984; Main, Goldwyn, & Hesse, 2003; Sperling, 1994). Importantly, a parent’s bond with an infant is not considered an attachment style, as both parents and infants have their own attachment behavior which influences thoughts, feelings, and behaviors (Ainsworth, 1989). However, an individual’s attachment system likely influences parenting behaviors through interaction with the caregiving behavioral system.

This system developed through the evolutionary need for parents to engage in behaviors which protect and support their children, impacting behaviors such as protecting children from danger, reducing children’s distress, promoting exploration and growth, and ultimately promoting survival of the child. Typically, a child’s attachment system and seeking protection and proximity to their caregivers work together with a parent’s caregiving system in a functioning parent-child relationship (Bowlby, 1969; Cassidy & Shaver, 1999). A child seeks protection and care from a parent, which activates a parent’s caregiving behavioral system, indicating the need to protect and provide for the child. However, similar to how increases in activation of an infant’s attachment system results in reduced activation of their exploration
system, a parent’s own attachment related needs may interfere with her ability to activate her
caregiving behavioral system to respond appropriately to her child (Cassidy & Shaver, 1999;
George & Solomon, 1999; Jones et al., 2015).

The degree and intensity of the attachment system activation in a child is influenced by
the perception of a threat. Both threat perception and threat response are substantially linked to
attachment experiences (Bowlby, 1973; Dewitte, Koster, De Houwer, & Buysse, 2007;
Mikulincer & Florian, 1998). This is also true of the parental caregiving system, as this can be
activated in two ways: a) perception of a threat towards a child (such as a stranger approaching
the child) or b) heightened response to a child’s behavior. For most parents, a crying infant
desiring comfort is not threatening, and activates caregiving behaviors such as comforting the
upset infant. However, individuals vary in how they assess a threat and parents with insecure
attachments may perceive a crying child as a danger, due to past experiences which have created
schemas that attachment behaviors lead to negative outcomes such as parental rejection of the
child’s need for comfort (Bowlby, 1973; Mikulincer & Florian, 1998). Parents may further
develop mechanisms which promote the idea that safety is best achieved by not letting others
depend on you or depend on others. (George & Solomon, 1999; Jones et al., 2015).

Considering how infant attachment style continues to impact and influence individuals
well into adulthood, as well as in their own future parent-child relationships, research has
explored attachment relationships in adults and created standardized measures to assess this. The
first system to do this was the Adult Attachment Interview (AAI; George, Kaplan, & Main,
1984). The AAI is a comprehensive interview in which trained coders assign one of three
attachment styles to individuals (secure, dismissing, preoccupied) which parallel and predict the
three-original infant strange situation responses identified by Ainsworth et al. (1978). The AAI
also includes a fourth style (disorganized) used when adults fail to utilize an organized discourse across the interview (Hesse, 1999). These adult attachment styles are based on assessment of state of mind with respect to attachment (Hesse, 2008; Main, Goldwyn, & Hesse, 2002). The AAI has been used to extensively explore the context of parenting, and in a comprehensive meta-analysis of AAI studies, the more secure adults were rated, the more sensitive and responsive their observed and self-reported parenting. They were more likely to have a securely attached child as classified through the strange situation task, when compared to parents who were dismissing or preoccupied (Ainsworth et al., 1978; van IJzendoorn, M., 1995).

However, around the same time as the AAI emerged as a construct to measure adult attachment, researchers began to examine how an individual’s attachment style may be impacting the quality of romantic or marital relationships in adulthood. Hazan & Shaver (1987), developed a self-report attachment measure where individuals could report on their attachment behaviors in the context of romantic behaviors, through adolescent and adult parallels of Ainsworth’s infant attachment categories, which were labeled “attachment styles.” Although initially used to examine attachment behaviors in the context of romantic behaviors, these self-report measures quickly evolved into examination of behaviors in any close relationships (including the parent-child relationship) (Jones et al., 2015; Mikulincer & Shaver, 2009). Self-report attachment measures identify two primary areas of attachment, differing from those identified in the AAI, degree of attachment related anxiety and avoidance. These two orthogonal dimensions have been consistently identified in the literature through large-sample-factor-analytic studies (Bartholomew & Shaver, 1998; Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998). The framework is additionally well-accepted in the literature due to frequent
replication, as well as a strong fit with re-analysis of Ainsworth’s original data (Bartholomew & Shaver, 1998; Brennan, Clark, & Shaver, 1998; Fraley & Waller, 1998; Roisman et al., 2007).

Avoidance is the tendency to deactivate the attachment system, and individuals high on this dimension report discomfort with intimacy, dependency, and emotional disclosure in close relationships. Within a parenting relationship, this can look like unsupportive, removed, tepid, or insensitive parenting. Anxiety reflects a hyperactivation of the attachment system with intense fears of rejection and abandonment and strong desires for close relationships. Within a parenting relationship this can look like overprotectiveness, authoritarian parenting, and negative perceptions of child’s behaviors (Cassidy & Shaver, 1999; Jones et al., 2015; Mikulincer & Florian, 1998; Mikulincer & Shaver, 2007; Mikulincer et al., 2001). The combination of anxiety and avoidance dimensions can be examined further as four separate attachment styles (although some studies only examine the degree of anxiety and avoidance in a continuous fashion as opposed to categorically). Secure attachment involves low levels of anxiety and avoidance. The three insecure attachment styles are: preoccupied (high anxiety and low avoidance), dismissing (low anxiety and high avoidance), and fearful (high anxiety and high avoidance) (Bartholomew & Horowitz, 1991).

There is an extensive literature examining parents’ self-reported attachment style and parenting. Jones, Cassidy & Shaver (2015) conducted a comprehensive review and analysis of the literature and identified 64 studies published between 1994 and 2013. The review placed each study into one of three broad parenting categories: (a) behaviors, (b) emotions, and (c) cognitions, identifying whether the studies used self-reported or observed measures of parenting. Next, the studies were categorized into one of four parenting behavior categories: (a) parental sensitivity, responsiveness, and supportiveness, (b) hostility and conflict behavior, (c) child
abuse/maltreatment, and (d) overall parental functioning and miscellaneous parenting behaviors. However, despite the high number of studies assessing self-report attachment style and parenting behaviors, few involved measures of observed parenting (the focus of this study). A review of self-reported parental attachment and observed parenting as found in Jones et al., 2015 follows (no studies on observed parenting were found after their review):

   Edelstein et al. (2004) sampled 39 U.S. parents and their children, measuring parental responsiveness after a child received an inoculation. Children’s reactions and parents’ responsiveness were rated using the Emotional Availability Scales (EAS) and parents’ attachment style was measured through the Relationship Scales Questionnaire (RSQ). Parents who reported high avoidance demonstrated more distress during the inoculation and were less responsive when children were highly distressed as measured on the EAS, whereas these patterns were reversed when parents scored low on avoidance. The influence of adult attachment on parental behavior and children’s distress was also found to be independent of parent’s personality as measured by the Revised NEO Personality Inventory (NEO PI-R) and child’s temperament as measured by the Children’s Behavior Questionnaire (CBQ).

   Berlin et al. (2011) examined observed parenting and self-reported attachment style in a population of 947 U.S. mothers with 3-year old children, half of whom were assigned to Early Head Start Services. They measured the relationship between maternal attachment style (as assessed by Simpson and Rhole's 13-item, seven-point Likert scale, designed to tap self-reported feelings about romantic partners; Rholes, Simpson, & Blakely, 1995) and maternal supportiveness in an observed parenting task. Results from their study demonstrated parental attachment avoidance predicted less observed maternal supportiveness than secure attachment;
however, attachment anxiety was unrelated to maternal supportiveness. In addition, anxiety and avoidance were both unrelated to parental intrusiveness.

Mills-Koonce et al., (2011) assessed 137 U.S. mothers when their children were 6 months and 12 months for levels of maternal sensitivity. Maternal attachment style was measured using Hazan & Shaver’s (1987) Adult Attachment Style (AAS) measure and observations of parenting data were made on 10-minute free play interactions. Mothers who endorsed being avoidant at both points in time demonstrated less sensitivity than consistently secure mothers. There was also higher self-reported psychological distress associated with less maternal sensitivity in mothers who reported being avoidant at both assessments.

Rholes, Simpson, and Blakely (1995, Study 1) looked at three domains measured through observed parenting: maternal supportiveness, maternal hostility, and maternal teaching behavior as influenced by attachment style. Attachment style was assessed through Simpson’s (1990) adaptation of Hazan and Shaver’s (1987) attachment vignettes. The sample included 44 U.S. mothers and their toddlers whose mean age was 36 months. Regarding maternal supportiveness, they found a main effect of avoidance, as well as significant interaction between mother’s degree of avoidance and children’s behavior. Avoidance was negatively related to supportiveness when children behaved more positively, and more avoidant mothers demonstrated less positive teaching behaviors and their child less positive behaviors. Attachment anxiety was unrelated to supportiveness. Both attachment dimensions were unrelated to maternal hostility toward their children. Mothers who demonstrated less anxious attachment demonstrated more positive teaching behavior and had children with more positive behaviors than those high on anxiety. Anxious attachment was unrelated to positive teaching behavior.
Finally, Selcuk, Blumber, Rice, Visser, & Boyle (2010) sampled 85 Turkish mothers and their children, aged 10-50 months. In this study, observed parenting was measured as a) maternal sensitivity and b) maternal caregiving behaviors in relation to self-reported attachment style, as measured by the Experiences in Close Relationships Inventory-Revised (ECR-R; Fraley & Waller, 1998). Avoidance was negatively related to maternal sensitivity and was positively correlated with non-synchronicity in interactions, discomfort with contact, inaccessibility, missing the child’s signals, and failing to meet the child’s needs. Anxiety was negatively correlated with observed maternal sensitivity and positively correlated with conflict in interactions, missing the child’s signals, and interfering with exploration.

Although there has been extensive research examining the attachment style of parents to TD children, there is a significant lack of research examining parents of children with ASD attachment style through use of the AAI or self-report measures such as the Experience in Close Relationships scale (ECR). One study identified parental attachment style using the Experience in Close Relationships Revised Scale (ECR-R) self-report scale for mothers of children with ASD, although the focus of the study was on a child’s attachment to his mother. Mothers of children with ASD were found to have significantly greater attachment related anxiety when compared to mothers of a TD sample, although they did not differ in their report of attachment related avoidance. A second study specifically examined adult attachment status and parental sensitivity through the AAI and observable parent, child, and dyadic behaviors with children with ASD and associated neurodevelopmental disorders (Seskin, et al., 2010). Parents who demonstrated secure attachment had children with more developed reflective functions and symbolic play than parents who were insecurely attached. Second, children of secure parents
were better able to engage in developmentally appropriate social interactions, such as reciprocal smiles and turn taking, then children of insecure parents.

Studies using self-report attachment style have found the most significant associations between avoidant attachment and quality of parenting. Mothers who demonstrate a higher degree of avoidance were found to have less supportive parenting, demonstrated less maternal sensitivity, and engaged in less positive teaching behaviors. Anxious attachment was largely unrelated to parenting behaviors in these studies, however one study found anxiety to be related to less parenting sensitivity. However, of the 64 studies which examine attachment style and quality of parenting, only five studies used observed parenting and none of those focused-on children with ASD. Considering the dynamic and complex relationships between attachment style and quality of caregiving, further research in this area would be beneficial in helping to develop interventions designed to improve parent-child relationships and quality of parenting.

**Attachment Style and Use of Self-Care**

As evidenced above, a parent’s attachment style is related to many aspects of parenting behavior but may also be a significant contributor to the type and frequency in which parents engage in self-care; although there is very limited research. First, attachment style’s influence on the use of self-care is likely related to the relationship between an individual’s attachment style and how they handle negative emotions or stressful events. These behaviors are learned through a person’s internal working models. These IWM’s have shaped a person’s perception from a young age on how caregivers will or should respond to attachment related distress (Feeney & Ryan, 1994). Attachment security instills individuals with a positive sense of self and as an individual worthy of care. Whereas individuals who demonstrate an insecure attachment style develop perspectives of themselves as lacking worth and experience a negative sense of self.
SELF-CARE, ATTACHMENT STYLE AND OBSERVED PARENTING OF ASD

(Bowlby, 1973). When an individual perceives themselves with a negative vs. positive view of themselves, this may impact how they engage in self-care behaviors to cope with stressors in their lives. Parents who have more negative views of self may perceive themselves as less able to cope with stressors (Mikulincer and Florian, 1998) and engage in less self-care. Although there is a large literature which shows how individuals may cope with stressors as related to attachment style, there are few studies which examine attachment style and its influence on self-care, although there may be critical relationships between these two variables.

Individuals who demonstrate a secure attachment style typically had parents’ who were attentive and responsive, so as children they learned how to acknowledge their distress and seek help from others. This can be seen in how parent’s cope with stressors as individuals who demonstrate a secure attachment style demonstrate more problem-focused coping (Berant et al., 2001a; Mikulincer & Florian, 1998 [Studies 2-4], 1999c [Study 2]) when compared to insecure parents, cope better with the stressors of pregnancy, and are more likely to turn to others for advice and support (Alexander et al., 2001; Jones et al., 2015; Mikulincer & Shaver, 2009; Ognibene & Collins, 2016). Individuals with a secure attachment orientation will be more able to engage in health-protective behaviors and less prone to health-damaging behaviors (Ciechanowski et al., 2004; Feeney & Ryan, 1994). Considering these relationships, if mothers can utilize problem focused coping and utilize others for help, they may also be able to utilize more self-care strategies to improve their overall physical and psychological health. Secure attachment has been associated with higher rates of physical activity and health eating habits and frequent use of positive health behaviors (Huntsinger & Luecken, 2004; Pietromonaco, Uchino, & Schetter, 2013). Individuals who are securely attached may also be more resilient, in part due to more employment of self-care practices designed to promote better physical and mental
health, such as engaging in health behaviors, mindfulness, and quality of sleep (Bender & Ingram, 2018).

In contrast, individuals who demonstrate an anxious attachment learn strategies as children which are adaptive in the short term, but not as effective in the long term. They demonstrate a desire for closeness and protection, worry about significant others’ availability and their own personal value to others, and tend to use hyperactivating strategies when trying to cope with stressors due to insecurity and distress (Cassidy & Shaver, 2008). Individuals who demonstrate high levels of attachment anxiety tend to appraise threats as significantly harmful and their own coping resources as lacking and report high levels of distress during and after stressful events (Alexander, Feeney, Hohaus, & Noller, 2001; Mikulincer & Florian, 1995, 1998). This ability to cope with stressful events may also influence how these parents engage in self-care. If a mother is experiencing high anxiety and feels her coping resources are lacking, she may not engage in self-care, due to a perception of her skills and ability. Anxious individuals have also been shown to have significant relationships with negative health behaviors observed in this study as a measure of self-care.

Anxious mothers have been found to demonstrate less frequency of exercise and physical activity than individuals who are secure (Ahrens, Ciechanowski, & Katon, 2012; Brenk-Franz et al., 2015; Feeney & Ryan, 1994). They were more likely to be obese or have been told they need to lose weight (Ciechanowski, et al., 2004; Feeney and Ryan, 1994). Additionally, other negative health related behaviors such as smoking, and substance abuse have been shown to have a relationship with anxious attachment (Brennan, Clark, & Shaver, 1998; Pietromonaco et al., 2013; Sadava, Busseri, Molnar, Perrier, & Decourville, 2009). Lastly, anxious mothers have been associated with poor dietary control in one study (Brenk-Franz et al., 2015). Considering
these results, anxious mothers are likely engaging in fewer positive self-care behaviors and more negative self-care behaviors.

When adults demonstrate an avoidant attachment, they have learned in infancy or childhood to deny or suppress their emotions, so they don’t risk distancing or alienation from caregivers. Avoidant attachment style in adulthood is seen in an individual’s lack of comfort with the closeness of others, desire for emotional distance, high levels of self-reliance, and use of de-activating strategies to cope (Mikulincer & Shaver, 2010). Individuals with an avoidant attachment style frequently engage in distancing coping behaviors (Alexander et al., 2001; Mikulincer & Florian, 1998). These include denial, suppression of negative affect, and taking time or distance away from the source of distress. There is also evidence that people who score high on measures of avoidant attachment are reluctant to seek support during stressful events, rely on cognitive and behavioral distancing, attempt to redirect attention from distress-related situations, and suppress distress-related thoughts (Birnbaum, Orr, Mikulincer, & Florian, 1997; Mikulincer & Florian, 1995, 1998; Simpson, Rholes, & Nelligan, 1992). This relationship may also influence how individuals with avoidant attachment engage in self-care. If a mother demonstrates high avoidance, she may demonstrate a high level of self-care to provide distance from stressors.

In relationship to self-care related behaviors, avoidant individuals have been found to have fewer significant relationships with health care behaviors than those with anxious attachment, however there have been some significant relationships. Individuals who are high on avoidant attachment have shown greater stress and less support than securely attached parents (Sadava et al., 2009). They were more likely to be a smoker or to demonstrate problem drinking than those who were secure (Brennan, Clark, & Shaver, 1998; Ciechanowski, et al., 2004;
Stapleton, Woodcroft-Brown, & Chatwin, 2016). Similar to anxious attachment they were also more likely to have poor physical activity and less healthful diet than those with secure attachment (Ciechanowski, et al., 2004).

Attachment style demonstrates a significant relationship with the strategies individuals use to cope with stressors. Individuals who are securely attached may better utilize self-care as a strategy for reduction of stress. Secure individuals are also more likely to engage in problem focused and active coping strategies and demonstrate more positive health behaviors. They are likely to engage in the median amount of self-care as they utilize various strategies and actively seek out help. Individuals who are anxiously attached may demonstrate more negative views of self and may perceive themselves as less able to cope with stressors (Mikulincer & Florian, 1998). This may be related to how they engage in self-care, in that they may feel the need to try all strategies of self-care to feel more confident in their ability to manage stressors of life. Anxiously attached individuals also demonstrate the most frequent negative health behaviors. Lastly, individuals who demonstrate an avoidant attachment may also demonstrate poorer health related outcomes, due to utilization of more emotion focused and distancing coping. This desire to distance themselves from relationships and others may also be seen in a high degree of self-care, as these parents may engage in a high number of self-care strategies to disengage from stressors. Considering the impact attachment style, self-care and coping strategies have been shown to have on individual’s well-being, more research is needed exploring these factors in a parenting relationship particularly for highly stressed mothers of children with ASD.
Chapter Two: Problem Statement

Mothers of children with ASD experience high levels of stress, depression, divorce, and low self-competence, in addition to an increased risk for less optimal parenting, although no studies on observed parenting have demonstrated this. There is a great need to identify strategies parents use to help manage their stress and parenting. One key area to examine is parental self-care, although currently no single construct of self-care has been accepted in the literature (Raynor & Pope, 2016). Self-care broadly refers to the process of utilizing a method to promote overall well-being in multiple areas. In parents, this can be further defined as the ability to promote their own strength and individual well-being to be able to continue the job of parenting. This can include various activities such as seeking and maintaining social support, interpersonal relationships, physical activity, smoking cessation, good nutrition, quality of sleep, mindfulness, engaging in hobbies or leisurely activities, stress management and using adaptive coping strategies (Carroll et al., 1999; Ryan, 2009). In this study self-care is defined as exercise, sleep quality, weight, quality of diet, and smoking.

Many of these strategies have been shown to have a relationship with improved physical and emotional health for parents. However, of the existing literature examining perceived effectiveness of self-care behaviors in parents, none explore self-care and its relationship to parenting stress and the quality of parenting. Furthermore, there is limited research on self-care behaviors in mothers of children with ASD. Based on past research, it seems the relationship between self-care and quality of parenting will be partially or fully mediated by parental stress, in that mothers who report more self-care will report less stress and demonstrate more supportive and less harsh parenting skills. (Bromley et al., 2004; Hastings & Johnson, 2001; Seltzer, 2001).
Maternal depression will also be considered as a control variable in this study as depressive symptoms are likely to be related to parenting stress, self-care, and quality of parenting.

Self-care use may also be influenced by individuals self-reported attachment style. Parents’ who demonstrate a secure attachment style may demonstrate more effective use of self-care than those with an insecure attachment style (Alexander, Feeney, Hohaus, & Noller, 2001; Berant, Mikulincer & Florian, 2001; Mikulincer and Florian, 1998 [Studies 2-4], 1999c [Study 2]; Mikulincer & Florian, 1999). Based on past literature it seems likely that parents who demonstrate avoidant attachment styles will demonstrate the highest use of self-care strategies, given a strong need to disengage from stressful stimuli (e.g., through sleep and exercise). Securely attached parents may demonstrate a balance of attending to their own needs and those of their children, presenting with an average amount of self-care. Parents who are anxiously attached may demonstrate the least self-care strategies as they are very relationship focused and less attentive to their own needs.

Attachment style is likely to relate to quality of observed parenting directly and through mediators such as self-care and parental stress. Parents who report an anxious or avoidant attachment style report higher levels of stress and demonstrate more negative parenting than those who report a secure style (Mikulincer & Florian, 1998). Jones et al., (2015) also found 11 studies (no null findings reported) that yielded significant associations between attachment style and parental stress with both avoidance and anxiety being related to greater parenting stress. Based on the literature, it is hypothesized that individuals with secure attachment styles will likely demonstrate less parental stress and more positive parenting, while individuals who are insecure will experience more parental stress and less positive parenting. However, few studies examine attachment style and its relationship on parenting quality through objective
observational ratings and none examine a population of parents of children with ASD. This study seeks to add to the literature by expanding this research and exploring mothers of children with ASD’s self-reported attachment style to see if attachment style relates to actual parenting behavior through direct observation.

Overall, the relationship between attachment style and self-care and their joint influence on observed quality of parenting is of interest in this study because attachment style may impact parents’ use of self-care on its own or through a mediator such as parental stress. Through examination of self-reported maternal attachment style and self-care, this dissertation hopes to identify potentially modifiable factors to improve maternal wellbeing and observed parenting in parents of preschool children with ASD. This dissertation will examine these behaviors by answering the following questions:

1) Does parent’s use of self-care relate to their level of parenting stress and quality of parenting?

2) What is the relationship between attachment style and quality of parenting?

3) What is the relationship between self-reported attachment style, use of self-care, parenting stress, and quality of observed parenting?
Chapter Three: Hypotheses

Initial analyses examined the relationship between potential covariates, including education, self-reported maternal depressive symptoms, number of adults in the home, maternal age, family income, ethnicity, child’s adaptive functioning, severity of ASD, and child gender and the dependent variable, observed parenting, as well as hypothesized mediators in causal models (e.g., self-care, parenting stress). Significant covariates will be controlled for in the following hypotheses.

Hypothesis 1:

The relationship between self-care and quality of parenting will be mediated, partially or fully, by parent’s level of stress. Mothers’ use of more self-care will be related to less parenting stress and lower stress will relate to more positive parenting and less harsh parenting. This hypothesis is based on research which has shown the more positive health behaviors individuals engage in (e.g. exercise, healthy diet, good quality of sleep, not smoking) the less stress, depression, and negative mental health outcomes they demonstrate (Cavell, 2000; Altiere & von Kluge, 2008). Additionally, higher levels of parental stress lead to less positive and more harsh
parenting in parent-child dyads (Bromley et al., 2004; Hasting & Johnson, 2001; Seltzer, 2001). This hypothesis will be examined in two separate models examining positive and harsh parenting strategies separately.

**Hypothesis 2:**

Degree of anxious attachment behavior will be significantly and negatively correlated with the amount of parental self-care. This effect will be much larger in mothers who demonstrate a high degree of avoidant attachment compared to those with low avoidance. The interaction between anxious and avoidant attachment will be significant and the pattern of coefficients will be examined to determine if there is a parent’s use of self-care based on Bartholomew’s four attachment prototypes: secure, anxious-dismissing, avoidant-fearful, or avoidant preoccupied (Bartholomew & Horowitz, 1991). Individuals who can be categorized as fearful will demonstrate the most self-care as they will engage in any and all types of self-care given the strong need to disengage from stressful stimuli, thus seeking out more health promoting behaviors. Dismissive parents will demonstrate the next level of self-care as they are also high on avoidance and may want to disengage. Individuals who are in the secure style will identify the next level of self-care as they will balance the need to engage in self-care while also
engaging with their children and families. Lastly, preoccupied mothers will demonstrate the least amount of self-care as they are very relationship focused and less attentive to their own needs.

**Hypothesis 3:**
Parental self-report attachment style will be significantly and positively correlated with quality of parenting. Research has shown that mothers who are insecure (high on avoidance, high on anxiety, or high on both) demonstrate poorer parenting outcomes in TD populations (Jones et al., 2015). Mothers who demonstrate a high degree of anxious attachment fear abandonment, while those who demonstrate an avoidant attachment are uncomfortable with closeness, and both demonstrate more difficulty with relationships than those with secure attachment. Considering the additional stressors and challenges of raising a child with ASD, it is hypothesized that mothers who demonstrate high degrees of anxious or avoidant attachment behaviors will demonstrate higher levels of harsh parenting and lower levels of positive parenting when examining quality of observed parenting.

**Hypothesis 4:**

Attachment style will relate to quality of parenting when anxious attachment is moderated by avoidant attachment, further mediated (partially) by parents use of self-care and level of parental
stress. Security of attachment style will relate to the frequency of self-care: parents with high
degrees of anxious or avoidant attachment behaviors will demonstrate less self-care. The amount
of self-care individuals engage in will relate to stress with less self-care relating to higher
parenting stress. The amount of stress will relate to quality of parenting as high levels of stress
will relate to less positive and more harsh parenting. The entire model will be significant as
individuals who demonstrate insecure attachment styles (i.e. high levels of avoidant or anxious
attachment) will have less self-care, more stress, and fewer instances of positive parenting and
more harsh parenting. This hypothesis is based on the literature that attachment style has shown
to relate to positive health behaviors as well as coping style which may be closely related to self-
care (Bender & Ingram, 2018; Ciechanowski, et al., 2004).
Participants

Forty-nine\(^1\) mother-child dyads participated in a research study, Teachers College IRB #16-310. The approved IRB protocol for this dissertation’s use of the data is IRB #17-100. All 49 participating dyads included children who attended an Applied Behavior Analysis school in a suburb of a large city in the northeastern United States. Inclusion criteria were that: a) children had either an Individual Education Program (IEP) classifying them as a Preschool Student with a Disability or an Individualized Family Service Plan (IFSP) for children in the early intervention program, b) they had to meet criteria for ASD on the ADOS-2, c) children were between the ages of 30 months to 5 years and 11 months, and d) mothers had to state they could speak and read English fluently.

Of the 49 dyads that participated in data collection, 46 were included in this dissertation. The three excluded dyads included one who voluntarily dropped out of the study and two dyads where the child did not meet diagnostic criteria for ASD on the ADOS-2. Four dyads whose interaction video files were corrupted, rendering them unusable for analysis of mother-child interactions, were not used in hypotheses concerning quality of observed parenting.

Figure 1 provides a chain illustrating the final number of participants included in this dissertation.

\(^1\) Three of the 49 mothers were the participants of the pilot study. As few changes occurred between the pilot and the actual study, but did not affect the analyses of this dissertation.
Figure 1. Flow chart of participants in data collection and inclusion in present study.

Participating caregivers were all biological mothers of their child (parent, family and child demographic data are presented in greater detail in Appendix A, Tables A1, A2 and A3). Mothers’ ages ranged from 27 to 47, with a mean age of 36.8. Most mothers were well educated, attaining a bachelor’s degree or higher (n=33; 76.7%). Most mothers identified as either White (n=19; 44%) or Hispanic/Latina (n=12; 28%). Regarding marital status, the vast majority of mothers reported being married or in a committed partnership at the time of the study (n=34, 77%), with several others reporting no prior marriage or partnership (n=6, 14%) or a status of divorced/separated (n=4, 4%). Mothers reported a range of household income level, with a bimodal distribution: one mode was the $75,000 to $99,999 range (n=10, 24%) and another was reported income above $200,000 (n=10, 24%). Based on participants’ reported zip code, an estimate of community level poverty was derived as an additional measure of student resource availability and accessibility (Appendix A, Table A2). While 28% of the sample lives in communities where fewer than 5% of people live below the federal poverty line – indicative of the least impoverished, and generally more affluent, community – 33% of the sample lives in
communities where over 15% of the community lives below the poverty line – indicative of a more impoverished community.

Of the children in the sample, approximately 80% are male. The high ratio of males to females is fairly consistent with the literature indicating greater prevalence of ASD in males, where best estimates indicate a male-to-female ratio of 3:1 (Loomes, Hull, & Mandy, 2017). Children’s ages ranged from two years and six months to five years and six months, capturing a rich range of early childhood development. Sixteen children (36%) had a previously documented diagnosis of ASD given by a primary care physician or a psychologist, as reported in their IEPs or IFSPs. To verify all participating children’s diagnosis and to document the level of ASD severity, 47 participating children were administered the ADOS-2 (Lord et al., 2012) by research reliable PhD students in the school psychology and ID/Autism programs at Teachers College. Research level reliability was attained prior to administering ADOS-2’s. The examiners achieved on-site reliability with a research reliable individual with a PhD in Applied Behavior Analysis, who had been trained by ADOS-2 trainers and obtained 80% reliability with these trainers. Reliability is defined as greater than or equal to 80% on two consecutive administrations for each module. Of the children administered the ADOS-2, all but two met criteria for ASD at the following levels of severity: low (n=4, 8.9%), moderate (n=14, 34.1%), high (n=22, 53.7%). Two participants who had moved away after participating in the first portion of the study were not administered the ADOS-2. Instead, an administrator, with a PhD in Applied Behavior Analysis, at the school familiar with all the children completed the Childhood Autism Rating Scales –Second Edition (CARS-2) with input from the child’s classroom teacher. Of those, 46 children met criteria (including the 2 individuals who were administered the CARS-2).
Procedure

Institutional Review Board (IRB) approval for the pilot study was obtained from the Fred S. Keller School and from the Teachers College, Columbia IRB. The pilot study was conducted in June 2016 and the protocol was revised, as described below. Data collection began in July 2016 and was completed in June 2017. Participants were recruited by the school’s parent coordinator and an administrator, who sent home recruitment letters with eligible students and spoke to parents during school pick up (see recruitment letter in Appendix B).

After reviewing the recruitment letter and verbally consenting to participate, a member of the research team reviewed the consent forms (see consent forms in Appendix C) with the mother in person before beginning a 70-minute assessment session at the school during school hours or on the weekend. Trained graduate students in School Psychology and ID/Autism implemented the procedure in teams of two or three. When the mother arrived for her 70-minute session, she joined her child in the assessment room, which included a child size table, chairs, and a play mat (see layout in Appendix D). The experimenter provided instructions and introduction to the 20-minute interaction consisting of five core tasks/situations (see attached script in Appendix E): completing demands, teaching task (i.e., structured task), free play (i.e., unstructured task), cleanup, and a frustration task. Only the teaching, free play, and cleanup tasks are included in this dissertation.

In the teaching task, the dyad was instructed to build a block house together, using developmentally-appropriate materials (e.g., Legos, Duplos, or large blocks) for five minutes. This task was demanding enough for the child to elicit the mother’s instruction and guidance. The dyad then was provided with additional toys for the five-minute free play task, including cars, a toy phone, a doll family, Magna Doodle, crayons with coloring pages, a ball,
and the remaining blocks. After free play, the experimenter entered the room and handed the mother a sheet of paper stating, “When I leave the room, please tell your child to cleanup. Do not cleanup by yourself.” The cleanup task lasted for two minutes, or until the dyad finished cleaning up – whichever happened first.

Following the dyadic component, child was returned to their classroom or, if the procedure occurred outside of school hours, was cared for by one of the experimenters, while the mother spent approximately 45 minutes completing a questionnaire, including questions about family demographics, child behaviors, parental cognitions and feelings, and self-care.

The procedures were piloted to evaluate procedure feasibility in two circumstances: (1) with three parent-child dyads with typically developing preschool aged children, who were friends of members of the research team and volunteered to help with procedure development, and (2) with three mother-child dyads from the school who met inclusion criteria for this study. Results from the feasibility and pilot studies guided refinement of experimental procedures, as adjustments needed to be made to account for the developmental and behavioral needs of the ASD population. These six pilots also included a debrief interview with the parent to yield qualitative data on the parents’ tolerance of the questionnaires and the procedure. Feedback from the three mothers who participated in the pilot at the school informed further refinement of the questionnaire to reduce administration time.

**Measures**

**Control Variables**

**Demographic Covariates.** Mothers answered questions regarding demographic and family characteristics including maternal age and education, marital status, maternal ethnicity/race, number of adults living in the home, and family income — variables that are often found to be
SELF-CARE, ATTACHMENT STYLE AND OBSERVED PARENTING OF ASD

significantly related to parent and child outcomes due to the direct effect on access to services and support, for example. Socioeconomic status of the participants’ communities was estimated based on estimates median household income and percent below poverty line (United States Census Bureau, 2015). Maternal depressive symptoms were also assessed. Of these potential covariates, household income, number of adults living in the home, race/ethnicity (white vs. not; Hispanic vs. not) were significantly correlated with the dependent variable of quality of parenting. Maternal depressive symptoms, while not related to parenting, was significantly correlated with the mediators of self-care and parenting stress and thus was a) included in models as a covariate and b) were further examined in post hoc analyses as a potential mediator between self-care and parental stress and attachment and stress. Other data was collected from the children’s school records, such as diagnostic history, length of time as a student at the therapeutic school, and classroom teacher-student ratio (one indication of a child’s level of functioning), were excluded from analyses as they were not found to be significantly related to the dependent variables. Measures of child functioning (age, gender, ADOS severity score, Vineland Communication score level) were also not significantly correlated with the dependent variables and excluded from analyses.

Measures of Self-Care. To assess parents self-identified self-care activities, parents were asked eleven questions concerning health habits such as exercise, diet, smoking, overweight, and sleep behavior drawn from the Promise Neighborhoods RFA Indicators and the Promise Neighborhoods Research Consortium [PNRC] Measurement System (Promise Neighborhoods Research Consortium: Measures, 2001). Sleep habit questions include “During the past month (30 days), how would you rate your sleep quality overall” and “on average, how many hours a night did you sleep?” Healthy diet questions included: “During the past 7 days… how many
times did you eat breakfast? You have a meal from a fast food restaurant? How often did you eat fruits (do not include fruit juice)? How often did you eat vegetables (including green salad, broccoli, and carrots)?” Parents were also asked about other health habits including “Has a medical professional ever told you to lose weight?” and “During the past month (30 days), on how many days did you smoke cigarettes?” Lastly, parents were asked about frequency and duration of exercise through the following questions “Over the last 30 days, how many times per week/for how long did you engage in some form of exercise that gets you perspiring (even minimally)?” One question regarding whether parents have visited a doctor within the past year was excluded from analysis in the self-care scale as it was not correlated with other variables and was determined to be a poor construct. In order to calculate a mean score for self-care, each participant’s score on every self-care question was standardized as a z-score with a mean of 0 and a standard deviation of 1 and a mean z-score calculated, weighting each item equally. Internal consistency for total self-care in this sample was $\alpha = 0.74$. Total self-care was correlated with parenting stress ($r = -0.46$, $p = .002$), and maternal depression ($r = -0.59$, $p < .01$).

**Parenting Stress Index.** Parenting stress was measured using the *Parenting Stress Index-Fourth Edition, Short Form* (PSI-4: SF; Abidin, 2012; Haskett, Ahern, Ward, & Allaire, 2006). The measure consists of 36 items that assess for parental stress across three subdomains: parental distress, parent-child dysfunctional interaction, and difficult child (see Appendix J). Responses are completed on a 5-point Likert scale. This measure includes items such as: “I feel trapped by my responsibilities as a parent” and “Since having a child, I feel that I am almost never able to do things that I like to do.” The PSI has excellent internal consistency as reported by the authors ($\alpha = 0.95$) and as found within this study ($\alpha = 0.92$). Construct validity as a measure of parenting stress is strong based on extensive research as reported in the manual and by correlations with
related measures in this study. Total parenting stress was significantly correlated with social support \( (r = -0.48, p < 0.01) \), self-care \( (r = -0.46, p < 0.01) \), attachment style (avoidant: \( r = 0.36, p = 0.02 \), anxious: \( r = 0.35, p = 0.02 \)) and maternal depressive symptoms \( (r = 0.66, p < 0.01) \).

**Maternal Depression.** This study considered maternal depression as a covariate and as a study variable in post hoc causal models since it was found to be significantly correlated to the predictor variables. Maternal depressive symptoms were measured by the Patient Health Questionnaire-9 (PHQ-9). The PHQ-9 is a reliable and well-validated short item measure used to screen for severity of depression with patients demonstrating few to no depressive symptoms, mild depression, moderate depression, moderately severe depression, or severe depression. Items from the CESD-R were matched to items on the PHQ-9 and were used to determine the scores (see table A.4 for replacement questions between measures). Internal consistency for this measure was high \( (\alpha = 0.85 - 0.90) \), and analysis of convergent and divergent validity indicate strong psychometric properties (Kroenke, Spitzer, & Williams, 2001). The present study’s sample had an adequate level of internal consistency \( (\alpha = 0.80) \). In this sample the PHQ-9 measure of maternal depression was correlated with social support \( (r = -0.37, p = 0.01) \), attachment style (anxious: \( r = 0.33, p = 0.03 \); avoidant: \( r = 0.31, p = 0.04 \), self-care \( r = -0.52, p < 0.001 \)), number of adults in the home \( (r = 0.38, p = 0.01) \) and levels of parenting stress \( (r = 0.55, p < 0.001) \).

**Social Support.** Parent’s level of social support was measured by the Interpersonal Support Evaluation List-12 (ISEL-12; Cohen, Mermelstein, Karmack, & Hoberman, 1985, Appendix G), which examines perception of social support in three domains: appraisal (advice or guidance), belonging (empathy, acceptance, or concern), and tangible (material aide). The measures ask participants to respond to items regarding a list of statements which may or may not be true, rating truthfulness from “definitely true” to “definitely false.” Items include
questions such as “If I wanted to go on a trip for a day (for example, to the country or mountains), I would have a hard time finding someone to go with me” and “There is someone I can turn to for advice about handling problems with my family.” The ISEL-12 demonstrates good reliability with high internal consistency (α=.86) and analysis of convergent and divergent validity indicate strong psychometric properties (Cohen, 2008). Within this study’s sample, there was a high level of internal consistency on the ISEL-12 (α=.92). Social support was significantly negatively correlated with parental stress (r=-.48, p<.01), anxious attachment (r= -.38, p=.01) and avoidant attachment (r=-.71, p<.01) and positively correlated with self-care (r=.38, p=.01). Unexpectedly, social support was also significantly correlated with maternal depression (r= -35, p=.02).

Self-Report Attachment Style. The Experience in Close Relationships Scale, Short Form (ECR-S; Wei, Russell, Mallinckrodt & Voel, 2007; Appendix H) was used as a measure of parents self-reported attachment style. The ECR-S evaluated parent’s attachment style on domains of anxious, avoidant, and secure attachment. Attachment style can also be categorized into categorical groups of secure, anxious-dismissing, avoidant-fearful, or avoidant preoccupied (Bartholomew and Horowitz, 1991). However, research has demonstrated attachment is modeled most effectively using continuous as opposed to categorical variables that includes interpretation of attachment style in a manner aligned with the four categories but allows the range of attachment behaviors to be represented (Fraley & Waller, 1998; Fraley & Spieker, 2003a, 2003b; Roisman, Fraley, & Belsky, 2007). The short form of the ECR demonstrates adequate internal consistency (α=.77 to .86 for the Anxiety subscale and from α=.78 to .88 for the Avoidance subscale) and test-retest reliability (r = .82 for Anxiety and .89 for Avoidance; Wei, Russell, Mallinckrodt & Vogel, 2007). The anxiety and avoidance subscales also had an
adequate level of internal consistency in this study, as determined by a Cronbach’s alpha of 0.71 for anxious attachment, and 0.74 for avoidant attachment. Compared to other primary variables in this study, attachment style was positively correlated with parental level of stress for both avoidant \((r = .36, p = .02)\) and anxious \((r = .35, p = .02)\) attachment style. Attachment style was also significantly correlated with maternal depressive symptoms for both anxious \((r = .50, p < .01)\) and avoidant \((r = .45, p < .01)\) scales.

**Observed Quality of Parenting.** Videos of the parent-child interaction were coded based on observed nonverbal and verbal behavior that reflect the degree of parental emotional support (Quality of Emotional Support), the quality of the parents’ instruction and scaffolding (Facilitation of Social/Cognitive Development), and the degree to which parents are critical or punitive of their child (Psychological Abuse, or Harsh Parenting). The coding system used, the *Psychological Multifactor Care Scale* (formerly known as the *Psychological Maltreatment Rating Scale*; Brassard et al., 1993), has been validly modified for use in an ASD sample and was adapted for use in this preschool sample (*Psychological Multifactor Care Scale — ASD Adapted Version*; Donnelly, 2015; Donnelly, Brassard & Hart, 2014; *Psychological Multifactor Care Scale — ASD Adapted Preschool Version*, Brassard, Donnelly, Hart, & Johnson, 2016; see Appendix L). The original PMRS scale was developed as an observational measure of emotional maltreatment in an child protection population and a matched classroom control sample; the measure included positive and harsh parenting behaviors (Emotional Support and Quality of Instruction, the absence of which are psychological and cognitive neglect, respectively), in order to capture a full range of parenting behaviors validated by the literature, demonstrating construct validity (Hart, Brassard, Baker, & Chiel, 2017; Binggeli et al., 2001; Brassard & Donovan, 2006; Hart & Brassard, 1995; Hart & Glaser, 2011; Trickett et al., 2009). Based on the original
evaluation of the PMRS, the scale reliably distinguished between maltreating and non-maltreating families (Brassard et al., 1993), and test-retest reliability was established with a sample of middle class mother-child dyads two weeks apart.

Modifications for the ASD adaptation of the PMCS include truncating the range of ratings for several scales, including Mother’s Supportive Presence, Mutual Pleasure, Mother’s Emotional Response to Task and Situation, and Quality of Instruction/Structure. In Donnelly (2015), the PMCS-ASD was used with three types of tasks: a teaching, free play and cleanup task. Most code definitions were revised for this study to reflect the tasks and toys available during these three interaction sequences, which were different from those in Brassard et al., (1993) and Donnelly (2015).

The scale used in this dissertation consisted of adaptations to the PMCS-ASD scale (Psychological Multifactor Care Scale — ASD Adapted Preschool Version, Brassard et al., 2016) and includes three new codes: Parental Intrusiveness, Child Level of Engagement, and Child’s Engagement of Parent (Ispa et al., 2004) to the teaching, free play, and cleanup tasks (although Parental Intrusiveness and Child Engagement of Parent were not included in the cleanup task). The child engagement scales were abbreviated from their original form after initial coding due to a significantly reduced response of the child to the mother observed in this population. Parental Intrusiveness was also reduced due to a more restricted range of parenting behaviors seen in this population and to facilitate coding reliability.

As will be discussed in a review of exploratory factor analysis of the PMCS-ASD, Observed Quality of Parenting will be measured as Positive and Harsh Parenting. Positive parenting behaviors are those from the initially conceptualized Quality of Emotional Support and Facilitation of Social/Cognitive Development domains, excluding one item from each scale that
was coded as a harsh parenting behavior (Denying Emotional Responsiveness and Parental Intrusiveness, respectively). Harsh parenting behaviors include behaviors on the Psychological Abuse subscale, as well as the two harsh parenting behaviors from the first two subscales. Participant scores were standardized within a scale ranging from 1 to 3 and were computed as means of all included variables. A low score on positive and harsh parenting scales indicate the absence of positive or harsh parenting behaviors, respectively, whereas a high score on the scales reflects a high presence of positive or harsh parenting behaviors.

**Coding and reliability of the parent-child task.** The parent-child task was videotaped, transcribed\(^2\), and then coded by trained research assistants who had both the transcript and the video available for making coding decisions. Four students enrolled in the Ed.M. program in School Psychology at Teachers College, Columbia University were trained to become reliable coders with the doctoral research team trainers. All coders completed the CITI research training. They were blind to the hypotheses of the study and were not given any identifiable information regarding the participants. Coders first practiced coding parent-child interactions using the PMRS-ASD Adapted Preschool version on the three pilot videos. They were then trained over the course of several weeks using videos for this study until they reached an acceptable level of reliability on each item (80% agreement or greater following procedures established for the ADOS-2; Lord et al., 2012). One research assistant was assigned to code each of the three tasks: Teaching, Free-Play, and Cleanup. The research assistants for teaching and cleanup each coded 44 videos. Due to the unforeseen unavailability of one original coder, two research assistants were used to code the teaching task: one research assistant coded 31 videos and one research assistant coded 31 videos and one research assistant coded 31 videos.

\(^2\) Transcriptions were completed by a trained master’s level research assistant, and a second transcriber verified accuracy of all transcriptions.
assistant coded 13 videos. Video coding began when the experimenter exited the room for each task and returned at its completion; as a result, 5 minutes of both teaching and free play were coded, and 2 minutes of clean-up were coded (or fewer if the dyad finished cleaning prior to 2 minutes). Coding and double-coding were completed in the order of participants’ involvement in the study. Seventeen videos (38.64%) were double-coded by the doctoral-level trainer to calculate inter-rater reliability of each task (see Table 1 below).

In order to calculate interrater reliability, disagreement on coded items was analyzed (see Table 1). When there was a disagreement on coded items, differences in ratings were discussed among both raters (doctoral-level trainer and master’s level research assistant) and a consensus score was obtained. There were no more than three items disagreed on between raters for any individual scale. When consensus coding was required, the consensus code was used in all future analyses. In all other cases, the independent rater’s code was used for analyses.

After calculating inter-rater reliability, Parental Touch was dropped (item 6) from all three tasks due to low inter-rater reliability. Respect for Child’s Autonomy (item 9) was dropped from free-play and clean-up tasks due to low inter-rater reliability and the determination this aspect of parent-child relationships could not be adequately evaluated within a ASD preschool population in free-play and clean-up tasks. For the same reasons on cleanup, Intrusiveness (item 11) and Child Engagement of Mother (item 19) were dropped. These items were not used in future analyses.

Reliability statistics were considered acceptable when there was a Cohen’s kappa of .40 (moderate) or .60 (good), (Cicchetti, Bronen, Spencer, Haut, Berg, & Oliver, 2006, Fleiss, Levin, & Paik, 2003). If a Cohen’s kappa could not be calculated, a percent agreement of 80% or better was deemed acceptable (following procedures established for the ADOS-2; Lord et al., 2012).
Research suggests observational assessment of relevant clinical items with restriction in range (i.e., on harsh parenting tasks when ratings were restricted to mostly 0’s on the scale) can create problems in calculating reliability statistics (Hallgren, 2012). Therefore, on clinically relevant items where reliability could not be calculated due too little to no variability across codes, percent agreement between raters was used (Dixon & Brown, 1979).

Table 1. Inter-rater Reliability for Psychological Multifactor Care Scale – Autism Spectrum Disorder Adapted Version

<table>
<thead>
<tr>
<th>Positive Parenting Variables (Cohen’s Kappa)</th>
<th>Teaching Task</th>
<th>Free Play Task</th>
<th>Clean-Up Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother’s Supportive Presence</td>
<td>82.4%*</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Mutual Pleasure</td>
<td>.86</td>
<td>.85</td>
<td>.55</td>
</tr>
<tr>
<td>Body Harmonics</td>
<td>.86</td>
<td>.61</td>
<td>.64</td>
</tr>
<tr>
<td>Mother’s Mental Status</td>
<td>1.00</td>
<td>100%*</td>
<td>94.1%*</td>
</tr>
<tr>
<td>Mother’s Emotional Response to Task and Situation</td>
<td>.85</td>
<td>.82</td>
<td>N/A</td>
</tr>
<tr>
<td>Quality of Instruction</td>
<td>.56</td>
<td>.63</td>
<td>.62</td>
</tr>
<tr>
<td>Respect for Child’s Autonomy</td>
<td>.70</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Strategies for Child’s Task Involvement</td>
<td>.56</td>
<td>.45</td>
<td>0.86</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Harsh Parenting Variables (Percent Agreement)</th>
<th>Teaching Task</th>
<th>Free Play Task</th>
<th>Clean-Up Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denying Emotional Responsiveness</td>
<td>94.1</td>
<td>100.00</td>
<td>100</td>
</tr>
<tr>
<td>Intrusiveness</td>
<td>100</td>
<td>82.4</td>
<td>N/A</td>
</tr>
<tr>
<td>Spurning</td>
<td>88.2</td>
<td>100</td>
<td>88.2</td>
</tr>
<tr>
<td>Terrorizing</td>
<td>94.1</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Isolating</td>
<td>94.1</td>
<td>94.10</td>
<td>100</td>
</tr>
<tr>
<td>Corrupting/ Exploiting</td>
<td>94.1</td>
<td>94.10</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes. Inter-rater reliability was calculated for 17 videos (38.6%) for all three tasks. * indicates percent agreement between raters on Positive Parenting tasks. Percent agreement was used when the statistic could not be calculated because one or both comparison variables was a constant (at least one rater gave all participants the same code for a variable). Percent agreement was used for all harsh parenting variables. N/A indicates this aspect of parent-child relationships could not be adequately evaluated with an ASD population in this sample on a specific task and does not apply.
PMCS-ASD Score Transformation. Descriptive statistics for the raw scores of maternal behavior items on the PMCS-ASD for each task are reported in Appendix M. Variables were rated based on Likert scales, with ordinal ranges from 1 to 3, 1 to 4, 0 to 3, and 1 to 5. The varied ranges facilitated more accurate and reliable coding. However, to maintain consistency and comparability of measurement across all variables, final codes were standardized to z-scores in IBM SPSS Statistics 25. The dependent variables of positive and harsh parenting were a mean score of the totals from all tasks. A mean score, rather than total, is used across all tasks to be most inclusive of participants, as two participants did not engage in cleanup; by using means across all tasks, those participants behaviors are represented by their participation in teaching and free play.

Factor Analysis. Factor analysis was attempted cautiously, as a key assumption of factor analysis is an adequately large sample size, with a typical minimum recommendation of 150 cases. The consequence of this study’s sample size of 44 participants is that PCA is more prone to sampling error, and there may be a limited range of parenting than exists in the larger population, perhaps due to sampling bias. Procedures to attempt factor analysis were guided by consultation with Professor Bryan Keller (personal communication, 2017) and Laerd Statistics (2015).

A variety of approaches were attempted, including principal components and maximum likelihood, with varimax and promax rotations. Given the restrictions in interpretability of factor analysis due to sample size, and the low levels of harsh parenting behaviors that will be described, factor analysis was attempted using only positive parenting items. All positive parenting variables (within the subscales Quality of Emotional Support and Facilitation of Cognitive Development) were combined for one measure of overall Positive Parenting. Harsh
parenting behaviors were inconsistently suitable for factor analysis due to their low levels of incidence and severity. However, excluding those variables from consideration excludes important data about the sample, even when the levels of harsh parenting are low. Harsh parenting variables alone (i.e., separate from the PCA for all PMCS-ASD items) will not be reviewed for factor analysis, but raw scores will be considered together as a subscale, which is supported by theory, for hypothesis testing, as described in following sections.

**Results of Factor Analyses.** PCA was found to be suitable for use with all eight positive parenting variables computed as a mean score across all three tasks. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.82 with individual KMO measures all greater than 0.7, classifications of 'middling' to 'meritorious' according to Kaiser (1974). Bartlett's Test of Sphericity was statistically significant ($p < .0005$), indicating that the data was likely factorizable.

PCA of these eight variables revealed one component that had an eigenvalue greater than one, which explained 62.16% of the variance. Visual inspection of the scree plot (Appendix N) also confirmed that one component should be retained, and the one factor solution met the interpretability criterion. A component-based score was computed using the mean of all variables, representing a measure of positive parenting. Factor loadings are reported below in Table 2.
Table 2. **Factor Loadings for Principal Components Analysis for Positive Parenting across all Tasks from the Psychological Multifactor Care Scale – Autism Spectrum Disorder Adapted Version**

<table>
<thead>
<tr>
<th>Items</th>
<th>Component Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supportive Presence</td>
<td>.875</td>
</tr>
<tr>
<td>Mutual Pleasure</td>
<td>.855</td>
</tr>
<tr>
<td>Body Harmonics</td>
<td>.700</td>
</tr>
<tr>
<td>Mother’s Mental Status</td>
<td>.705</td>
</tr>
<tr>
<td>Emotional Response</td>
<td>.803</td>
</tr>
<tr>
<td>Quality of Instruction</td>
<td>.756</td>
</tr>
<tr>
<td>Respect for Child’s Autonomy</td>
<td>.853</td>
</tr>
<tr>
<td>Strategies for Task Involvement</td>
<td>.739</td>
</tr>
</tbody>
</table>

1 Mean scores, rather than total scores, will be used, as it aids with interpretability within a range of parenting quality scored from 1 to 3, where 1 represents lowest quality of parenting and 3 represents highest.

In summary, results of the PCA of positive parenting items guides the determination for how to utilize the PMCS-ASD to represent Quality of Parenting, though all hypotheses will be tested using the raw means, after standardizing all scales so they ranged from 1 to 3, for both positive and harsh observed parenting.
Chapter 5: Results

Preliminary Analyses

Data Preparation

Imputations. Raw data from questionnaires was examined to identify the scope of missing data. Less than 1% of total scores on measures used in this study were missing so multiple imputation was not used. For those few scales affected by missing data, a score on the scale was calculated if at least 80% of the participants responses were available by using the mean score of other items on the scale to replace the missing item(s). For participants who had more than 80% items missing on a scale they were dropped from any analysis that included the affected scale. A total score on a scale was used in analyses.

On the Parenting Stress Index, missing data analysis focused on subscales to best estimate the missing item using psychometrically similar items. On the Parental Distress subscale, three participants had one missing item, each with three different items. Thus, missing items were imputed with the remaining 91.67% of available responses for that 12-item scale. On the Parent-Child Dysfunctional Interaction subscale, one participant had one missing item, and thus the missing item was imputed with the remaining 91.67% of available responses for that 12-item scale. On the Difficult Child subscale, four participants each had one missing item (all different items), so the missing items were imputed with the remaining 91.67% of available responses in the 12-item scale. For participants with PSI-4 imputations, a T-score comparing parenting stress to a normative population were not computed, as the total raw scores with imputed items included decimal numbers not accounted for by the PSI-4 conversion tables. Thus, T-scores were used to describe clinical significance within the sample, whereas total raw scores will be used for analyses.
For the self-care scale, one participant had five missing items, answering only 58% of available responses and therefore was removed from analysis. Of the remaining participants, three participants had one missing item, having provided responses for 90.9% of the total items. Because self-care is one scale, rather than imputing individually missed items, a total mean score was calculated for each participant and the participants’ mean scores are used to represent self-care in analyses.

**Testing Assumptions.** The dataset was evaluated to determine whether the variables were normally distributed. A skewness or kurtosis statistic between -1 and 1 typically indicates a reasonably normal distribution (Klein, 1998). According to Klein’s (1998) recommendation, cut-offs of z-scores for skew (skewness/standard error) greater than 3.0 and kurtosis (kurtosis/standard error) greater than 10 were used in this dissertation. Values of skewness greater than 3 and kurtosis greater than 10 are considered extreme. However, regression analyses tend to be robust to skew; therefore, skewness is reported as a descriptive feature of the sample.

A summary of skewness and kurtosis tests can be found in Table 3, which reviews all descriptive statistics for the dependent variables. For all dependent variables the skewness and kurtosis were within the acceptable range (see Table 3) except harsh parenting and maternal depressive symptoms. The positive skew for harsh parenting indicate that most mothers display few instances of harsh parenting. For maternal depressive symptoms, the skew indicates there were a significant number of mothers with more depressive symptoms than one would expect for a normally distributed sample.

**Descriptive Statistics of Primary Study Variables**

Table 3 summarizes descriptive statistics for consequent study variables:
Table 3.

Descriptive Statistics for Study Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
<th>Skewness&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Skew z-score&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Kurtosis&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Kurtosis z-score&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Parenting</td>
<td>42</td>
<td>2.66</td>
<td>.24</td>
<td>2.01</td>
<td>2.96</td>
<td>-1.04</td>
<td>-2.91</td>
<td>.45</td>
<td>.64</td>
</tr>
<tr>
<td>Harsh Parenting</td>
<td>42</td>
<td>1.08</td>
<td>.10</td>
<td>1.00</td>
<td>1.37</td>
<td>1.29</td>
<td>3.61</td>
<td>1.00</td>
<td>1.42</td>
</tr>
<tr>
<td>Self-Care</td>
<td>45</td>
<td>25.63</td>
<td>4.64</td>
<td>17</td>
<td>35</td>
<td>.26</td>
<td>.72</td>
<td>-.70</td>
<td>-1.00</td>
</tr>
<tr>
<td>Depression (PHQ-9)</td>
<td>46</td>
<td>3.22</td>
<td>3.50</td>
<td>0</td>
<td>13</td>
<td>1.20</td>
<td>3.43</td>
<td>.770</td>
<td>1.15</td>
</tr>
<tr>
<td>Parental Stress</td>
<td>45</td>
<td>85.57</td>
<td>20.26</td>
<td>37</td>
<td>122</td>
<td>-.75</td>
<td>-2.14</td>
<td>.144</td>
<td>.21</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>46</td>
<td>2.90</td>
<td>1.02</td>
<td>1</td>
<td>4.83</td>
<td>.21</td>
<td>.60</td>
<td>-.99</td>
<td>1.43</td>
</tr>
<tr>
<td>Anxious Attachment</td>
<td>46</td>
<td>2.75</td>
<td>1.07</td>
<td>1.17</td>
<td>5.83</td>
<td>.81</td>
<td>2.31</td>
<td>.36</td>
<td>.55</td>
</tr>
</tbody>
</table>

<sup>a</sup> Standard error of skewness = .35
<sup>b</sup> Standard error of kurtosis = .70
<sup>c</sup> Z-statistic to determine cutoffs for skewness and kurtosis is determined by dividing the produced statistic by standard error
Maternal Report Measures. Descriptive data for all measures are presented in Table 3. On the self-care scale the scores ranged from 17 to 35, with a mean of 25.63, and a standard deviation of 4.64. More than half of the mothers reported a sufficient amount of sleep (69.6% of mothers slept 7 hours or more), with half the mothers averaging 7 hours of sleep per night (50%). Mothers eating habits varied with only one third of mothers eating meals at home almost every day (37%) and almost half eating breakfast every day (45.2%), eating two servings of fruits (41.3%) and having one serving of vegetables a day (45.7%). Sixty-three percent of mothers reported eating at fast food restaurants at least once a month. Most mothers had not been told to lose weight (65.2%) and most did not smoke (87%). Lastly, mothers reported a range of exercise frequency with the most reporting no exercise in the week (41.3%) and the next most frequent reporting two hours a week of exercise (10.9%). (see Table A.2).

In this sample, total parenting stress raw scores were found to have a mean score of 85.58. Based on a cutoff T-score of 60, nine mothers reported significantly elevated levels of parenting stress (20% of the sample). A meta-analysis compared studies of parenting stress for parents of children with ASD and a typically developing groups (Hayes & Watson, 2013). Two of the included studies measured stress using the PSI-SF and found total parenting stress means for the ASD and typically developing groups, respectively, to be 101.71 and 66.00 (Brobst et al., 2009 in Hayes & Watson, 2013) and 91.52 and 60.71 (Lee et al., 2009 in Hayes & Watson, 2013). The level of parenting stress in the present sample is higher than parents of typically developing children, and comparable or slightly lower than other samples of ASD.

Maternal depressive symptoms on the PHQ-9 were found to have scores ranging from 0 to 13, with a mean of 3.22 and a standard deviation of 3.50 Individuals who receive a score of 0-4 are considered in the “minimal level of depressive severity”, 5-9 is “mild depression”, 10-14 is
“moderate depression”, 15-19 is “moderately severe” and 20-27 is in the “severe depression range.” In this sample, 12 of the 46 participants (26%) were found at or above a “mild” level of depression; 9 participants demonstrated mild depression severity and 3 demonstrated moderate depression severity. Studies on the PHQ-9 have shown a prevalence of major depression ranging from 5% to 9% (cut point of 9) (Chin, Wan, Choi, Chan, & Lam; Kroenke et al., 2001; Martin, Rief, Klaiberg, & Braehler, 2006). This sample also examined mothers with a mild level of depressive symptoms (cut point of 5).

On the ECR-S measuring mothers’ self-reported attachment style, maternal attachment style can be calculated a continuous or categorical manner. Regression hypotheses examined attachment style in a continuous manner (Fraley, 2012). The anxiety and avoidance subscales both represent an insecure attachment style. Attachment anxiety in this sample ranged from 1.17 to 5.83, with a mean of 2.74 and a standard deviation of 1.07. Individuals with a high level of attachment anxiety demonstrate significant worries in relationships and seek out others for comfort. Attachment avoidance in this sample ranged from 1.00 to 4.83, with a mean of 2.89 and a standard deviation of 1.02. Individuals who demonstrate a high degree of avoidance are uncomfortable with closeness in their relationships.

Individuals can also be categorized into four separate attachment styles as identified by Bartholomew (Bartholomew & Horowitz, 1991): Secure, Dismissing, Preoccupied, and Fearful. In order to determine which attachment style individuals fall into, the median number for both anxiety and avoidance was calculated from the measure (Fraley, 2012). Participants answered questions on a scale from 1-7, thus a median score of 4 for anxiety (MANX) and avoidance (MAVOID) was used to categorize individuals in the following way: Secure= anxiety score < MANX; avoidance score < MAVOID. Dismissing= anxiety score < MANX; avoidance score >
MAVOID. Fearful = anxiety score ≥ MANX; avoidance score ≥ MAVOID.
Preoccupied=anxiety score > MANX; avoidance score < MAVOID. In this sample, 34 participants demonstrated a secure attachment style, 6 dismissing, 4 fearful, and 2 preoccupied with 35% of all participants demonstrating an insecure attachment style.

**Correlations of Study Variables.** Demographic variables that had significant correlations with dependent variables (DV) were considered in hypothesized models to control for the given variable and are presented in Table 6. Significant correlations were found between several potential covariates and the dependent variables of observed parenting and self-care.

Self-care was significantly correlated with social-support \( (r= .38, p = .01) \), parenting stress \( (r= -.46, p = .002) \), and maternal depression \( (r= -.59, p <.01) \) as well as number of adults in the home \( (r= -.37, p <.05) \) and number of children in the home \( (r= -.39, p <.05) \). The number of adults in the home (which may be treated as a proxy for social and caregiving support) is significantly positively correlated with overall positive parenting \( (r= .38, p = .02) \), and is nearly significant for overall harsh parenting \( (r= -.29, p = .07) \). Household income was significantly correlated with overall positive parenting \( (r= .36, p = .02) \) and nearing significant for harsh parenting \( (r= -.31, p = .05) \). Point-biserial Pearson’s correlations were conducted to assess the correlations between dichotomous covariates, including number of adults in the home, number of children in the home, race/ethnicity, and the dependent variables (see Table 6). Given that white and Hispanic mothers made up most of the sample, two correlations were conducted to assess the significance of race. A significant positive correlation between the dummy coded variable of white mothers indicated that white mothers were associated with higher levels of positive parenting overall \( (r = .39, p = .02) \). A dummy coded variable comparing Hispanic mothers to all others indicated that Hispanic mothers were associated with significantly lower levels of overall positive parenting.
(r= -.42, p = .01). Notably, though Hispanic mothers demonstrate lower levels of positive parenting, there is no significant association between Hispanic mothers and harsh parenting behaviors. Parent’s reported stress on the PSI was negatively correlated with overall positive parenting (r= -.38, p = .02), but was not correlated with overall harsh parenting. Parental attachment style was significantly correlated with quality of parenting for those with an anxious attachment style for harsh parenting (r= .37, p = .02) and nearly significantly negatively correlated with positive parenting (r= -.28, p = .07). There was no significant relation between avoidant attachment style and quality of parenting. Child gender, mother’s marital status, mother’s education level, child’s autism severity score, community level poverty, maternal age, number of children in the home, were not correlated with any measures of observed parenting and were dropped from further consideration.
Table 4.
Means, Standard Deviations, and Intercorrelations for Primary and Covariates for Study

<table>
<thead>
<tr>
<th>Measure</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>1^b</th>
<th>2^b</th>
<th>3^b</th>
<th>4^b</th>
<th>5^b</th>
<th>6^b</th>
<th>7^b</th>
<th>8^b</th>
<th>9^c</th>
<th>10^c</th>
<th>11^c</th>
<th>12^c</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ISEL-12</td>
<td>41</td>
<td>37.73</td>
<td>8.21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. Self-Care</td>
<td>41</td>
<td>2.13</td>
<td>4.98</td>
<td>45^*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. PSI-Total</td>
<td>42</td>
<td>83.77</td>
<td>20.25</td>
<td>-51**</td>
<td>-46**</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. ECRS-Anxiety</td>
<td>42</td>
<td>2.17</td>
<td>0.94</td>
<td>-72**</td>
<td>-72**</td>
<td></td>
<td></td>
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<tr>
<td>5. ECRS-Avoid</td>
<td>42</td>
<td>2.17</td>
<td>0.94</td>
<td>-72**</td>
<td>-72**</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>6. # Adults Home</td>
<td>42</td>
<td>0.98</td>
<td>0.15</td>
<td>-05</td>
<td>-39^*</td>
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</tr>
<tr>
<td>7. # Children in Home</td>
<td>40</td>
<td>0.17</td>
<td>0.38</td>
<td>-29</td>
<td>-37^*</td>
<td>0.13</td>
<td>0.32</td>
<td>0.08</td>
<td>0.05</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>8. Maternal Depressive</td>
<td>42</td>
<td>8.23</td>
<td>8.78</td>
<td>-47^*</td>
<td>-54**</td>
<td>0.64**</td>
<td>0.50**</td>
<td>0.45**</td>
<td>0.48^*</td>
<td>0.12</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Symptoms</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9. Household Income</td>
<td>41</td>
<td>3.79</td>
<td>0.76</td>
<td>0.05</td>
<td>0.09</td>
<td>0.13</td>
<td>0.12</td>
<td>0.15</td>
<td>0.25</td>
<td>0.21</td>
<td>0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Highest Edu. Received</td>
<td>39</td>
<td>2.15</td>
<td>3.79</td>
<td>-09</td>
<td>-05</td>
<td>0.08</td>
<td>-01</td>
<td>0.00</td>
<td>0.07</td>
<td>-16</td>
<td>-02</td>
<td>0.39**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11. Race/Ethnicity (White vs.</td>
<td>41</td>
<td>0.44</td>
<td>0.05</td>
<td>0.07</td>
<td>0.06</td>
<td>0.13</td>
<td>-01</td>
<td>0.10</td>
<td>0.03</td>
<td>0.02</td>
<td>0.36^*</td>
<td>0.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>not)</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>12. Race/Ethnicity (Hisp.</td>
<td>41</td>
<td>0.29</td>
<td>0.46</td>
<td>0.14</td>
<td>0.09</td>
<td>0.06</td>
<td>-18</td>
<td>-19</td>
<td>-30</td>
<td>-14</td>
<td>-14</td>
<td>-14</td>
<td>-36^*</td>
<td>-06</td>
<td>-14</td>
</tr>
<tr>
<td>vs. not)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>13. Obs. Positive Parenting</td>
<td>42</td>
<td>-0.09</td>
<td>0.24</td>
<td>0.23</td>
<td>0.12</td>
<td>-43^*</td>
<td>-26</td>
<td>-17</td>
<td>0.40^*</td>
<td>-08</td>
<td>-14</td>
<td>0.37^*</td>
<td>0.09</td>
<td>0.43^*</td>
<td>-01</td>
</tr>
<tr>
<td>14. Observed Harsh Parenting</td>
<td>42</td>
<td>0.05</td>
<td>-0.19</td>
<td>-0.19</td>
<td>-01</td>
<td>0.29</td>
<td>0.41^*</td>
<td>0.29</td>
<td>-29^*</td>
<td>0.16</td>
<td>0.03</td>
<td>-31^*</td>
<td>0.10</td>
<td>-34^*</td>
<td>0.32^*</td>
</tr>
</tbody>
</table>

^c Point-biserial Pearson’s correlation

Note. PSI = Parenting Stress Index, Raw Scores; ISEL-12 = Interpersonal Support and Evaluation List – Social Support; ECRS = Experience in Close Relationships Short Form, Anxiety and Avoidance.

^p < .05  **p < .01
^b Correlation is trending towards significance (p < .10)
^a Pearson Correlation
Hypothesis Testing

Hypothesis 1:

Hypotheses one examined the relationship between self-care and quality of parenting as mediated by stress when controlling for number of adults in the home, household income, and race/ethnicity. Self-care demonstrated no direct relationships with quality of harsh or positive parenting but was negatively correlated with parenting stress which significantly associated with positive and harsh parenting.

![Diagram of Hypothesis 1](image)

Figure 2. Projected Model Hypothesis 1

Conditional process regression analysis (Hayes, 2018) was used to investigate the hypotheses of parents use of self-care and quality of positive parenting will be mediated by levels of parenting stress. Two separate regression analyses were conducted to investigate the hypothesis that parenting stress mediates the relationship between self-care and quality of parenting measured as positive parenting and harsh parenting behaviors, controlling for number of adults in the home (positive and harsh parenting), race/ethnicity and household income (positive parenting). The mediation model was tested using PROCESS Model 4.
Table 5.1. Regression Analysis Summary for Self-Care, Parental Stress and Observed Positive Parenting

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>M (Parental Stress)</th>
<th>Y (Quality of Positive Parenting)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>SE</td>
</tr>
<tr>
<td>X (Self-Care)</td>
<td>a  -1.81</td>
<td>0.63</td>
</tr>
<tr>
<td>M (Parental Stress)</td>
<td></td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>i_m     75.58</td>
<td>11.80</td>
</tr>
<tr>
<td>Adults in Home</td>
<td>0.56</td>
<td>3.02</td>
</tr>
<tr>
<td>Race/Ethnicity White</td>
<td>6.65</td>
<td>7.11</td>
</tr>
<tr>
<td>Race/Ethnicity Hispanic</td>
<td>7.80</td>
<td>8.10</td>
</tr>
<tr>
<td>Household Income</td>
<td>0.57</td>
<td>1.90</td>
</tr>
<tr>
<td>R² = .256</td>
<td></td>
<td>F (5,32) = 2.201, p = .08</td>
</tr>
<tr>
<td>R² = .612</td>
<td></td>
<td>F (6,31) = 8.098, p &lt; .001</td>
</tr>
</tbody>
</table>

Figure 3. Significant Pathways Hypothesis 1: Positive Parenting

Through a mediation analysis conducted using ordinary least squares path analysis controlling for adults in the home, race/ethnic white vs. not and Hispanic vs. not, self-care indirectly influenced quality of positive parenting through its effects on parental stress. As can be seen in Table 5.1 and Figure 3, individuals with high levels of self-care were associated with lower levels of stress (a = -1.81) and lower levels of stress were associated with more positive parenting (b = -0.09). A bootstrap confidence interval was significant based on 5,000 bootstrap samples. The significant indirect effect (ab = 0.18) was entirely above zero (.0465, .4367) for the path of self-care relating to stress which related to positive parenting. There was no evidence that self-care
influenced quality of parenting independent of its effect on stress (c’=.57, p=0.57). This model explained 61% of the variance in observed positive parenting.

Table 5.2 Regression Analysis Summary for Self-Care, Parental Stress and Observed Harsh Parenting

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Coeff.</th>
<th>SE</th>
<th>p</th>
<th>Consequent</th>
<th>Coeff.</th>
<th>SE</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>X (Self-Care)</td>
<td>a</td>
<td>-1.91</td>
<td>0.66</td>
<td>.007</td>
<td>c’</td>
<td>-0.01</td>
<td>0.07</td>
</tr>
<tr>
<td>M (Parental Stress)</td>
<td>b</td>
<td>0.04</td>
<td>0.02</td>
<td>.042</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>i_m</td>
<td>77.30</td>
<td>9.93</td>
<td>.000</td>
<td>i_y</td>
<td>-2.59</td>
<td>1.59</td>
</tr>
<tr>
<td>Race/Ethnicity- White</td>
<td></td>
<td>0.68</td>
<td>5.64</td>
<td>.903</td>
<td></td>
<td>-1.20</td>
<td>0.63</td>
</tr>
<tr>
<td>R²=.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R²=.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (2,37) = 5.18, p&lt;.001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>F (3,36) = 2.63, p=.07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. Significant Pathways Hypothesis 1: Harsh Parenting

A second mediation analysis was conducted using ordinary least squares path analysis, race/ethnic white vs. not, indicated self-care indirectly influenced quality of harsh parenting through its effects on parental stress. As can be seen in Table 5.2 and Figure 4, individuals with high levels of self-care were associated with lower levels of stress (a=-1.91). Higher levels of stress were associated with higher levels of harsh parenting (b=0.04). A bootstrap confidence interval was significant based on 5,000 bootstrap samples. The significant indirect effect (ab=--
0.074) was entirely below zero (-.0820, -.0047) for the path of self-care related to stress which related to harsh parenting and explained 18% of the variance in harsh parenting. There was no evidence that self-care influenced quality of parenting independent of its effect on stress (c =-.005, p=0.944).

**Hypothesis 2:**

To examine the relationship between attachment style and self-care, moderation analyses were conducted using PROCESS analysis (Model 1; Hayes, 2018) within SPSS 24.0 for Mac. The following moderation equation was examined for self-care as the outcome variable, with avoidant attachment moderating the relationship between anxious attachment and self-care:

\[ Y(\text{Self-Care}) = X(\text{Anxious Attachment}) + M(\text{Avoidant Attachment}) + XM(\text{Anxious*Avoid}) + e^5 \]

Number of adults in the home, number of children in the home, social support, maternal depressive symptoms, and stress were included as covariates.
Table 6
*Regression Analysis Summary for Interaction of Anxious and Avoidant Attachment Style on Self-Care*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>SE</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-9.97</td>
<td>9.19</td>
<td>-1.09</td>
<td>.295</td>
</tr>
<tr>
<td>Anxious Attachment</td>
<td>b₁</td>
<td>7.35</td>
<td>2.62</td>
<td>2.80</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>b₂</td>
<td>4.90</td>
<td>1.94</td>
<td>2.53</td>
</tr>
<tr>
<td>Anxious X Avoidant</td>
<td>b₃</td>
<td>-1.83</td>
<td>0.74</td>
<td>-2.45</td>
</tr>
<tr>
<td>Adults in home</td>
<td></td>
<td>-1.04</td>
<td>0.71</td>
<td>-1.48</td>
</tr>
<tr>
<td>Children in home</td>
<td></td>
<td>-1.59</td>
<td>0.83</td>
<td>-1.83</td>
</tr>
<tr>
<td>Parental Stress</td>
<td></td>
<td>-0.07</td>
<td>0.04</td>
<td>-1.83</td>
</tr>
<tr>
<td>Maternal Depressive Symptoms</td>
<td></td>
<td>-0.36</td>
<td>0.24</td>
<td>-1.48</td>
</tr>
<tr>
<td>Social Support</td>
<td></td>
<td>0.09</td>
<td>0.12</td>
<td>0.47</td>
</tr>
</tbody>
</table>

The model examining avoidant attachment moderating the effect between anxious attachment and self-care was significant and accounted for 56% of the variance ($r^2 = .56$, $F (8,33) = 5.15$, $p<.001$) of self-care, with a significant main effect for anxious ($b₁ = 7.35$) and avoidant attachment ($b₂ = 4.90$). The significant interaction term indicated support for an interaction between attachment styles ($b₃ = -1.83$) indicating that both attachment avoidance and attachment anxiety effect how much self-care an individual may engage in. This pattern of coefficients indicates the higher mothers are on anxiety the more self-care they engage in, thus individuals who are highly preoccupied (i.e. high anxiety and low avoidance) demonstrate the most self-care. Individuals who are fearful (i.e. high on anxiety and high on avoidance) demonstrate the least. Individuals who are secure (i.e. low on anxiety and low on avoidance) and dismissing (i.e. low on anxiety and high on avoidance) demonstrate a level of self-care in between fearful and preoccupied.
Figure 6. Interaction of Anxious Attachment and Avoidant Attachment on Self-Care
Hypothesis 3:

Figure 7. Proposed Pathway Hypothesis 3

Hypothesis 3 examined whether parental attachment style demonstrates a relationship with observed quality of parenting. Pearson’s correlations were conducted to assess the relationship between attachment style and the dependent variable of observed parenting. Missing cases were excluded by listwise deletions for all correlations (see Table 6). No significant correlations between avoidant attachment and positive parenting were found, however, anxious attachment was nearing significance for a negative correlation ($r = -.28, p = .07$) indicating parents lower on the anxious dimension of attachment demonstrated more positive parenting. There was a significant positive correlation between anxious attachment and harsh parenting ($r = .37, p = .02$), therefore parents who demonstrated higher scores for anxious attachment may demonstrate more harsh parenting. There were no significant correlations between degree of avoidance and quality of parenting across positive and harsh parenting behaviors. The hypothesis was supported for individuals high on the anxious dimension of parenting but not the avoidance dimension of the ECR-S.
Hypothesis 4.

Figure 8. Proposed Pathway Hypothesis 4

Hypothesis 4 tested a moderated mediation model between attachment style and quality of parenting as mediated by self-care and stress while controlling for number of adults in the home, race and ethnicity (white vs. not, Hispanic vs not), and household income. Moderated mediation analyses were conducted using PROCESS analysis (Hayes, 2018) within SPSS 24.0 for Mac, using model 83.
Table 7.1 *Regression Analysis Summary for Attachment Style, Self-Care, Parental Stress, and Quality of Observed Positive Parenting*

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Consequent</th>
<th>M1 (Self-Care)</th>
<th>M2 (Parental Stress)</th>
<th>Y (Positive Observed)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Coeff.</td>
<td>SE</td>
<td>p</td>
</tr>
<tr>
<td>X (Attachment Style/Anxious)</td>
<td>a1</td>
<td>6.62</td>
<td>3.00</td>
<td>.035</td>
</tr>
<tr>
<td>W (Attachment Style/Avoidant)</td>
<td>a3</td>
<td>-2.00</td>
<td>0.85</td>
<td>.025</td>
</tr>
<tr>
<td>Int_1 (Anxious x Avoidance)</td>
<td>a3</td>
<td>-2.00</td>
<td>0.85</td>
<td>.025</td>
</tr>
<tr>
<td>M1 (Self-Care)</td>
<td>d1</td>
<td>-1.58</td>
<td>.570</td>
<td>.009</td>
</tr>
<tr>
<td>M2 (Parental Stress)</td>
<td></td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>i1</td>
<td>-10.28</td>
<td>8.28</td>
<td>.224</td>
</tr>
<tr>
<td>Adults in Home</td>
<td></td>
<td>-1.17</td>
<td>0.80</td>
<td>.151</td>
</tr>
<tr>
<td>Race/Ethnicity White</td>
<td></td>
<td>-1.23</td>
<td>1.94</td>
<td>.529</td>
</tr>
<tr>
<td>Race/Ethnicity Hispanic</td>
<td></td>
<td>-1.29</td>
<td>2.20</td>
<td>.563</td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td>-0.03</td>
<td>0.50</td>
<td>.946</td>
</tr>
</tbody>
</table>

\[ R^2 = 0.31 \]
\[ F (7,30) = 1.93, p = .100 \]

\[ R^2 = 0.42 \]
\[ F (6, 31) = 3.72, p = .007 \]

\[ R^2 = 0.67 \]
\[ F (7,30) = 8.70, p < .001 \]
Conditional process regression analysis (Hayes, 2018) was conducted to investigate the hypothesis that self-care and parental stress mediate the relationship between anxious attachment style and observed positive parenting, further moderated by avoidant attachment style (to evaluate both dimensions of attachment style) controlling for adults in the home, race/ethnicity (white vs. not, Hispanic vs. not), and household income. The moderated mediation model was tested using PROCESS Model 83, and the model was significant. The part of the model examining whether degree of avoidant attachment moderates the effect between anxious attachment and self-care was not significant and accounted for approximately 31% of the variance ($R^2=.31$; $F(7, 30) =1.93, p=.100$). However, there was a significant main effect for anxious attachment associated with self-care ($a=6.62, p=.035$) as well as a significant interaction (see Table 10.1) between anxious and avoidant attachment relating to self-care, such that individuals who were higher on anxiety demonstrated more self-care. Self-care significantly related to parenting stress ($d_{21}=-1.58$) such that parents with higher self-care demonstrated less stress. Parental stress was significantly associated with positive parenting ($b_2=-0.07$). The
overall model accounted for approximately 67% of the variance ($r^2 =.67, F (7,30) =8.70, p<.001$)
and there was evidence that the direct effect of anxious attachment style influenced quality of
parenting independent of its effect on self-care and stress ($c'=-1.02, p=.02$).
Table 7.2 *Regression Analysis Summary for Attachment Style, Self-Care, Parental Stress, and Quality of Observed Harsh Parenting*

| Antecedent                      | M₁ (Self-Care) | | | M₂ (Parental Stress) | | | Y (Observed Harsh Parenting) | | |
|--------------------------------|----------------|---|---|----------------------|---|---|-----------------------------|---|
|                                | Coeff.         | SE | p  | Coeff.               | SE | p  | Coeff.                      | SE | p  |
| X (Attachment Style - Anxious) | 7.35           | 2.77 | .012 | 6.91                | 2.46 | .008 | 0.65                        | 0.32 | .047 |
| W (Attachment Style/Avoidant)  | a₁             | 5.19 | 2.09 | .018 | --                | -- | -- | --                          | -- | -- |
| Int₁ (Anxious x Avoidance)    | -2.32          | 0.77 | .005 | --                | -- | -- | --                          | -- | -- |
| M₁ (Self-Care)                | --             | -- | -- | d₂₁                | -1.55 | .561 | .009                        | b₁ | 0.07 | 0.07 | .334 |
| M₂ (Parental Stress)          | --             | -- | -- | --                | -- | -- | --                          | -- | -- |
| Constant                      | iₘ₁           | -15.76 | 6.90 | .030 | 64.30           | 7.49 | .000 | i₉                   | -2.94 | 1.53 | .063 |
| Race/Ethnicity White          | -0.61          | 1.53 | .664 | -0.72           | 5.20 | .890 | -1.32                        | 0.61 | .037 |

\[ R^2 = 0.26 \]
\[ F(4,35) = 3.10, p = .03 \]

\[ R^2 = 0.36 \]
\[ F(3,36) = 6.73, p = .001 \]

\[ R^2 = 0.27 \]
\[ F(4,35) = 3.21, p = .024 \]
Regression analysis was conducted to investigate the hypothesis that self-care and parental stress mediate the relationship between anxious attachment style and observed harsh parenting, further moderated by avoidant attachment style (to evaluate both dimensions of attachment style) controlling for race/ethnicity (white vs. not). The moderated mediation model was tested using PROCESS Model 83, and the overall model was significant. The part of the model examining whether degree of avoidant attachment moderates the effect between anxious attachment and self-care was significant and accounted for approximately 26% of the variance ($R^2=.26$); $F(4, 35) =3.10, p=.03$. There was also a significant main effect for anxious attachment relating to self-care ($a=7.35, p=.012$) as well as a significant interaction (see Table 6) between anxious and avoidant attachment relating to self-care, such that individuals who were higher on anxiety demonstrated more self-care. Self-care significantly relating to parenting stress ($d_{21}=-1.55$) such that parents with higher self-care demonstrated less stress. Parental stress did not significantly relate to positive parenting ($b_{2}=.271$). The overall model accounted for approximately 27% of the variance ($r^2=.27, F(4,35) =3.21, p=.024$) and there was evidence that
the direct effect of anxious attachment style influenced quality of parenting independent of its effect on self-care and stress ($c' = 0.65, p = .05$).

**Exploratory Analyses.**

Results from hypotheses testing guided follow up questions that were examined on a post hoc basis. Due to the significant correlations between maternal depressive symptoms with self-care, attachment style, and parental stress, but not observed parenting, depressive symptoms were added to the model to explore the relationship with quality of parenting, stress, and self-care. Furthermore, considering the exploratory nature of this study, reverse causation models were explored to determine directionality of the variables of depressive symptoms, stress, quality of parenting and self-care. The relationship between individual attachment styles and study variables was also examined.

**Analysis 1.**

![Figure 11. Proposed Pathways Analysis 1](image)

Considering the significant correlations of depressive symptoms with self-care and parental stress, it was investigated as a possible moderator between these two variables on quality of parenting to explore the possibility that self-care is only related to parenting stress in mothers who are depressed and thus not taking care of themselves (e.g., not sleeping, not
SELF-CARE, ATTACHMENT STYLE AND OBSERVED PARENTING OF ASD

exercising, eating little or too much). Regression analysis was conducted to investigate the hypothesis that parental stress mediates the relationship between self-care and observed positive parenting, further moderated by maternal depressive symptoms, controlling for the number of adults in the home, race, and household income. The moderated mediation model was tested using PROCESS Model 7.

Table 8.1 Regression Analysis Summary for Self-Care x Maternal Depressive Symptoms, Parental Stress and Observed Positive Parenting

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>Coeff.</th>
<th>SE</th>
<th>p</th>
<th>Coeff.</th>
<th>SE</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>X (Self-Care) A</td>
<td>-1.22</td>
<td>0.67</td>
<td>.078</td>
<td>c’</td>
<td>0.06</td>
<td>.11</td>
</tr>
<tr>
<td>M (Parent Stress)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>b</td>
<td>-0.10</td>
<td>0.03</td>
</tr>
<tr>
<td>W (Depressive SX)</td>
<td>75.58</td>
<td>11.80</td>
<td>.000</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>MxW</td>
<td>-1.12</td>
<td>1.93</td>
<td>.567</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant i_m</td>
<td>71.88</td>
<td>12.47</td>
<td>.000</td>
<td>i_y</td>
<td>1.03</td>
<td>2.71</td>
</tr>
<tr>
<td>Adults in Home</td>
<td>-0.91</td>
<td>3.42</td>
<td>.791</td>
<td>1.66</td>
<td>0.46</td>
<td>.001</td>
</tr>
<tr>
<td>Race/White</td>
<td>5.28</td>
<td>6.88</td>
<td>.448</td>
<td>2.62</td>
<td>1.09</td>
<td>.023</td>
</tr>
<tr>
<td>Ethnicity/Hispanic</td>
<td>9.29</td>
<td>7.78</td>
<td>.242</td>
<td>-0.06</td>
<td>1.25</td>
<td>.961</td>
</tr>
<tr>
<td>Household Income</td>
<td>1.42</td>
<td>1.87</td>
<td>.451</td>
<td>0.59</td>
<td>0.29</td>
<td>.051</td>
</tr>
</tbody>
</table>

\[ R^2=0.36 \quad F (7,30) =2.44, \ p=0.04 \]

Through a mediated moderation analysis conducted using ordinary least squares path analysis controlling for adults in the home, race/ethnicity white vs. not and Hispanic vs. not, and household income. The model examining whether maternal depressive symptoms moderates the relationship between self-care and parental stress was significant, but there was no significant interaction term. Depressive symptoms relate to parental stress, accounting for approximately 36% of the variance \((r^2=0.36; \ F (7,30) =2.44, \ p=0.04)\), however there was no moderation between self-care and depressive symptoms, and only parental stress was associated with quality.
of parenting. Depression is therefore not a significant moderator of this relationship and did not better explain the relationship between self-care, stress, and positive parenting.

Table 8.2 Regression Analysis Summary for Self-Care, Parental Stress and Observed Harsh Parenting

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>M (Parental Stress)</th>
<th>Y (Quality of Harsh Parenting)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.   SE  p</td>
<td>Coeff.   SE  p</td>
</tr>
<tr>
<td>X (Self-Care)</td>
<td>-1.30 0.69 .068 c’</td>
<td>0.07 0.63 .066</td>
</tr>
<tr>
<td>M (Parental Stress)</td>
<td>--  -- -- b</td>
<td>0.04 0.02 .042</td>
</tr>
<tr>
<td>W (Depressive SX)</td>
<td>12.18 8.23 .148 b</td>
<td>--  -- -- b</td>
</tr>
<tr>
<td>MxW</td>
<td>-0.66 1.67 .694</td>
<td>--  -- --</td>
</tr>
<tr>
<td>Constant</td>
<td>79.98 3.97 .000</td>
<td>-2.59 1.59 .111</td>
</tr>
<tr>
<td>Race/Ethnicity- White</td>
<td>-0.26 5.58 .963</td>
<td>-1.20 0.63 .066</td>
</tr>
</tbody>
</table>

A second mediated moderation analysis was conducted using ordinary least squares path analysis, controlling for race/ethnic white vs. not. The model examining whether maternal depressive symptoms moderates the relationship between self-care and parental stress was significant but there was no significant interaction term. Self-care and maternal depressive symptoms together accounted for approximately 31% of the variance \( (r^2= .31; F (4,35) = 3.85, p=0.01) \) in parental stress. Depressive symptoms were not a significant moderator between stress and self-care, and did not better explain the relationship between self-care, stress, and harsh parenting.
Figure 12. Proposed Pathways Analysis 2

Considering the significant correlational relationships between stress, self-care and depressive symptoms and lack of moderation by depression of the relationship between self-care and parenting stress (see Hypothesis 1b) a mediational model was explored to better understand the role of depressive symptoms on quality of parenting. Regression analysis was conducted to investigate the hypothesis that self-care will relate to quality of parenting when mediated by depressive symptoms and parental stress such that level of self-care will relate to severity of depressive symptoms which will relate to maternal stress which relates to quality of parenting, controlling for number of adults in the home, race/ethnicity (white vs not, Hispanic vs. not) and household income. The mediation model was tested using PROCESS Model 6.
Table 9.1 Regression Analysis Summary for Maternal Depressive Symptoms, Self-Care, Parental Stress, and Quality of Observed Positive Parenting

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>M₁ (Depression)</th>
<th>M₂ (Parental Stress)</th>
<th>Y (Positive Obs. Parenting)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>SE</td>
<td>P</td>
</tr>
<tr>
<td>X (Self-Care)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M₁ (Depression)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>M₂ (Parental Stress)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>i₁</td>
<td>4.32</td>
<td>5.19</td>
</tr>
<tr>
<td>Adults in Home</td>
<td></td>
<td>2.52</td>
<td>1.34</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>-0.52</td>
<td>3.30</td>
<td>.876</td>
</tr>
<tr>
<td>Hispanic</td>
<td>-1.06</td>
<td>3.63</td>
<td>.772</td>
</tr>
<tr>
<td>Household Income</td>
<td>-0.30</td>
<td>0.86</td>
<td>.728</td>
</tr>
</tbody>
</table>

$$R^2 = 0.38$$  $$R^2 = 0.50$$  $$R^2 = 0.64$$

$$F(5, 31) = 3.80, p = .008$$  $$F(6, 30) = 5.09, p < .001$$  $$F(7, 29) = 7.50, p < .001$$
Through a mediation analysis conducted using ordinary least squares path analysis controlling for adults in the home, self-care indirectly influenced quality of positive parenting through its effects on depressive symptoms and parental stress. As can be seen in Table 7.1 and Figure 7, individuals with high levels of self-care demonstrated lower levels of depressive symptoms ($a_1 = -0.76$) lower levels of depressive symptoms was associated with less parenting stress ($d_1 = 1.33$). Parental stress was also significantly related to positive parenting ($b_2 = -0.12$) as the less stress a parent reported the more instances of positive parenting were observed. A bootstrap confidence interval was significant for one path based on 5,000 bootstrap samples. The significant indirect effect ($a_2 d_2 b_2 = 0.11$) was entirely above zero (.0305, .3104) for the path of self-care, relating to depressive symptoms, relating to parental stress, relating to positive parenting. There was no evidence that self-care influenced quality of parenting independent of its effect on symptoms of depressive symptoms and stress ($c' = 0.09$, $p=0.439$). Self-care, maternal stress, and depressive symptoms explained 64% of the variance in observed positive parenting. Therefore, self-care appears to influence quality of parenting through its impact on parents’ stress and depressive symptoms, although only explains 3% more of the variance than stress alone.
<table>
<thead>
<tr>
<th>Antecedent</th>
<th>M1 (Depression)</th>
<th>M2 (Parental Stress)</th>
<th>Y (Observed Harsh Parenting)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>SE</td>
<td>p</td>
</tr>
<tr>
<td>X (Self-Care)</td>
<td>a₁</td>
<td>-1.00</td>
<td>0.26</td>
</tr>
<tr>
<td>M₁ (Depression)</td>
<td></td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>M₂ (Parental Stress)</td>
<td></td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>iₘ₁</td>
<td>8.20</td>
<td>1.72</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>-0.49</td>
<td>2.51</td>
<td>.847</td>
</tr>
</tbody>
</table>

\[ R^2 = 0.295 \]
\[ F(2, 35) = 7.327, p = .002 \]

\[ R^2 = 0.429 \]
\[ F(3, 34) = 8.508, p < .001 \]

\[ R^2 = 0.244 \]
\[ F(4, 33) = 2.656, p = .05 \]
A second mediation analysis was conducted using ordinary least squares path analysis, controlling for race/ethnicity white vs. not, indicated self-care indirectly influenced quality of harsh parenting through its effects on symptoms of depression and parental stress. As can be seen in Table 7.2 and Figure 8, individuals with high levels of self-care were associated with lower levels of depressive symptoms ($a_1=-1.00$). Higher levels of depressive symptoms were associated with higher levels of stress ($d_{21}=1.24$), which were associated with more harsh parenting ($b_2=0.06$). A bootstrap confidence interval was significant based on 5,000 bootstrap samples. The significant indirect effect ($a_2d_2b_2=0.103$) was entirely below zero (-0.3208, -0.0380) for the path of self-care, relating to depressive symptoms, relating to parental stress, relating to harsh parenting. There was no evidence that self-care influenced quality of parenting independent of its effect on level of depressive symptoms and stress ($c'=-0.30$, $p=0.716$). Self-care, maternal stress, and depressive symptoms explained 24% of the variance in observed harsh parenting. Therefore, self-care appears to influence quality of parenting through its impact on parents’ stress and depressive symptoms and adding depression into the model explains 6% more variance on quality of parenting than stress alone (18% of the variance).
Analysis 3.

Due to the exploratory nature of the study and direction of this relationship not being known, it was unclear if quality of parenting may have been impacting individual’s perception of stress and depressive symptoms. Two reverse causation models were explored to better determine directionality. Regression analyses were conducted to investigate the hypotheses that quality of parenting will relate to self-care when mediated by level of depressive symptoms and parental stress controlling for number of adults in the home, race/ethnicity (white vs not, Hispanic vs. not) and household income for positive parenting and race/ethnicity (white vs. not) for harsh
parenting. The mediation models were tested using PROCESS Model 6. However, neither of the models were significant (see appendix N for results).

**Analysis 4.**

**Table 10**

*Means and SD of Study Variables by Attachment Style*

<table>
<thead>
<tr>
<th>Attachment Style</th>
<th>Self-Care</th>
<th>Parental Stress (PSI)</th>
<th>Depressive Symptoms (PHQ-9)</th>
<th>Positive Parenting</th>
<th>Harsh Parenting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure</td>
<td>Mean</td>
<td>0.75</td>
<td>81.59</td>
<td>2.65</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>33</td>
<td>33</td>
<td>34</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>5.03</td>
<td>20.67</td>
<td>2.76</td>
<td>3.55</td>
</tr>
<tr>
<td>Preoccupied</td>
<td>Mean</td>
<td>0.96</td>
<td>96.00</td>
<td>0.50</td>
<td>-1.50</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>10.62</td>
<td>10.00</td>
<td>0.71</td>
<td>0.37</td>
</tr>
<tr>
<td>Dismissing</td>
<td>Mean</td>
<td>-0.69</td>
<td>89.67</td>
<td>3.33</td>
<td>-0.65</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>4.40</td>
<td>17.44</td>
<td>4.37</td>
<td>4.05</td>
</tr>
<tr>
<td>Fearful</td>
<td>Mean</td>
<td>-5.87</td>
<td>107.00</td>
<td>9.25</td>
<td>-1.08</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>3.42</td>
<td>5.60</td>
<td>3.30</td>
<td>6.38</td>
</tr>
</tbody>
</table>

The means and standard deviations of each variable were explored in order to examine the relationships between individual attachment style and each of the significant study variables. With regard to self-care, mothers who were preoccupied demonstrated the highest degree of self-care, followed by secure attachment, dismissing attachment, and fearful attachment demonstrating the smallest amount of self-care. Parental stress was highest in mothers who demonstrated fearful attachment, followed by preoccupied, dismissing, with secure mothers demonstrating the least parental stress. Maternal depressive symptoms were distributed with preoccupied attachment style having the fewest depressives symptoms, followed by secure attachment, dismissing attachment, with fearful attachment style having the highest depressive symptoms. Concerning quality of parenting, for positive parenting secure mothers demonstrated the highest mean for positive parenting, followed by dismissing, fearful, with mothers with
preoccupied attachment style demonstrating the fewest instances of positive parenting. Harsh parenting differed with mothers who are preoccupied demonstrating the most harsh parenting, followed by fearful, dismissing, and secure mothers demonstrating the fewest instances of harsh parenting.
Chapter Six: Discussion

Summary of Findings

In order to understand the relationship between self-care, attachment style, and observed parenting behaviors for the unique caregiving dynamic between parents and their children with ASD, this dissertation examined self-report measures of individuals use of self-care strategies, attachment style and factors related to parents’ wellbeing such as parental stress and its relationship to observed parenting. In a diverse sample of mothers and their preschool-aged children with ASD, attending a specialized preschool program, self-care was significantly related to parental stress which was significantly related to positive parenting, controlling for adults in the home, household income, and race. Parents who demonstrate more self-care show lower levels of parental stress and lower levels of stress were related to higher positive parenting and less negative parenting. A post hoc model that included depressive symptoms fit the data even better showing self-care relates to less depressive symptoms which relates to less stress which relates to positive parenting, \( r^2=64\% \) and negative parenting \( r^2=24\% \), explaining an additional 3% and 6% of the variable, respectively.

As hypothesized, attachment style did demonstrate a relationship with self-care and explained 56% of the variance in self-care. Mothers who are highly preoccupied (high in degree of anxiety and low on avoidance) engaged in the most self-care. Mothers with dismissing and secure attachment styles demonstrate the median amount of self-care while mothers who demonstrate a fearful attachment style engaged in the least amount of self-care.

Attachment style was also related to quality of parenting, both directly and as partially mediated by self-care and parental stress. Mothers who demonstrated a high degree of anxious attachment were found to demonstrate less positive parenting and more harsh parenting, the relationship was partially mediated by self-care in that the more self-care mothers reported the
less stress they reported and the better their quality of parenting. Avoidant attachment was not
directly related to parenting but moderated the relationship between anxious attachment and self-
care, with self-care relating to parenting stress which related to quality of both harsh and positive
parenting. Overall, these results were found to show important relationships between parents use
of self-care, parental stress, and attachment style as these relate to parenting behaviors.

Observed parenting behaviors in this sample were found to be skewed with most mothers
demonstrating high levels of positive parenting behaviors and low levels of harsh parenting
behaviors, similar to findings in another study of largely minority parents with school-aged
children with ASD using the same measure of observed parenting (Donnelly, 2015). Considering
the elevated risk for negative parenting for children with disabilities, this is a positive outcome
(Jones et al., 2012). Mothers in this sample reported higher levels of stress (20.5% above the
cutoff) and maternal depressive symptoms (10% above the cutoff vs. 7% above the cutoff)
compared to normative samples, consistent with the literature on parents of children with ASD.
However, these parents demonstrated adequate levels of social support as evidenced in a post
hoc test to see if social support differed from normative samples on the ISEL-12. In contrast to
literature for parents of children of ASD where they can lack social support due to the presence
of a disability. This may be due to the demographics of the sample (largely financially
comfortable, in stable relationships, and well educated) as well as the type of school setting the
children and families are in. The children are well cared for 30 hours per week. They may be
more able to engage with other parents of children with disabilities and utilize a trained
professional staff whose focus is young children with ASD.

Self-Care and Quality of Parenting

Self-care was not related to positive parenting directly and instead was fully mediated
through parental stress. Mothers use of self-care demonstrates a direct relationship with how
much stress they experience. Since mothers of children with ASD are some of the most highly stressed parents, identifying areas to target stress specifically may be significant for their well-being. In addition, stress related to quality of parenting. Those parents who demonstrate a lower level of parenting stress were better able to engage in supportive parenting including offering emotional support, providing scaffolding and quality instruction, as well as minimizing the amount of psychologically harsh tactics used.

Self-care also related to harsh parenting, although the relationship was not as strong. Again, mothers who engaged in a high degree of self-care demonstrated less parenting stress. However, parent’s level of stress related to self-care in the opposite direction as positive parenting, such that individuals with a higher level of stress demonstrated more harsh parenting. Parents’ who are experiencing high levels of stress may be more likely to engage in maladaptive parenting strategies such as corrupting/exploiting, intrusiveness, spurning, and others. However, if parent’s can engage in more self-care they may be better able to reduce their stress, potentially reducing the risk for engaging in these behaviors.

Considering the significant correlations between self-care, stress, and depressive symptoms, the relationship with depression on these variables was also explored. First, examining the same relationship between self-care, stress, and quality of parenting, mother’s depressive symptoms were included as a moderator between self-care and stress as one may expect the level of depressive symptoms to impact the amount of self-care parents may engage in. This relationship was not significant and depressive symptoms did not serve as a significant moderator. However, when depressive symptoms were included as a mediator in a casual model, the impact of depression was significant. Self-care was significantly related to quality of parenting for both positive and harsh parenting in a mediational model with higher levels of self-care relating to lower levels of maternal depressive symptoms, which related to lower levels of
parental stress, which related to more instances of positive parenting and fewer instances of harsh parenting. Thus, parents who engage in self-care may demonstrate fewer depressive symptoms and lower levels of parental stress. Parents may then be better able to engage in positive parenting strategies and engage in fewer harsh parenting strategies as they may be less reactive, better able to engage with their children, and better able to manage their own well-being. This model explained 3% more of the variance for positive parenting and 6% more of the variance for harsh parenting, indicating that depression should be included in future models and interventions when examining self-care, stress, and observed parenting.

Further exploration of the relationship between these variables included reverse directionality exploring whether parents who demonstrated a high degree of positive parenting had fewer symptoms of depression, leading to less parental stress, which may then allow parents to engage in more self-care including better quality of sleep, better diet, and less smoking. Individuals who demonstrated high levels of positive parenting reported fewer symptoms of depressive symptoms and this related to lower levels of stress, however, these did not relate to self-care. Harsh parenting did not relate to depressive symptoms; however, it did relate to levels of parental stress, which is in turn related to self-care. When depressive symptoms replaced stress in the model, the same general results were found. Thus, the harsher parenting tactics a parent engages in, the more highly stressed they are, potentially exacerbating symptoms of depression, although this does not significantly relate to their engagement in self-care. Parents who demonstrate harsh parenting and are more highly stressed with higher levels of depressive symptoms may be unable to devote time and energy to their own well-being.

Self-care was also significantly related to quality of parenting through maternal depressive symptoms and parental stress. Within this study there was a large range of depressive symptoms with mothers demonstrating no symptoms of depression to mothers who demonstrate
high levels of depressive symptoms. Mothers who demonstrated poor self-care demonstrated higher levels of maternal depressive symptoms. Although a symptom of depression is frequently utilization of less self-care, when maternal depressive symptoms were examined as a predictor of self-care there were no significant relationships. Thus, in this study it appears that poor self-care relates to more depressive symptoms. This relationship may also be influenced by other factors such as severity level of a child’s diagnosis, parent’s use of social support, and other variables not controlled for in this study.

Overall, there appear to be significant relationships between self-care and quality of parenting particularly when examined through a mediator of parental stress and maternal depressive symptoms. These relationships are significant for both positive and harsh parenting. Considering the few instances of harsh parenting in this population but potentially significant results, there is evidence for continued exploration of this relationship which may be even more impactful in other samples with more diverse parenting skills. Furthermore, it demonstrates a significant need to design and evaluate interventions for parents of children with ASD which focus on strategies to reduce parental stress and maternal depressive symptoms, such as through increased self-care, to see if they can improve the quality of parenting, and improve maternal well-being.

**Attachment Style**

Attachment style in this sample was found to demonstrate a similar range when compared to other normative samples. 74% of participants were secure (n=34), 13% were dismissing (n=6), 4% were preoccupied (n=2), and 8% were fearful (n=4). In normative samples, most individuals are typically secure (47-57%), followed by dismissing (18%), fearful (15-21%), and lastly preoccupied (10-14%) (Bartholomew & Horowitz, 1991). In this sample, the numbers were
similarly distributed although there appear to be a higher number of mothers with secure
attachment than in a typical normative sample.

Attachment style was significantly related to parent’s use of self-care. Examining
attachment style through anxious attachment moderated by avoidant attachment allows for the
four styles of attachment to be evaluated. Mothers who are highly preoccupied (high in degree of
anxiety and low on avoidance) engaged in the most self-care. Due to the parents’ high degree of
anxiety they may be engaging in the most self-care as they are seeking out as many strategies as
possible to try and manage their own worries and fears. Mothers with secure and dismissing
attachment styles or mothers who are low on anxiety (and varying degrees of avoidance)
demonstrate an average amount of self-care, meaning they may utilize self-care strategies more
than anxious preoccupied mothers. It may be that mothers who are avoidant are only utilizing
one type of self-care (behaviors which allow them to disengage from parenting such as exercise
or smoking) and do not engage in the other types of self-care, reducing the number of strategies
parents use. Secure mothers may need less self-care due to use of other positive strategies for
managing their emotions and health. This should be explored in further research. Mothers who
demonstrate a fearful attachment style engaged in the least amount of self-care. These parents
may be the most disorganized with regards to their care and may engage in more negative and
less positive self-care behaviors. They may also not know what to try to better handle the stress
of parenting so engage in nothing.

Parents who demonstrated an anxious attachment style were found to demonstrate
significant relationships with quality of parenting as expected (see Table 10). Parents with a
preoccupied attachment style were found to demonstrate the fewest instance of positive parenting
and the most frequent instances of harsh parenting. They also showed high levels of parental
stress and the highest amount of self-care, however showed the lowest level of depressive
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symptoms. These factors were also found to relate to each other as anxious attachment and avoidant attachment style moderated the relationship with self-care. Mothers who demonstrated high levels of anxious attachment demonstrated the most self-care, followed by those who were dismissing and secure, with mothers who were fearful using the least self-care. In this study parents who demonstrate an anxious attachment style were more prone to high levels of maternal parenting stress, which was then related to quality of parenting. When parents experience a high level of anxious attachment, they may demonstrate elevated levels of stress, and are then less able to engage in the skills necessary to promote a positive, caring and emotionally supportive environment for their children, demonstrating fewer instances of positive parenting, and more instances of harsh parenting.

Contrary to hypothesized results, avoidant attachment style in parents did not directly relate to quality of parenting as there were no correlations between avoidant attachment and quality of parenting, differing from those mothers with anxious attachment styles. Past research has shown that parents with avoidant attachment styles demonstrate more instances of negative parenting and fewer instances of positive parenting as individuals who demonstrate an avoidant attachment style report difficulty with closeness in relationships and responding in emotional ways with others. Mothers who demonstrate an anxious attachment style demonstrate few to no relationships with quality of parenting through both observed and self-report samples. However, this was not observed in this sample as most relationships with quality of parenting were found between mothers with anxious attachment and not avoidant attachment style. Regarding harsh parenting, although this may be related to the few instances of harsh parenting in this sample, there may be a relationship due to the presentation of a child with autism and the need for emotional closeness. Children with ASD may require and seek out less emotional closeness with their parents or engage in emotional relationships in a different way than a typically developing
child. Parents who demonstrate difficulty with closeness may be able engage in fewer harsh parenting tactics and more positive parenting behaviors with a child who seeks out emotional relationships in a different way as they will be able to feel less threatened by the emotional relationship with their child. Mothers who are anxiously attached however, prefer to seek out emotional relationships with other and may need more closeness and reciprocity from their children. Children with ASD have a hard time understanding social ques and may need less comfort or assurance from their mothers, including things such as physical touch, seeking out closeness, or emotional support. For anxiously attached mothers this may activate their attachment insecurity and lead to more instances of negative parenting.

Attachment style and self-care may also relate and influence quality of parenting. Secure parents in this study demonstrated the most frequent instances of positive parenting and the fewest instances of harsh parenting, which may relate to use of self-care. Although mothers who were secure did not demonstrate the highest degree of self-care they may already have necessary skills in order to parent well and while benefit from self-care, do not rely on it. Whereas mothers who were highly anxious demonstrated the highest uses of self-care and may be seeking out any type of support they can find. Interestingly, despite the high uses of self-care, mothers who were highly anxious demonstrated the least positive and most harsh parenting. With regard to avoidant attachment, mothers who were dismissing demonstrated a low amount of self-care, but demonstrate a high degree of positive parenting and low levels of harsh parenting. Mothers who are avoidantly attached may have other strategies which help to reduce levels of harsh parenting, such as disengaging from parenting. Therefore mothers with a high level of attachment security may benefit the most from self-care, and are better able to engage in high quality parenting. This relationship could also be due to other unexplored factors in this study. Perhaps mothers who are
secure benefit more from social support and when that is factored in these mothers do demonstrate better parenting, although this was not examined in this study?

Attachment style may also be related to number of depressive symptoms. Research has shown individuals who demonstrate anxious attachment are more at risk for high levels of depression (Berant et. al, 2001; Mikulincer et al., 1999). This was somewhat represented in this sample as five of the twelve mothers who demonstrated higher than average levels of depressive symptoms exhibited an insecure attachment style. Four of these mothers were fearful in attachment, with two of those mothers demonstrated the highest degree of depressive symptoms (moderate symptoms of depression). One of the mothers who were above average in depression was classified as having a dismissing attachment style and seven mothers were securely attached.

Individual and Family Factors that Influence Parenting

Various characteristics were found to be significantly related to mothers’ parenting behaviors. Maternal depressive symptoms, although originally hypothesized as a control variable, demonstrated a significant relationship with various study variables which showed relationships with quality of parenting. Mothers who demonstrate higher levels of depressive symptoms demonstrated less self-care, more stress, as well as more insecure attachment (avoidant and anxious). Other characteristics which influenced quality of parenting included mothers who reported having more adults living in home, a proxy for caregiving support, were observed to demonstrate more positive parenting behaviors. This relationship included mothers who reported more than two adults at home, and at least one mother with another adult in the home who anecdotally reported living apart from her spouse. Previous studies have demonstrated more people living in a home can be associated with negative effects if there is overcrowding, (Gove, Hughes, & Galle, 1983), however the present study found positive relationships between observed parenting behaviors and a report of more adults living in the home (often two or three
adults in total, with one mother reporting eight). Although inconclusive, results from this dissertation may indicate that mothers with additional caregiving adults providing support in their home, demonstrate more supportive and positive parenting to their child. This may be related to the high needs of an ASD population as mothers may feel the additional support is helpful for caring for their child. Number of adults in the home was also positively related to more symptoms of depression. Interestingly, number of adults in the home was not related to parent’s use of self-care which may indicate parents use of self-care is independent of how many other adults they have helping with their child.

Race/ethnicity was also related to positive parenting behaviors, with mothers identifying as white demonstrating more positive parenting behaviors, and mothers identifying as Hispanic showing fewer instances of positive parenting. Mothers who were white also demonstrated less harsh parenting behavior, while mothers who were Hispanic were nearly significant for demonstrating more harsh parenting. Cultural differences in parenting, particularly for Hispanic mothers, are well-documented and are important to consider how these may be influencing the parent-child relationship. Cultural norms and practices may relate to gender roles within a family, including who is likely to provide structure and discipline (mothers or fathers), and levels of parents’ acculturation (Barker, Cook, & Borrego, 2010; Cabrera, Shannon, West, & Brooks-Gunn, 2006). Hispanic parents may also be laxer in their discipline (Long, 2004). Latina mothers of children with ASD have also been found to report lower levels of parental distress and higher levels of psychological well-being than non-Latina white mothers (Magaña & Smith, 2006), although in this study there was no relationship between race and parental stress or self-care. Findings from the present study suggest the importance of considering cultural practices as a factor in parenting behaviors.
**Strengths of the Study**

The present study contributes to the previously limited research on observational studies of parent-child interactions for mothers of children with ASD. One major strength of this research is the use of the ADOS-2, a gold standard diagnostic system, which confirmed the diagnoses of ASD for each of the participating children. Another strength was the presence of teacher, parent, and independent researchers’ observations and reports on child characteristics and observation of behavior allowing for a reduction in the bias typically associated with self-report measures alone. These included teachers’ ratings of child’s communication level (not related to observed parenting and thus omitted from this study); trained coders’ ratings of parenting behaviors in situations designed to mimic naturalistic parent-child interactions, blind to hypotheses of the study; and mothers’ self-report. Yet another strength includes the fact there are only a handful of studies that examine observed parenting and self-reported attachment style. Most of the literature on parenting and attachment style is subject to method bias as it relies on parents report of parenting behavior and maternal attachment. Furthermore, this study examines these relationships in a population of mothers of children with ASD for the first time.

Additionally, characteristics of the recruited sample reduce the amount of variance between families that would otherwise need to be controlled for. First, all participating children are in a specialized full day school program for children with ASD, where they receive a high level of intervention and services targeted toward their diagnoses utilizing ABA therapies. Due to the attendance at school, each of the parents also receive 6 hours a weekday of time away from this child with a disability. Second, families have access to a school social worker and on-site parent coordinator who have extensive training and experience in children with ASD. Although these factors limit the generalizability to other populations who do not have these services, they provide strong control over potential variance between families.
Limitations of the Study

One limitation of the study is generalizability of the sample. Participants for the study were from a sample of children who received a diagnosis of ASD in early childhood. These children received an ASD diagnosis at an earlier age relative to many children with ASD and as such began intensive treatment at an early stage (Zablotsky, Colpe, Pringle, Kogan, Rice, & Blumberg, 2017; N= 1287; mean age of diagnosis = 5.23; mean age of first services = 3.90). In addition, the children were enrolled by their parents at a therapeutic preschool that provides an intensive and extremely effective intervention shown to improve social and academic functioning (Selinske, Greer, & Lodhi, 1991). Second, early identification of ASD tends to be associated with a more severe presentation of the disorder, further supported by the distribution of ADOS-2 and CARS-2 severity scores in this sample, so participants in this study may not represent the full spectrum of functioning in ASD as they are likely on the more severe end of functioning. Thus, generalizability is limited when considering the spectrum of functioning for children with ASD, and conclusions regarding all children with ASD and their mothers should be interpreted with caution.

Another limitation is the exploratory nature of many of the questions asked in this study. Due to a lack of existing research on self-care and its relationship to both quality of observed parenting as well as self-reported attachment style many of these hypotheses were exploratory in nature. Self-care was narrowly defined in content as it only explored health behaviors, instead of being broadly defined to also include social support, time of from parenting, spiritual practices, etc. Spiritual practices merit further exploration in self-care studies as they may have significant relationships with both attachment style as well as the type of self-care an individual may utilize. Spirituality has been shown to relate to individuals’ attachment style, with some individuals identifying religious figures as attachment figures, or those who are religious demonstrating a
more secure attachment style (Granqvist, Mikulincer, & Shaver, 2009). Additionally, those who engage in spiritual practices may identify more social support from religious communities or alternative methods of self-care. Social support may also impact parenting quality as it could allow parents to engage in more effective parenting and have a significant reduction in parenting stress. Time-off from children may have a similar impact on how parents manage stress as time spent with children with disabilities can increase stress. Although, these mothers are already spending 6+ hours a day away from this child due to the support of their child’s preschool, how much other respite time they have should be explored. Attachment style may also relate to the types of time off they take with mother who demonstrate avoidant attachment choosing more distancing types of self-care in order to better meet their attachment needs, while anxious mothers may chose more self-care which encourages or involves the support of others.

Furthermore, the study only examined self-care in terms of frequency and did not examine how the types of self-care may be related to quality of parenting or attachment style. The study is also limited by the small sample size and the resultant low power to test hypotheses as seen in the way that many relationships approached statistical significance.

Although a strength of this study was many demographic and child characteristics assessed, some critical information was not collected. Omitted data include: (a) the number and ages of other children in the family, as mothers who have older children may feel more confident in their role as a parent or those without other children may have more time to engage in self-care; (b) the presence of another child in the home with a disability, as this can add significant stress on a parent, (c) whether the mother was pregnant or recently pregnant at time of data collection, which may affect reporting of mood and stress levels; and (d) specifications of mothers’ current employment status or occupation. Additional factors may include other
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psychological diagnoses such as maternal anxiety or whether or not the mothers have a diagnosis of ASD themselves, which may affect how mothers interact and parent their children.

Certain parenting behaviors measured in this study may have been underreported due to the coding system utilized in the observed parenting tasks. For example, in order to accurately assess parental intrusiveness more specific and detailed behavior may have needed to been observed between the mother and child including back and forth interaction, including nonverbal cues from the child. Other factors which this study did not control for is the level of parent training provided by the school these children attend. Due to the nature of the school, these parents have been trained to interact and engage with their children in specific ways. For example, these parents are very well trained in behaviors such as planned ignoring which was not controlled for in the coding of parenting behaviors.

Future Directions

Findings from this dissertation demonstrate the need for additional research to improve our understanding of the impact of self-care and attachment style on observed parenting. First, interpretability of results would be greatly enhanced through a comparison to other groups of children and parents. Due to the unique nature of interactions between parents and their children with ASD, the interpretation of these findings would be aided by a comparison sample of a group of typically developing preschoolers and preschool children with disabilities other than ASD, particularly those who have been referred to Early Intervention or the Committee on Preschool Special Education. Another important direction is to include fathers in the study to assess paternal well-being and parenting quality.

Autism severity was not related to any mediator or dependent variable in this study, however, future research should explore the relationship between attachment style and quality of parenting when moderated by attachment severity. Mothers who demonstrate avoidant
attachment styles may demonstrate higher quality of parenting with children who demonstrate more severe ASD and require less emotional closeness. The same may be true for mothers who are anxiously attached demonstrating better parenting with children who are less severe on the spectrum of ASD.

Additionally, considering the differences in attachment style in this sample and the high number of mothers who demonstrate a fearful attachment, future research should explore if the difference in attachment related anxiety is related to this specific disability. Research should also examine if there is a difference for mothers of children with other disabilities with regard to attachment style. There may be an interaction by diagnosis with mothers of children with ASD demonstrating more attachment related insecurity when compared to mothers of children with other types of disabilities.

Furthermore, because this study was of a cross-sectional design, conclusions regarding direction or causality of the relationships between maternal characteristics and behaviors cannot be drawn. Mothers’ depressive symptoms, use of self-care, and feelings of stress may be influenced by other factors occurring in parents lives not currently measured. Greater understanding of these relationships between self-care behaviors, attachment style and quality of parenting should be gathered through study designs that assess parenting behaviors before and after intervention. Interventions should focus on promotion of self-care, reduction of stress, and psychoeducation on changing parenting behaviors. Moreover, the adapted PMCS-ASD measure of observed parenting behaviors for children with ASD can be further adapted to utilize the measure for clinical use, such as providing an opportunity for parents to receive immediate in-vivo feedback on their parenting skills as a one-session initial intervention.

Results from the measure of self-care demonstrated significant relationships with parental stress and their effect on quality of parenting. Continued improvement of this measure is
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warranted. This study found parents use of self-care demonstrated a reduction in stress but further exploration on which specific aspects of self-care are demonstrating the most impact on parent’s wellbeing. Furthermore, exploration of individual child characteristics such as child’s developmental level, temperament, and other personality factors and parent’s ability to engage in self-care is an important area to explore. Are mothers whose children demonstrate more severe diagnostic presentation of ASD (as measured by ADOS-2 module and Vineland) less able to engage in self-care? If so what types of self-care can/do they engage in? The study would also benefit from exploration of the relationship between the mother and child dyads. Mothers who report having a positive and appreciative relationship with their child may demonstrate more positive parenting and perhaps lower stress and more effective utilization of self-care. Mothers who may feel a more negative relationship with their child, or sense of loss around having a child with a disability vs. a typically developing child, may demonstrate higher stress, less self-care, or a difference in quality of parenting.

Future research should also assess the relationship of individual attachment style on use and type of self-care. Exploratory analysis in the study demonstrated interesting relationships with Bartholomew’s categories of attachment and parents use of self-care, however, due to the small sample size further exploration is needed in this area. What type of self-care do parents of each four categorical attachment styles engage in? Is there a difference across styles? Future research should also continue to assess how attachment style and self-care relate to observed parenting behaviors to continue to improve clinical understanding of behavioral and parental care for parents of children with ASD.

Clinical Implications

Evidently, there is a relationship between self-care and observed behaviors as well as attachment style and observed behaviors. Moreover, parenting stress was found to significantly
impact parenting behaviors, particularly in their interaction with other variables. As data for this study was conducted in a specialized preschool for children with disabilities, this study is uniquely situated to inform intervention guidance for the participating population.

Although past research has demonstrated significant relationships with stress and quality of parenting, no studies have examined this relationship through the variable of self-care. This is significant as in this study parent’s use of self-care was found to relate to parent’s level of stress and how it impacted parenting behaviors. As such, parents may benefit from interventions that focus on reducing feelings of parenting stress and providing support for parents to be able to engage in self-care. Interventions have shown to demonstrate promising results for a reduction of parental stress using mindfulness strategies for parents of preschool aged children with developmental disabilities (Neece, 2014), while other interventions targeted at helping parents learn skills to manage their children’s behavioral difficulties have influenced both child outcomes and reduced parents stress (Karst & Van Hecke, 2012). Other promising interventions for stressed mothers of children with disabilities include standard service models including respite care and case workers, organization of parent-led support networks, and cognitive behavioral group interventions which demonstrates the strongest evidence (Catalano, Holloway, & Mpofu, 2018). Most parent training programs target interventions for mothers in terms of their child’s negative behaviors as opposed to their own parenting skills (Brookman-Frazee, Stahmer, Baker-Ericzen, & Sai, 2006; Dababnah & Parish, 2014).

Parents of participating students in the study who have been identified as highly stressed, would likely benefit from targeted interventions to promote overall well-being and quality of parenting. Included in this intervention could be psychoeducation and provision of support for parents to engage in better self-care strategies, to further reduce their stress and improve quality of parenting.
Mothers maternal depressive symptoms were also found to be particularly high in this sample and was related to self-care and quality of parenting. Participants in this study are at high risk for higher levels of depressive symptoms potentially due to the developmental delays of their children and high stress parenting situation. Mothers would benefit from interventions targeting their emotional well-being as well as provision of strategies and support to reduce depressive symptoms if present. Programs such as those listed above targeting stress and improving parenting skills may also be beneficial for depressive symptoms including mindfulness-based stress reduction (Dykens, Fisher, Taylor, Lambert, & Miodrag, 2014). Other interventions shown to be successful with mothers of children with ASD include cognitive behavioral therapy with home visits (Ammerman et al., 2011; Tandon, Leis, Mendelson, Perry, & Kemp, 2013), as well as acceptance and commitment group interventions (Fung, Lake, Steel, Bryce, & Lunsky, 2018).

**Conclusion**

As the rates of children with ASD have risen, research in areas of education and behavior management for children has increased exponentially. In addition to research on child’s functioning, parental characteristics and well-being have also become a focus of research due to the high needs of this population and the significant impact on parental wellbeing. However, there has been limited research studying parent-child relationships and interactions in observational (as opposed to self-report) settings (e.g., Donnelly, 2015). This dissertation extends the literature by exploring the relationships between mothers use of self-care, self-reported attachment style, and quality of parenting as observed through parent-child interactions. Mothers in this sample demonstrated high quality parenting despite on average higher levels of depression and parenting stress. Taken together the results suggest self-care is a promising target for intervention as the more self-care mothers engaged in the less stress the reported and the higher
quality of parenting they demonstrated. Adding depression to the model as another mediator further improved the strength of the relationship between stress and quality of parenting. Attachment powerfully related to self-care and parenting and thus should be taken into consideration when designing interventions to improve self-care, reduce stress and improve parenting in a population of parents of children with ASD.
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# Appendix A

## Demographic Tables

Table A1. *Demographic Characteristics of Participating Mothers (N = 44)*

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-34</td>
<td>13</td>
<td>29.6</td>
</tr>
<tr>
<td>35-39</td>
<td>21</td>
<td>47.7</td>
</tr>
<tr>
<td>40-47</td>
<td>10</td>
<td>22.8</td>
</tr>
<tr>
<td>Highest Education Received (n=43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School or Equivalent</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td>Some college or Associate’s Degree</td>
<td>7</td>
<td>18.7</td>
</tr>
<tr>
<td>Bachelor's degree (e.g., BA, BS)</td>
<td>17</td>
<td>39.5</td>
</tr>
<tr>
<td>Master's, professional or doctoral degree</td>
<td>16</td>
<td>37.2</td>
</tr>
<tr>
<td>Household Income (n=41)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than $25,000</td>
<td>4</td>
<td>9.8</td>
</tr>
<tr>
<td>$25,000 to $74,999</td>
<td>6</td>
<td>14.6</td>
</tr>
<tr>
<td>$75,000 to $99,999</td>
<td>10</td>
<td>24.4</td>
</tr>
<tr>
<td>$100,000 to $149,999</td>
<td>5</td>
<td>11.4</td>
</tr>
<tr>
<td>$150,000 to $199,999</td>
<td>5</td>
<td>11.4</td>
</tr>
<tr>
<td>$200,000+</td>
<td>10</td>
<td>24.4</td>
</tr>
<tr>
<td>Race/Ethnicity (n=43)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>19</td>
<td>44.2</td>
</tr>
<tr>
<td>Hispanic/Latino/ Spanish Origin</td>
<td>12</td>
<td>27.9</td>
</tr>
<tr>
<td>Black</td>
<td>8</td>
<td>18.6</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>4</td>
<td>9.3</td>
</tr>
<tr>
<td>Marital Status (n=44)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Currently Married/Committed Partnership</td>
<td>34</td>
<td>77.3</td>
</tr>
<tr>
<td>Divorced/Separated</td>
<td>4</td>
<td>9.0</td>
</tr>
<tr>
<td>Never married/partnered</td>
<td>6</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Table A2. *Self-Care Variables (N=45)*

<table>
<thead>
<tr>
<th>Overall Sleep Quality</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Sleep</td>
<td>13</td>
<td>28.3</td>
</tr>
<tr>
<td>Fairly Good Sleep</td>
<td>23</td>
<td>50.0</td>
</tr>
<tr>
<td>Very Good Sleep</td>
<td>9</td>
<td>19.6</td>
</tr>
<tr>
<td>Average Hours of Sleep per Night</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.5</td>
<td>2</td>
<td>4.3</td>
</tr>
<tr>
<td>4.0</td>
<td>1</td>
<td>2.2</td>
</tr>
<tr>
<td>4.5</td>
<td>1</td>
<td>2.2</td>
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</tr>
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<td>3</td>
<td>6.5</td>
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<tr>
<td>Time</td>
<td>Count</td>
<td>Percentage</td>
</tr>
<tr>
<td>--------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>6.0</td>
<td>8</td>
<td>17.4</td>
</tr>
<tr>
<td>6.5</td>
<td>5</td>
<td>10.9</td>
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<tr>
<td>7.0</td>
<td>11</td>
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<td>10.9</td>
</tr>
<tr>
<td>8.0</td>
<td>4</td>
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</table>

**Frequency of Meal at Home**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Never to a Few Times a Month</td>
<td>7</td>
<td>15.2</td>
</tr>
<tr>
<td>Every Week</td>
<td>9</td>
<td>19.6</td>
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<tr>
<td>Several Times a Week</td>
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<tr>
<td>Almost Every Day</td>
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**How Many Times Eat Breakfast**

<table>
<thead>
<tr>
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<th>Percentage</th>
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<tr>
<td>Did Not Eat Breakfast</td>
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<tr>
<td>1 to 3 Times Per Week</td>
<td>14</td>
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<tr>
<td>Every Day</td>
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**Frequency of Meal from Fast Food Restaurant**

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<thead>
<tr>
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<tbody>
<tr>
<td>At Least Once a Week</td>
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<tr>
<td>At Least Once a Month</td>
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<tr>
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**Frequency of Self to Eat Fruit**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Count</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>One Serving Most Days</td>
<td>2</td>
<td>4.3</td>
</tr>
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<td>One Serving Every Day</td>
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<td>30.4</td>
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<tr>
<td>Two Servings Per Day</td>
<td>19</td>
<td>41.3</td>
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<td>13.0</td>
</tr>
<tr>
<td>Five or More Servings Per Day</td>
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<td>10.9</td>
</tr>
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</table>

**Frequency of Self to Eat Vegetables**

<table>
<thead>
<tr>
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<th>Count</th>
<th>Percentage</th>
</tr>
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<td>Three or More Servings Per Day</td>
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**Told to Lose Weight**

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<td>No</td>
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**Smoke**

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**Average Hours of Exercise Per Week**

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Appendix B

Recruitment Letter
Improving Parenting and Enhancing Maternal Wellbeing in Mothers of Preschool Children

Having a preschool child can be stressful. In the past the Keller schools have offered parents training in how to teach a child. We would like to offer more support for parents as new research indicates that additional supports may improve parents and children’s lives. We are working with parent coordinator, Barbara Kimmel, and parent educators at the Rockland campus, to collaboratively create a parenting support program with Keller parents. We can’t do this without your help! To that end we invite you to participate in our research project on parenting preschool age children and its relationship to the wellbeing of their mothers.

Who is eligible to participate?
Moms who speak English and their 3-5 year old attending the Fred Keller school.

What is involved?
A one-time 70-minute session that includes the following parent activities:

- a) 20 minute parent-child interaction task that incorporates some of the routine challenges of parenting – waiting, picking up toys, playing together, teaching your child, helping your child cope when mildly upset;
- b) 40-50 minutes of questionnaires on child behavior, parenting, and your opinion about supportive programs for parents;

Are there benefits to taking part in the study?
There are no benefits to participation.

Will I be paid for my participation?
We will pay you $35 for your time.

Please consider participating in this study. If you have any questions about the study, please contact co-investigators, Marla Brassard, PhD, at 212 678 3368 or Laudan Jahromi, PhD at 212 678 3821.
Appendix C

INFORMED CONSENT

Research Title: Improving Parenting and Enhancing Maternal Wellbeing in Mothers of Preschool Children

DESCRIPTION OF THE RESEARCH:

If you speak English and are the mother of a 3-5 year old child attending the Fred Keller schools, you and your child are eligible to participate in a study of how observed parenting is related to mother’s wellbeing and child characteristics in order to develop interventions for parents that improve parenting as well as enhance maternal wellbeing.

If you agree to participate you and your child will attend a one-time session that includes the following parent and parent/child activities:

a) 20 minute parent-child interaction task that incorporates some of the routine challenges of parenting – waiting, picking up toys, playing together, teaching your child, helping your child cope when mildly upset;

b) 40-50 minutes of questionnaires on child behavior, parenting, self-care activities such as your sleep, diet, exercise, alcohol use, and your opinion about the questionnaire and supportive programs for parents.

We will also record 4 pieces of information from your child’s file at Keller:

a) the number of objectives your child met over six months of the school year on the CABAS® International Curriculum and Inventory of Repertoires for Children from Preschool through Kindergarten (C-PIRK);

b) the rate of your child’s learning as measured by the ratio of learn units-to-criterion;

c) your child’s level of verbal behavior development (e.g., listener); and

d) any educational or psychiatric diagnoses in your child’s file (e.g., developmental delay, autistic spectrum disorder).

RISKS AND BENEFITS:

There are no direct benefits to participating in the study. There is no major risk to the research subjects. Minimal risk may include fatigue or boredom or discomfort if your child might get mildly upset. In addition, the questionnaire contains some very sensitive items, some of which may make you feel emotional discomfort. In instances when the researcher finds that you are at risk and in need of support, we have a psychologist present or on call and the researcher may also refer you to Fred S. Keller School social worker, Latasha Gamble, who will help you access resources in the lower Hudson Valley Region.

PAYMENTS:

We will pay you $35 for your time.
DATA STORAGE TO PROTECT CONFIDENTIALITY:

We will ensure your confidentiality by giving a unique identification number (and not name) to your and your child for your video, for your questionnaire, and for the information from the file review. This identification number is how we will record your information in our computer file for analyses. We will keep the identifiable consent forms in a separate, locked filing cabinet in the Co-PI’s office, which will be kept separate from the de-identified data. After we record the information from your child’s file we will destroy the link between your name and your identification number. No one affiliated with the Fred S. Keller School (FSK) will have access to the key linking your identity or that of your child to the unique identification number.

The videos and the computer file will be kept on a password protected and encrypted files in Professor Marla Brassard’s office 529D Thorndike and Professor Laudan Jahromi’s office 529I Thorndike. Only authorized members of the research staff will have access to this information. Information will only be used for professional purposes and will not include identifiable information.

TIME INVOLVEMENT:

Participation in this study will last approximately 60-70 minutes and will take place on one day.

HOW WILL RESULTS BE USED:

The results of this study will be used to design a parent support intervention for parents at the Keller Schools starting AY 2017-18, to write articles, and for dissertations. Feedback on overall results may be provided to the Fred S. Keller School. No feedback will be given on individuals.

ROLE OF THE PRINCIPAL INVESTIGATORS:

Co-Principal Investigators Laudan Jahromi, PhD (212 678-3321), and Marla Brassard, PhD, (212 678-3368) will work closely with Barbara Kimmel, Keller School parent coordinator and liaison, to make sure this research study is completed according to Institutional Review Board standards. For questions about the study, please contact the co-principal investigators at any time with questions.

PARTICIPANT’S RIGHTS

Co-Principal Investigators: Marla Brassard, PhD, Laudan Jahromi, PhD

Research Title: Improving Parenting and Enhancing Maternal Wellbeing in Mothers of Preschool Children

I have read and discussed the Research Description with the researcher. I have had the opportunity to ask questions about the purposes and procedures regarding this study.
- My participation in research is voluntary. I may refuse to participate or withdraw from participation at any time without jeopardy to future medical care, employment, student status or other entitlements.
- The researcher may withdraw me from the research at his/her professional discretion.
- If, during the course of the study, significant new information that has been developed becomes available which may relate to my willingness to continue to participate, the investigator will provide this information to me.
- Any information derived from the research project that personally identifies me will not be voluntarily released or disclosed without my separate consent, except as specifically required by law.
- For questions about the study, I can contact the Co-principal investigators Laudan Jahromi, PhD, 212 678-3821 and Marla Brassard, PhD, 212 678-3368 at any time.
- If at any time I have comments, or concerns regarding the conduct of the research or questions about my rights as a research subject, I should contact the Teachers College, Columbia University Institutional Review Board /IRB.
- The phone number for the IRB is (212) 678-4105. Or, I can write to the IRB at Teachers College, Columbia University, 525 W. 120th Street, New York, NY, 10027, Box 151.
- I should receive a copy of the Research Description and this Participant's Rights document.
- If video and/or audio taping is part of this research, I
  ( ) consent to be audio/video taped.
  ( ) do NOT consent to being video/audio taped. The written, video and/or audio taped materials will be viewed only by the principal investigator and members of the research team.

Written, video and/or audio taped materials
  ( ) may be viewed in an educational setting outside the research (for example, at a research conference presentation or in a graduate level course). This is an optional, additional level of consent that does not affect your participation in the research study.
  ( ) may NOT be viewed in an educational setting outside the research (for example, at a research conference presentation or in a graduate level course). This is an optional, additional level of consent that does not affect your participation in the research study.

- ( ) I agree to be contacted for possible participation in an hour long parent-child interaction at FSK within the next year for which I will be offered additional payment and child care
  ( ) I do NOT agree to be contacted for possible participation in an additional parent-child interaction.

- My signature means that I agree to participate in this study.

Participant's signature: ________________________________ Date: __/__/____
Name: ________________________________
If necessary:
My signature means that I agree to participate in this study.

I am the parent/legal guardian of ____________________________________________ and I voluntarily approve of his/her participation and I agree to participate myself.

Guardian's Signature/consent: ____________________________________ Date:____/____/____
Name: ____________________________________
Appendix D

Room layout for parent-child interaction procedure. Not drawn to scale.
Appendix E

Script for Parent-Child Interaction & Video Feedback Tasks

Procedure and Instructions

CONSENT MEETING

On the day of the Interaction Task, the parent will sign the consent form. [Prior to the day of the Interaction Task, parents will have received a recruitment letter and a copy of the consent form. A project staff member will speak to the parent by phone to walk through the consent form and address their questions].

PARENT-CHILD INTERACTION

Setup
Empty room – with child table and 3 chairs
3 sitting at table

1) Start recording video.
2) Parent Instructions. The parent, child, and interviewer are seated at a small (child-sized) table. The interviewer has an iPad from which he/she reads the script. While opening up the script on iPad say, “Ok, let’s get started. What did we ever do before iPads? I have all my work saved on this one! “. Next, tell the parent about the tasks. “First you two will build something together. Which type of blocks are best for your child: wooden blocks, Duplos, or Legos?” [Bring a Ziploc with the three block examples. Be sure to take it out with you when you leave the room for Competing Demands]. “Then, I will bring in some toys and ask you guys to play for a while. After that, I will come back and hand you this sheet [show parent the laminated clean-up sheet] to remind you to ask your child to clean up. When I hand you this sheet, please wait until I leave the room, then ask your child to clean up. [Hold up the sheet for the mom to read it. Point to the sentence about not cleaning up herself to highlight it for her]. Finally, please do not use last names on the video”.

3) Competing Demands Task (5 minutes). Tell the child, “Ok, I’m going to go get some blocks. Your mom really needs to finish filling out these papers before I come back. I’ll be right back!” Hand the clipboard with the demographic questionnaire [including the question about the child’s favorite prize for frustration task] to the parent and say, “It would be really great if you could try to finish this form before I get back”. Leave an iPad on the table with a “work” document (Word or Excel file) open.

4) Go into observation room, start timer, & make notes regarding interactions that may be difficult to see on the camera. Return to the room after 5 minutes of Competing Demands.
5) **Structured Task (5 minutes).** Bring out the appropriate structured task [We will confirm items via piloting; ultimately we want three bins that each contain appropriate blocks and model picture]:
   a. Nonverbal children/very low functioning children and children with fine motor difficulties – use basic (non-interlocking) blocks
   b. Children 5-6 with disabilities? – Use Duplo’s
   c. Children 3-5 typically developing and high functioning ASD? – Use Legos

6) “Now I’d like you and your mom to build something together. Mom, please teach [child’s name] how to build this [picture]. Here are the blocks and a picture of the model”. [Leave out the correct number of blocks to complete the model plus 10-15 additional blocks; no instruction book will be provided].

7) Go into observation room and continue to make notes about interactions that may be difficult to see on camera. If you see that the chosen blocks are not working for the dyad (too easy, too hard), go back into room with the appropriate alternative and say “Now, we’re going to try these blocks instead” and take away the inappropriate block set. After 5 minutes of structured task go in the room. Congratulate child on a job well done (“You did a nice job building!”).

8) **Free Play Task (5 minutes).** Move the blocks to the floor during free play. Set up toys for free play [We will confirm items via piloting]:
   a. Small basketball
   b. Magna Tiles
   c. Papers and crayons
   d. Brio trains or cars
   e. Make-believe play (dr. kit, for younger children use doll house doll props,)

9) Instructions for free play – “OK, let’s move to the floor now. Try to face this way, if possible. Here are some toys I’d like you to play with for a little while”. Name each toy as you take it out of the bin, “We have a basketball, some magna tiles, some paper and crayons, trains and cars, a doctor’s kit…”. Be sure to take all individual pieces out; spill all the (8) crayons out, all the pieces of the doctor kit, all the magna tiles. Make sure the dyad is sitting facing the camera before you leave.

10) Go into observation room and continue to make notes about interactions that may be difficult to see on camera.

11) After 5 minutes, enter the room and say, “Hey guys, I forgot to give this to your mom”. Hand the parent the laminated sheet indicating that the clean-up session is to start when you leave the room [Wording on sheet: “Please tell your child to clean up. Please don’t clean up by yourself”]. When the interviewer closes the door, this marks the beginning of Clean-Up task.

12) **Clean-Up Task (2 minutes).** After the child has fully cleaned up the toys (or 2 minutes of clean-up task, whichever comes first), re-enter the room. If the child has not finished cleaning up, quickly help them finish the clean up.

13) Next, the interviewer enthusiastically tells the child “You did such a great job today! I’m going to get you a prize!” When the interviewer returns with the prizes, this marks the beginning of the frustration task.

14) **Frustration Task (3 minutes).** The interviewer enters the room (leaving the door open so that the second interviewer can enter quickly) and presents the child with a small bag of their favorite food snack item (e.g., goldfish, chips) saying, “Thanks for doing such a
great job! For doing such great work, I have some [goldfish] for you! I know how much you love [goldfish]!” The interviewer hands the item to the child, immediately heads for the door, and as he/she exits, the second experimenter enters, announcing to the first interviewer “Wait, you can’t give him/her that”. The second interviewer takes the snack from the child, and says directly to the child, “I’m so sorry, but you can’t have that”. The interviewer looks apologetically at both the child and parent and leaves the child and parent in the room for 3 minutes. Go into observation room and continue to make notes about interactions that may be difficult to see on camera. If mom asks Interviewer 2 what she should be doing next, he/she will say “Let me go check where [Interviewer 1] went”.

After 3 minutes, the 1st interviewer re-enters the room and says. “Guess what? You can have the [goldfish] after all! You did such a super job today!”
## Appendix F


### Teaching Scoring Sheet (revised 1.9.17)

<table>
<thead>
<tr>
<th>Participant Code: ______________________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rater: ________________________________________</td>
</tr>
<tr>
<td>Date: ______________________________</td>
</tr>
</tbody>
</table>

### Codes

**Quality of Emotional Support**

1. **Mother’s Supportive Presence**
   - 1  2  3
   - Comments:

2. **Mutual Pleasure**
   - 1  2  3
   - Comments:

3. **Body Harmonics**
   - 1  2  3  4
   - Comments:

4. **Mother’s Mental Status**
   - 1  2  3  4
   - Comments:

5. **Mother’s Emotional Response to Task and Situation**
   - 1  2  3  4
   - Comments:
6. Parental Touching (circle all that occur)

0 1 2 3 4 5 6 7

Comments:

7. Denying Emotional Responsiveness

0 1 2 3

Comments:

Tally: Mild/moderate –
              Strong –
              Extreme –

Facilitation of Social/Cognitive Development

8. Quality of Instruction/Structure

1 2 3

Comments:

9. Respect for Child’s Autonomy

1 2 3 4 5

Comments:

10. Strategies for Maintaining Child’s Task Involvement

1 2 3 4 5

Comments:

11. Parental Intrusiveness

1 2 3

Comments:

Psychological Abuse

12. Spurning

0 1 2 3
Comments:
Tally: Mild/moderate –
      Strong –
      Extreme –

13. Terrorizing
0 1 2 3

Comments:
Tally: Mild/moderate –
      Strong –
      Extreme –

14. Isolating
0 1 2 3

Comments:
Tally: Mild/moderate –
      Strong –
      Extreme –

15. Corrupting/Exploiting
0 1 2 3

Comments:
Tally: Mild/moderate –
      Strong –
      Extreme –

Child Codes

16. Child Negativity Toward Caregiver
1 2 3

Comments:

17. Child Experience of the Session
1 2 3

Comments:
18. Child’s Level of Engagement
   1  2  3  4
   Comments:

19. Child’s Engagement of Mother
   1  2  3  4  4
   Comments:

20. Child Aggression Tally
   Physical –
   Verbal –
   Comments:

   Code Explanations

Quality of Emotional Support

1. Mother’s Supportive Presence (summary code)

   A Mother scoring high on this scale expresses positive regard and emotional support to
the child. This may occur by acknowledging the child’s accomplishments on the task or
unrelated task the child is doing (e.g., building a house of blocks), encouraging the child with
positive emotional regard (e.g., “you’re really good at this,” “you got another one right”) and
various other ways of letting the child know that he/she has her support and confidence to do
well in the setting. If the child is having difficulty on the task, the mother is reassuring and calm,
providing an affectively positive “secure base” for the child, perhaps leaning closer to the child
to give a physical sense of support.

   A mother scoring low on this scale fails to provide supportive cues. She might be passive,
uninvolved, aloof, or otherwise unavailable to the child. She may also appear impatient, as if she
feels like the activity is a waste of her time and she rather be doing something else. Such a
mother also might give observers the impression that she is more concerned about her own
adequacy and how she is presenting to the camera, rather than displaying concern about the
child’s emotional needs.

   A potential difficulty in scoring this scale is to discount messages of mothers that
seemingly are supportive in verbal content but are contradicted by other aspects of
communication (e.g., the mother seems to be performing a supportive role for the camera and not
really engaged in what the child is doing or feeling). Signs of such questionable support are:
improper timing of support, mismatch of verbal and bodily cues, and failure to have the child’s
attention in delivering the message. These types of supportive messages would not be weighted
highly because such features suggest that the mother’s supportive presence is not a ‘sincere’
aspect of their interaction outside the laboratory setting.
Conversely, the mother may seem more supportive than she appears in this situation because she has approached this task as a test of the child’s achievement and has not used as much support as she might have. Yet, the qualitative features of her support would merit a high score.

Codes:
1. **Low** – Mother provides little or no emotional support to the child. The mother may be aloof and/or unavailable. She may also be hostile towards a child who shows he/she is in need of support. If support is displayed, it is minimal and not timed well, either being given when the child does not really need it, or only after the child has become upset. The consistency of this support may be uneven, so as to make the mother unreliable as a supportive presence.
2. **Moderate** – This mother does an adequate job of being available when her child needs support. She may lean closer as the child shows small signs of frustration and praise the child’s efforts to show that she is available and supportive, but inconsistency in this style makes her support unreliable as a supportive presence to the child. Additionally, she may have failed to provide support at crucial times in the session (i.e., when support was needed by the child).
3. **High** – Mother skillfully provides support throughout the majority of the session. She establishes herself as supportive and encouraging toward the child and provides support when the child needs it. As the child experiences more difficulty, her support increases in commensurate fashion. If the child is having difficulty, she finds ways to structure the problem to reward some sort of success by the child and encourage whatever solution the child can make. She may have minor lapses, but for the most part, she is emotionally supportive and reinforces the child’s successes.

2. **Mutual Pleasure (summary code)**

Dyad’s emotional connectedness and shared experience of mutual pleasure.

Codes:
1. **Minimal** – The dyad shows no/minimal signs of a positive emotional connection. There are no shared smiles and there may be no mutual eye contact. Mother and child seem to be hesitant to share positive emotions or seem to be restricting positive emotional expression for some reason (e.g., silently angry). The mother and child show no signs of having fun together.
2. **Moderate** – The dyad shows some signs of positive emotional connection, however, the frequency and degree of positiveness is no more than moderate. Sharing of positive affect occurs, however, it is occasional in frequency, restricted in tone and/or duration, or a combination of these, and/or mother and/or child shows some restriction or hesitancy in sharing emotion. [Code “2” if the dyad is emotionally connected, but one or both members are not having fun; also Code “2” if there are a number of instances where one or both members of the dyad experience discomfort, boredom or frustration]
3. **High** – The dyad shows clear signs of a positive emotional connection, which are positive and enthusiastic in tone and occur regularly throughout the session. The dyad may show frequent mutual eye contact or the dyad may show positive, enthusiastic sharing of positive emotions (e.g., “four-eyed” smiles). Neither the mother nor child shows signs of
restricting emotional communication with each other. The mother and child seem to be having fun together. Also code 3 if both mother and child express interest and seem content, and no negativity, discomfort, boredom, or frustration is evident.

3. **Body Harmonics (predominant mode)**

Rate the predominant mode; rate body orientation, degree of “in-syncntness” between the parent and child

*Note: For some tasks parents may be sitting next to or just behind their child, typically in order to both be oriented towards a toy/task, but are engaged in the same task. If this occurs as the predominant mode, code “4”.

**Codes:**
1. Neither mom nor child oriented to the other (similar to parallel play)
2. Child oriented to mom, mom not orientated to child
3. Mom oriented to the child, child not to mom
4. Both oriented towards each other – mom oriented to the child, child to the mom

4. **Mother’s Mental Status (summary code)**

*Note: A code of “2” or “3” does not indicate that the parent is at-risk of a mental illness; a code of “2” indicates that the parent is displaying one or more of the behaviors listed under a “2” or “3.”

Do not consider an overall mode of “angry” or “impatience” if mother is using appropriate, firm limit setting in response to a child’s inappropriate behaviors (e.g., throwing a toy, breaking a toy, and/or hitting a parent). However, if a parent uses a harsh tone, threatening voice, or threatening words while attempting to discipline/set limits, this **should** be coded here.

**Codes:**
1. Mother exhibits clear signs of mental distress and/or mental health problems (e.g., depression, hyperactivity, psychotic behavior, mania, etc.)
2. Mother’s mood and/or behavior may angry or impatient, but shows no overt signs of mental illness
3. Mother’s mood and/or behavior may appear anxious or distressed but shows no overt signs of mental illness
4. No mental distress or psychiatric impairment obvious to the observer

5. **Mother’s Emotional Response to Task and Situation (summary code)**

**Codes:**
1. *Negative Response* - Overt negative response: bored, irritable, impatient (e.g., Mother says, “this stinks”)
2. **Passive Response/Lack of Interest** - Passive or resigned (e.g., “OK, we have to do this”). Clearly no interest or enthusiasm but no overt negativity

3. **Business like OR mix of a positive and negative response** – Actively involved, but no positive or negative emotion displayed OR parent displays a mix of positive (e.g., expresses interest) and negative (e.g., signs of frustration or impatience) emotions.

4. **Positive** - Participates with interest and enthusiasm, and demonstrates occasional pleasure or enjoyment of the toys/task. Positive emotions can include expression of empathy and concern, not just pleasure and personal enjoyment.

5. **Denying Emotional Responsiveness** (code based on amount of incidents observed)

Coding judgments regarding negative acts by parent/caregiver (an act-instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

- **0. Non occurrence**
- **1. One to two mild-moderate acts**
- **2. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act**
- **3. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than extreme)**

*Judge acts, not intentions or consequences. Don’t judge on basis of a hypothesis or general point of view you’ve formed, put down what you see even if there is contradictory evidence (accepting and rejecting behaviors).*

6. **Touching (circle ANY that apply as present or absent)**

*Code parental touch, not child touch* – Specifically, if the child reaches out to touch the parent (in a hostile OR affectionate way), this is NOT coded. However, if the parent reciprocates/responds in any way, this should be coded. Tally the frequency of each type of touch.

**Codes:**

- **0. No touch/inadvertent touch** (e.g., fingers brush as both reach in to get a toy)
- **1. Hostile touch** (pinching, hitting, slapping, tightly gripping)
- **2. Touching to control** (e.g., hold down, direct, lift physically into a chair, hold down to control an out of control child, hold to control child’s movement; if for example the child began hitting themselves, and the parent held both of the child’s arms down at their sides to keep them from hurting themselves)
- **3. Touching to encourage or appropriately prompt/direct child’s attention** (e.g., tap on shoulder before pointing to an object)
- **4. Touching to make child attend** (e.g., including moving the child’s face or putting “blinders” on the child to direct them to make eye contact)
- **5. Touching to direct by using hand over hand** (e.g., parent puts their hand on top of their child’s hand and moves the child’s hand)
- **6. Affectionate touch** (no seductive overtures; e.g., giving a hug, touching child's hair)
- **7. Other touch** (if you see any other type of touch, code 7 and note what you saw)
Keep tallies for mild/moderate, strong, and extreme behaviors.

*Note: Body posturing is included in this code.

If child makes explicit-direct-overt demands/requests (including affective, cognitive and motor demands and/or requests), a parent who denies emotional responsiveness may respond by ignoring, behaving in detached/uninvolved manner, failing to respond, avoiding interaction, or refusing to interact.

If child makes implicit-indirect-covert needs/requests (including affective, cognitive, and motor needs/requests), a parent who denies emotional responsiveness may respond by ignoring, behaving in detached/uninvolved manner, failing to respond, avoiding interaction, or refusing to interact.

Additionally, unavailable posturing of parent would discourage a child from seeking a response and would also be considered denying emotional responsiveness.

Examples of this are listed below:

Mild –
- Child says “this is fun” or “this is hard” and Mom shows no response
- Child seems worried (frown, body posture, nervous behaviors) and mother shows little to no response
- Mom attending to child – eye contact and posture – is at low level under conditions where more would be expected
- Mom attending to child, but arms crossed (e.g., if mom crosses her arms in response to child during a critical period or sustained arm crossing or consistently displays this posture throughout the interaction)

Moderate –
- Child says “how do you do this?” or “I don’t understand” and must repeat it several times to get a response or takes a while for the parent to respond (i.e., prolonged time before response)
- Child appears very elated/excited or worried/depressed about what she/he’s just done or will do next and mother shows little to no response (e.g., Child is very excited about the toys/task and the parent shows little to no response)
- Mom tends not to look, touch, or talk to child unless child presses strongly for attention

Strong –
- Child makes requests or asks for help and mom does not respond at all or lets child know child is on his/her own by saying “go on working” or “you figure it out”
- Mom doesn’t respond to child’s reasonable but non-task oriented requests – “I’m thirsty” or “I want a drink”
- Child visibly shows very strong reaction to situation (e.g., cries, shakes, throws materials down) and mother does not respond
- Mom maintains body orientation and posture away from child’s position in an unusual or awkward way that doesn’t fit – and other options are available (e.g., Mother actively turns her whole body away or keeps face averted)

**Facilitation of Social/Cognitive Development**

8. **Quality of Instruction/Structure (summary code; structured)**

The important feature of this rating are how well the mother structures the situation so that the child knows what the task objectives are and receives hints or corrections while attempting to build a home. These hints or corrections are: a) timely to his/her current focus, b) paced at a rate that allows comprehension and use of each approach/cue, c) graded in logical steps that the child can understand, and d) stated clearly without unnecessary digressions to unrelated phenomena or aspects of the task that might only confuse the child. The mother’s approach suggests that she has some sort of plan for how her instructions/structure will help the child. Yet, she is also flexible in her approach and uses alternative strategies or rephrases suggestions when a particular cue is not working, and she coordinates her suggestions to the effort that the child is making to solve the task. Lastly, she keeps the child focused and helps them to attend to the task. If the child begins to go off task (begins to build a car) she helps to bring the child back to the task at hand (building a house).

**Codes:**

1. *Low* – *Lack of/poor instructions/structure.* Minimal instructions/structure is given. Most attempts (if any) are ineffective. Child may not understand what to do or what is expected of him/her due to lack of instructions. And/or the mother’s attempt to structure the child’s environment/instructions are uniformly of poor quality (i.e., poor timing/pace, incomprehensible, no scaffolding, etc.). She is either totally uninvolved or fails to structure the tasks effectively.

2. *Moderate* – *Adequate instructions/structure.* Mother provides adequate structure and instruction for the child to work on the tasks during much of the session, but overall, her structure/instruction is lacking at several points in the session. Alternatively, the mother may approach the tasks in a way that is very structured, but requires the child to attend primarily to her directives and allows little opportunity for the child to engage the task/toys directly. She may also provide a mix of good and bad instructions/structure (some sufficient instructions/structure (e.g., suggestions when the child is having difficulty) with poor instructions/structure (e.g., giving very fast paced directives) as well.

3. *High – Effective, continuous, and appropriate instructions/structure.* Mother demonstrates most characteristics of effective instruction/structure consistently throughout the session. The tasks are sufficiently structured so that the child understands the objectives and can attempt to solve the problems directly. Mother’s assistance is coordinated to the child’s activity and needs for assistance. For the most part, the mother keeps the child’s attention and focus on task.

9. **Mother’s Respect for Child’s Autonomy**
This scale reflects the degree to which the mother acted in a way that recognized and respected the validity of the child’s individuality, motives, and perspectives in the session.

A mother scoring low on this scale would be very intrusive in her interventions with the child, exerting her expectations on the child in a way that makes the child a satellite or servant of the mother rather than a mutually negotiated relationship, or implicitly defining her interactions in terms of a win-lose power struggle in which compliance by the child makes the mother the winner and the child submissive. Mothers may intrude either harshly or with affection; in either case, her actions do not acknowledge the child’s intentions as real or valid and communicate that it is better and safer to depend on her for direction than to attempt individuality.

In contrast, a mother scoring high on this scale acknowledges the child’s perspectives and desires as a valid part of the child’s individual identity. A mother scoring very high does this explicitly by negotiating rules with the child, verbalizing her acknowledgement of the child’s intentions, does not deny the child’s right to those desires, and models her own identity and the validity of her own desires in the way she expects the child to respect her individuality, too. Note: Mother can get a low score just by denying the child’s individuality strongly (e.g., interrupting the child, doing things before the child can on his/her own, etc.) even though it is not interrupting the child’s behavior.

Codes:
1. Very Low – Mother completely denies the child’s individuality in the techniques she uses. Mother may be intrusive, physical, and forceful in controlling the child.
2. Low – Mother may deny the child’s individuality, but there are a few opportunities for the child to experience autonomy, whether by variation in mother’s approach or simply by occasional absence of maternal controls over the child. Mostly, however, this mother’s style denies the child’s autonomy and mother is intrusive.
3. Moderate – Mother is moderately intrusive. Although mother does not deny the child’s separate identity, she does very little to support the validity of the child’s individuality. She might communicate doubts to the child about the appropriateness of having his/her intentions, or intrude abruptly on the child several times.
4. Moderately High – Mother does allow the child some autonomy of intentions, but she does not actively support and reinforce this perspective in the child. She may reflect the child’s intentions and ideas by engaging the child, but she also exerts her will at times over the child in a way that shifts the child’s perspective.
5. High – Mother very clearly interacts with the child in a way that acknowledges the validity of the child’s perspective, encourages the child to take the lead/participate

10. Strategies for Maintaining the Child’s Task Involvement (predominant mode):
This scale reflects the methods used by the mother to encourage and maintain task involvement on the part of the child. The parent’s use of verbal reinforcement (positive and negative) is paramount in this item. Parents are rated higher when they involve the child in the task and in the enjoyment of the process of working together. They are rated higher for more specific praise versus nonspecific praise. They are rated higher for using praise versus bribes or threats to engage the child. Parents who have a child who is noncompliant are not automatically rated
lower if they respond appropriately by trying other strategies until the child cooperates or they decide that the task cannot be continued.

**Rule:** If are between 2 codes and you have seen signs of threats, manipulation or coercion in order to promote the child’s involvement, code the lower of the 2 codes (even if some positive methods are used).

**Codes:**

1. **Lack of effort/Threatening** - Parents may receive the lowest score in 2 ways: either little or no effort is made to involve the child in the task OR Physical and verbal threats are used to promote the child’s involvement in the task as in, “Do this or else!” Punitiveness is the major strategy for control – the child is coerced to act to avoid unpleasant behaviors by the adult.

2. **Manipulation/Coercion** - Parental bribery or whining the primary strategies used to promote the child’s involvement. Rewards not associated directly with the task are given or promised to get the child to participate. Examples: “You’ll (We’ll) get ice cream if we can finish this game, job, etc.,” or parent nags and/or whines until the child complies (e.g., in a whining voice says, “Come on, help me, I want to do this well”). **Note, the parent may use other ineffective strategies, such as intrusive questions or directives, as well, but those are not the only strategies used.**

3. **Directives only** - Clarifying, giving information, and directing the task are the methods used to enlist child involvement. No praise, no threats, and no bribes are used. For example, a parent may give step-by-step instructions to a low functioning child, and not threaten or praise either.

4. **Information and non-specific praise** - Clarifying structure and giving information about the task process are used to prompt and enlist the child’s involvement, such as, “this goes next,” “it’s your turn,” “look here.” Additionally, the parent may use non-specific praise and global feedback to promote the child’s involvement in addition to verbal prompts and structuring information. “Good girl,” “nice building,” and “perfect” are examples of non-specific praise. Alternatively, the parent may demonstrate clear interest (e.g., paying attention to the child, commenting, asking non-intrusive questions, saying “Ohhh” and “Ahhh”), but not give praise. If parent demonstrates clear interest without giving praise, also code this here. In addition, the parent may also ask the child questions or make statements to help maintain their involvement. This item encompasses a parent who uses a variety of different strategies, but no coercive, manipulative, or threatening strategies.

5. **Specific praise** – At least one instance of specific praise is observed. The parent provides specific, positive, and well-timed references to the child’s effort and effectiveness are used to get and maintain the involvement of the child. The parent primarily highlights special task qualities of intrinsic interest to the child to stimulate the child’s involvement. Mother also provides some verbal prompts and structuring information. Examples for the structured task include: “Very good, I like how you are placing the pieces so carefully so the house does not fall,” “Good girl- that’s a great placement for the door,” and “you’re working hard – we’ve got a good chance of finishing this soon” are examples for the structured task.
14. Parental Intrusiveness Modified for ASD sample Keller Study 12.22.16 for teaching and Free Play, not for Cleanup

This scale reflects the degree to which the parent exerts control over the child rather than acting in a way that recognizes and respects the validity of the child's perspective. Intrusive interactions are clearly adult-centered rather than the child-centered. Extreme intrusiveness can be seen as over-control to the point where the child's autonomy is at stake. When unsure whether a behavior is intrusive or not, focus on the perspective of the child.

Intrusive behaviors involve imposing the parent’s agenda on the child despite signals that a different activity, level or pace of interaction is needed. High arousal, vigorous physical interaction or a rapid pace are not in and of themselves indicative of intrusive over-stimulation - if the child responds positively and is not engaging in defensive behaviors. It is when the child averts his/her gaze, turns away, or expresses negative affect and the parent continues or escalates that the behavior is intrusive. Intrusiveness is also apparent when the parent persists in demonstrating a toy to the child long after the child’s interest has been gained and the child clearly wants to manipulate the toy him/herself. These parents appear unable to relinquish control of the interaction in order to facilitate the child’s exploration or regulation of the activity. Intrusiveness may also be displayed by overwhelming the child with a rapid succession of toys or suggestions, without allowing the child time to react to one before another occurs.

In contrast, a parent scoring low on this scale acknowledges the child's perspective. This parent allows the interaction to be the child-centered rather than adult-centered. The parent modulates her/his behavior in response to the child's interest and enjoyment and allows the child to explore and play at his/her own pace.

Keep in mind that a parent can become involved in the child's play without denying his/her autonomy or being intrusive. In addition, parental actions which are clearly in the child's best interest, such as removing the child from danger are not considered intrusive. Likewise, parental behaviors that are in accordance with protocol instructions, such as bringing the child back to the mat or turning the child toward the camera, will not be judged as intrusive unless the child is handled in a rough or perfunctory manner.

Indicators of Intrusiveness:
- Persisting with an action that clearly does not interest the child (e.g., parent continues with a behavior that makes the child turn away, act defensive, or express negative affect)
- Offering a continuous barrage of stimulation or toys
- Not allowing the child to influence the focus or pace of play
- Not allowing the child to handle toys that he/she reaches for
- Grabbing toys away even though the child is still interested
- Not allowing the child a turn or an opportunity to respond at his/her own pace
- Not allowing the child to make choices
- Poking the child with toys, fingers, or other object(s)
Ratings on this scale should be based on both quantity and quality of parental behavior.

**Parental Intrusiveness Scale:**

1. **Low Intrusiveness.** Parent displays no or almost no signs of intrusive behavior. If a few instances of intrusive behavior are observed they are brief and do not unreasonably shift the child’s perspective (e.g., slightly abrupt transition from one task to another, briefly taking a toy, or brief magna doodle conflict). Child does not respond defensively in any way to parental behavior.

2. **Moderately Intrusiveness.** Parent displays some intrusiveness. Parent may initiate some interactions with child or offer suggestions to child which are not welcome (e.g., abruptly introducing a new activity/toy when the child is clearly enjoying a different activity/toy), evidenced by child protesting or responding defensively to parent. Or, parent may continue her/his activity after child responds defensively, but parent does not escalate the activity (e.g., the parent continues to stir with spoon after the child has pushed the parent’s hand away; **NOTE**: escalating the behavior would be insisting that the child stir with spoon or increasing demands that the child engage in a behavior).

3. **High Intrusiveness.** Parent displays intrusiveness more often than not throughout the session. Parent intrudes abruptly on the child or show intrusiveness at several points in the interaction. The child has few, if any, opportunities to experience autonomy, whether by variation in the parent's approach or simply by occasional absence of parental control.

**Psychological Abuse**

**FOR ALL CODES IN THIS CATEGORY:**

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

0. Non occurrence
1. One to two mild-moderate acts
2. **Pattern** of repeated mild-moderate acts (3 or more instances) or one strong act
3. **Pattern** of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Judge acts, not intentions or consequences. Don’t judge on basis of a hypothesis or general point of view you’ve formed, put down what you see even if there is contradictory evidence (accepting and rejecting behaviors).

Keep tallies for mild/moderate, strong, and extreme behaviors.
12. Spurning  (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act-instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

0. Non occurrence
1. One to two mild-moderate acts
2. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
3. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Active rejecting and/or degrading through words, gestures, and/or other behaviors. Spurning includes, belittling, degrading, and other nonphysical or overly hostile/rejecting treatments used towards a child. Shaming and/or ridiculing a child are also included in this code. Score mother’s contempt towards the child here. Do not score appropriate limit setting here (for example, if child is throwing toys or hitting and the parent tells them to calm down or stop their behavior).

Examples:

Mild –
- “Are you frustrated already?”
- “This will be hard for you” (unjustified by situation)
- “I’d better do this part for you” (unjustified by situation)
- Frowning at child’s efforts while allowing him/her to continue.
- Mild shaming (publicly teasing). For example, “Make sure you make a room for all the messy toys and clothes” (while child builds a house)
- Parent may tell the child to stop crying
- Parent may say, “Put a smile on it, honey” when the child looks upset
- Continuing to talk over a child as they try to express an idea (even if the parent is not being mean towards the child). Another way to conceptualize this is to think of the parent “rejecting” their child’s idea by not letting the child express their idea.

Moderate –
- “Let me do it, you’ll mess it up”
- Makes facial expression of disbelief for child to see as reaction to child’s attempt
- Parent tells a child that they are not experiencing a specific emotion (e.g., mother says, “no, you’re not sad”)

Strong –
- “Keep your hands off – you’ll screw it up!”
- “You just watch – we want to do it right”
- “Come on stupid – can’t you get it?”
- “You’re a real loser, aren’t you?”
- Laughs mockingly at child’s error or attempt
• Shaming. For example, making fun of the child’s bedwetting problem
• Parent firmly and repeatedly tells a child to cease displaying a specific emotion
• Parent makes fun of a child for displaying a specific emotion

13. Terrorizing (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act-instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

0. Non occurrence
1. One to two mild-moderate acts
2. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
3. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

*Note: Voice quality is included in this code

Key concept: Judge act(s) in regard to its threat or danger to the average child of the target child’s development level in the mainstream culture.

Threaten child with violence.
Threatening violence against child’s loved ones (other family members) or objects (comfort toys or favorite toys).
Physical attack on/act of violence directed toward child.
Place child in an unpredictable, chaotic, or frightening situation (at the extreme, placing the child in a recognizably dangerous situation).

Examples:

Mild –
• “You’d better behave”
• Abrupt – harsh voice quality (not to be confused with a firm loud “No” in a non-harsh tone to stop inappropriate behavior that needs to be terminated right away such as coloring with a crayon on Magna Doodle, throwing toys)
• In a harsh voice says, “put that back!”

Moderate –
• “You know what will happen to you if you don’t straighten up”
• Tightens body posture and facial expression in threatening and observable manner for child
• Thrusting/pointing index finger toward child to influence behavior

Strong –
• Slams fist down on table
• Menacing gestures made toward child – facial expression, growl, fist shaking
• Grabs child physically and exerts physical pressure in a manner that is too rough and overly controlling
• Threats of physical harm at child such as “I’m going to whip you in a minute.”

14. Isolating (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

   0. Non occurrence
   1. One to two mild-moderate acts
   2. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
   3. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Physically isolate/confine (confining child or placing unreasonable limitation on freedom of movement)
Socially isolate/confine (placing unreasonable limitations/restrictions on social interactions with peers or adults – this may be done verbally in the session)
Actively terminate communication.
Examples:

Mild –
• Preoccupied with keeping child in seat
• Very little conversation initiated by mother

Moderate –
• Lack of initiation or response - Mom doesn’t initiate talk and only talks to child when child initiates conversation (including gestures, tapping, or sound)
• Tries to keep child from communicating with others present (e.g., examiner)
• Tries to keep child from normal movement in his seat while on task

Strong –
• Says “stop talking” or “don’t talk while you’re working” when the child initiates or attempts to make social contact
• Refuses to allow child freedom to get drink or go to toilet when request/need is expressed with no acceptable rationale given
• Mom is in parallel play mode throughout most of process with little to no interaction or mutually facilitating behavior shown
• Keeps child from contact with others when they enter the room by using own body as shield, by dominating all interactions
• Context seems to demand conversation, and none occurs

15. Corrupting/Exploiting (code based on amount of incidents observed)
Coding judgments regarding negative acts by parents/caregivers (an act-instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

0. Non occurrence
1. One to two mild-moderate acts
2. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
3. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Key Concept: Code based on observations of the parent leading the child away and astray from the task.

Using a child in ways serving the adult, and not the child, or meeting own needs in ways directly interfering with child’s attempts to meet his/her needs encouraging or coercing abandonment of developmentally appropriate autonomy, and/or extreme over-involvement
Actively encouraging/teaching anti-social, self-harming, or developmentally inappropriate behavior
Modeling/demonstrating behavior, which is anti-social, self-harming, or developmentally incorrect/inappropriate
Allowing child behavior, which is anti-social, self-harming, or incorrect/inappropriate
Restricting or interfering with the child’s cognitive development.
Examples:

Mild –
- Doesn’t instruct child – simply lets child watch and participate in way unlikely to be understood
- Says, “it doesn’t matter how we do this, just so we get it done”

Moderate –
- Plays with/manipulates materials in a manner interfering with the child’s opportunity to participate or move forward on task.
- Models/demonstrates inefficient or incorrect procedure for handling task
- Shows little to no interest in having the child learn throughout the session.
- Seems only interested in getting it over and getting the task done
- Gives child role of “mom’s assistant” below child’s competency or level of potential for learning by trying
- Allows child (without corrective follow-up) to use foul language or make statements degrading self or others
- Parent takes over and directs the child’s activities (e.g., the parent tells the child exactly what to do)
- The parent does not allow the child to come up with his/her own ideas of how to tackle the task at hand (e.g., the parent may fire questions/directives at the child in a way that does not allow child to come up with his/her own ideas)
• Limits child’s participation to holding tools/parts for mother and mother only allows child to take responsibility for lowest level of task.

Strong –
• Says “this is stupid – let’s get it over with”
• Uses strong language that degrades others
• Encourages child to use foul language, make degrading statements, or engage in other inappropriate behavior (e.g., by smiling or laughing)
• Mother demands a shift in attention to her own topics in a way that hinders the child’s development (takes child away from the task) and persists in this shift in attention (e.g., mother insists that the child discuss their babysitter’s cell phone habits as the child builds a house).
• Parent interferes with the child’s learning and child’s experience of the session by interrupting the child and asking/making task-irrelevant questions/comments to the point that it’s difficult for the child to think (e.g., as the child is determining where to put a window in their toy house, the parent asks off-topic questions that make it difficult for the child to think)
• Pulls building materials from child’s grasp and places in her work area

Child Codes

16. Child Negativity (summary code)

* Remember, this is child negativity directed at the caregiver

Degree to which the child shows anger, dislike, or hostility toward the mother. At the high end, the child is repeatedly and overtly angry during the session and/or at the mother (e.g., forcefully rejecting her ideas, showing angry and resistant expression, pouting, or being unreasonably demanding or critical of her). At the low end, there are neither overt nor covert signs of such anger. Expressions are essentially positive toward mother/within the session whether or not the child is compliant or much involved with the mother.

Rule: If it is unclear if the child is acting negative towards the mother or the task, do not code the behavior here.

Codes:
1. Positive (i.e., no signs of negativist towards mother)- Child shows no signs of negativism towards the mother. She/he shows through consistently positive interactions toward the mother that she/he has a truly positive relationship toward the mother/within the session and feels no abiding anger toward the mother/within the session. [Code here if there are no clear negative signs towards the mother, even if no clear positive interactions are evident.]
2. Mix of negative and positive - Child shows a mix of negativism and positivism towards the mother. Neither negativism nor positivism is predominant in the interaction; there is a mix of both negative and positive interactions.
3. *Negative towards mother*- Child’s anger and negativism are predominant in the interaction between the child and mother. The child is repeatedly and overtly angry and resistant during the interaction. The degree of anger seems so strong that the child cannot disguise it in subtler ways for long, but it repeatedly appears in his/her interactions.

17. *Child’s Experience of the Session (summary code)*

This scale reflects the degree to which the child’s experience in the session probably resulted in feelings of success and competence on the tasks and confidence in having a good relationship with his/her mother. This scale reflects a variety of contributions in the child and mother’s behavior, which might contribute to the child’s experience of session. A child scoring low on this scale might have had many conflicts with his/her mother or might have been dominated or been rejected by the mother in ways that would affect the child’s experience of success in the session. A child scoring high on this scale would have been able to work well with the mother and to do the tasks successfully with some sense of autonomy in problem-solving through appropriate maternal assistance in the session.

1. *Low*- Child had a very negative experience which probably contributed to lower expectations of his/her own competence, anger at self or mother, rejection by the mother, or intense resistance between mother and child. There was very little in the session to compensate for these negative events. Almost no good or only one good instance of positive experiences in the session.

2. *Moderate*- A mix of positive and negative instances throughout the session. The session may be a moderately negative experience for the child, but overall, neither a success nor a failure experience of the child; OR The child seemed to get through the session with success and basically have positive interactions with his/her mother, but there might have been some minor aspects in which the child or mother’s contributions may have been deficient in helping the child feel success. For example, the child may have success in the task, but not display a good relationship with their mother, or vice versa.

3. *High*- The child has a very positive experience of doing well on the tasks and having a good relationship with his/her mother. There were very positive interactions between the mother and child, and the child was able to do the tasks with enough help and enough autonomy to experience competence in doing the tasks. Although minor problems in the session might have occurred, the overall effect of the mother and child’s interactions was very positive in terms of the child’s experience of success and confidence in the relationship. [A child who seems content/happy throughout the session regardless of interactions with their parent (e.g., a child who works independently and does not seem to care if the parent participates), should get coded here.]

18. *Child’s Level of Engagement in the Task (Use stopwatch to calculate percentage of time off task relative to total time counted from exit of Experimenter to return of Experimenter)*

This scale reflects the degree to which the child is engaged in either the task or participating with the mother on the task during the session. Code for child’s actual level of engagement with the task not the mother’s efforts to keep the child engaged.
1. **No Engagement** - Child shows little or no interest in engaging in the teaching task with the mother and this is consistent throughout the session (less than 25% of the time).

2. **Low Engagement** - Child shows some interest in participating in the task but it’s not consistent and child is unengaged or resistant for over half of the time (25-49% of the time).

3. **Moderate Engagement** - Child is engaged in the task for more than half but not all of the session. There are clear moments of disengagement demonstrated by the child (50 to 75% of the time).

4. **High Engagement** - Child is almost continuously engaged in the task – there may be moments where attention wanders but they are brief and intermittent (more than 75% of the time).

19. **Child Engagement of Parent (12/22/16)**

This scale reflects the extent to which the child (a) shows, initiates, and/or maintains interaction with the parent and (b) communicates positive regard and/or positive affect to the parent. At the higher end of the scale, the child expresses sustained positive affect toward parent (i.e., a big smile, laughter, etc.), and frequently looks at and attempts to interact with the parent.

**Indicators of Child Engagement:**

- Approaching or orienting toward parent
- Looking at, establishing, and/or maintaining eye contact with the parent
- Positively responding to parent's play initiations or suggestions (e.g., imitating parent, accepting toy from parent, following parent’s direction)
- Directing or (at a higher level) sharing positive expressions with parent
- Engaging parent in play or sustaining play initiated by parent (e.g. offering an object, requesting help, turn-taking)

**Indicators of Child Disengagement:**

- No sharing of affect with parent
- Overt rejection of parents play overtures
- Pushing offered objects away
- Positioning or orienting away from the parent
- Engaging in self-occupied play which excludes the parent
- Ignoring suggestions from parent

The focus of this scale is on the *quantity* (frequency) of occurrences in which the child shares positive affect with parent (i.e., looking at parent, making eye contact and smiling, and other “approach” behaviors) and or percentage of timer engaged cooperatively with the parent. When scoring this scale, keep in mind that the *quality* (intensity) of expression is secondary to the *quantity* of occurrences.

**Child Engagement Scale:**

1. **Very Low Engagement.** The child clearly does not attempt to share experiences with parent. Failure to make eye contact with parent when expressing happiness, directing expressions of
happiness to the experimenter rather than to the parent, and similar behaviors can be used as
evidence that the child attempts little sharing of feelings with parent.

2. **Low Engagement.** The child has very minor incidents which seem expressive of positive
regard toward parent and from which one might infer that some positive feelings are expressed
toward her. However, the child largely shows no positive regard toward parent and rarely
responds to parent or attempts to engage or sustain play (or cleanup or task involvement) with
him/her.

3. **Moderate Engagement.** The child shares some positive regard/happy expressions with parent
and/or makes some attempt to engage or sustain play (or cleanup or task involvement) with
parent, but these few and only minor elements of interaction and are not sustained by the child
for more than a moment at a time. Likewise, the child may include parent in play (offer a toy,
imitate pretend, etc.) or cleanup or the teaching task, but the engagement is not sustained for very
long.

4. **Moderately High Engagement.** The child has one or more periods in which s/he engages the
parent by expressing positive regard, sharing happy expressions or by sustaining play (or cleanup
or task involvement) with the parent or engaged in sustained cooperative interaction with the
parent. The child expresses positive affect toward and engagement of the parent for at least one
portion of the interaction.

5. **High Engagement.** The child demonstrates a very positive, engaging and sharing relationship
toward the parent for a substantial period of the session. Sustained play (or cleanup or task
involvement) is accompanied by positive regard toward the parent. The child is consistently
engaging of parent and the child’s relationship with parent seems very warm and positive for a
major portion of the session. There is no ambivalence in the child's expression of feelings toward
the parent.

**20. Child Aggression Tally (code based on amount of incidents observed)**

Tally if the child displayed any verbal or physical aggression.

No symbolic aggression (e.g., eye rolls) will be coded.

Verbal aggression includes yelling at parent or verbal threats (e.g., “I hate you”).

Physical aggression includes hitting, pinching, or kicking the parent. Physical aggression also
includes throwing objects, throwing objects at the parent, breaking or destroying toys/equipment
or using an object to hit the parent. Physical aggression also includes attempts at aggression (for
example, if the child attempts to hit their parent, but misses).
Please also note what type of aggression was observed by listing exactly what was seen (i.e., child hit parent with Legos).

NOTES (ANY TIME YOU HAVE A HARD TIME CODING, MAKE A NOTE WHY):

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________

_________________________________________________________________
Free Play Scoring Sheet (revised 1.9.17)

Participant Code: ______________________________

Rater: _______________________________________

Date: __________________

Codes

Quality of Emotional Support

11. Mother’s Supportive Presence
   1  2  3
   Comments:

12. Mutual Pleasure
   1  2  3
   Comments:

13. Body Harmonics
   1  2  3  4
   Comments:

14. Mother’s Mental Status
   1  2  3  4
   Comments:

15. Mother’s Emotional Response to Task and Situation
   1  2  3  4
   Comments:

16. Parental Touching (circle all that occur and tally total for each type of touch)
   0  1  2  3  4  5  6  7
   Comments:
17. Denying Emotional Responsiveness

| 0 | 1 | 2 | 3 |

Comments:

Tally: Mild/moderate –
      Strong –
      Extreme –

Facilitation of Social/Cognitive Development

18. Quality of Instruction/Structure

| 1 | 2 | 3 |

Comments:

19. Respect for Child’s Autonomy

| 1 | 2 | 3 | 4 | 5 |

Comments:

20. Strategies for Maintaining Child’s Task Involvement

| 1 | 2 | 3 | 4 | 5 |

Comments:

21. Parental Intrusiveness

| 1 | 2 | 3 |

Comments:

Psychological Abuse

22. Spurning

| 0 | 1 | 2 | 3 |

Comments:

Tally: Mild/moderate –
      Strong –
23. **Terrorizing**

0  1  2  3

Comments:

Tally: Mild/moderate –
      Strong –
      Extreme –

24. **Isolating**

0  1  2  3

Comments:

Tally: Mild/moderate –
      Strong –
      Extreme –

25. **Corrupting/Exploiting**

0  1  2  3

Comments:

Tally: Mild/moderate –
      Strong –
      Extreme –

**Child Codes**

26. **Child Negativity Toward Caregiver**

1  2  3

Comments:

27. **Child Experience of the Session**

1  2  3

Comments:

28. **Child’s Level of Engagement**

1  2  3  4

Comments:
29. Child’s Engagement of the Mother

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Comments:

30. Child Aggression Tally

Physical –
Verbal –

Comments:

**Code Explanations**

**Quality of Emotional Support**

5. Mother’s Supportive Presence (summary code)

A Mother scoring high on this scale expresses positive regard and emotional support to the child. This may occur by acknowledging the child’s accomplishments on the task or unrelated task the child is doing (e.g., coloring a picture), encouraging the child with positive emotional regard (e.g., “you’re really good at this,” “you got another one right”) and various other ways of letting the child know that he/she has her support and confidence to do well in the setting. If the child is having difficulty on the task, the mother is reassuring and calm, providing an affectively positive “secure base” for the child, perhaps leaning closer to the child to give a physical sense of support.

A mother scoring low on this scale fails to provide supportive cues. She might be passive, uninvolved, aloof, or otherwise unavailable to the child. She may also appear impatient, as if she feels like the activity is a waste of her time and she rather be doing something else. Such a mother also might give observers the impression that she is more concerned about her own adequacy and how she is presenting to the camera, rather than displaying concern about the child’s emotional needs.

A potential difficulty in scoring this scale is to discount messages of mothers that seemingly are supportive in verbal content but are contradicted by other aspects of communication (e.g., the mother seems to be performing a supportive role for the camera and not really engaged in what the child is doing or feeling). Signs of such questionable support are: improper timing of support, mismatch of verbal and bodily cues, and failure to have the child’s attention in delivering the message. These types of supportive messages would not be weighted highly because such features suggest that the mother’s supportive presence is not a ‘sincere’ aspect of their interaction outside the laboratory setting.

Conversely, the mother may seem more supportive than she appears in this situation because she has approached this task as a test of the child’s achievement and has not used as much support as she might have. Yet, the qualitative features of her support would merit a high score.

Codes:
4. *Low* – Mother provides little or no emotional support to the child. The mother may be aloof and/or unavailable. She may also be hostile towards a child who shows he/she is in need of support. If support is displayed, it is minimal and not timed well, either being given when the child does not really need it, or only after the child has become upset. The consistency of this support may be uneven, so as to make the mother unreliable as a supportive presence.

5. *Moderate* – This mother does an adequate job of being available when her child needs support. She may lean closer as the child shows small signs of frustration and praise the child’s efforts to show that she is available and supportive, but inconsistency in this style makes her support unreliable as a supportive presence to the child. Additionally, she may have failed to provide support at crucial times in the session (i.e., when support was needed by the child).

6. *High* – Mother skillfully provides support throughout the majority of the session. She establishes herself as supportive and encouraging toward the child and provides support when the child needs it. As the child experiences more difficulty, her support increases in commensurate fashion. If the child is having difficulty, she finds ways to structure the problem to reward some sort of success by the child and encourage whatever solution the child can make. She may have minor lapses, but for the most part, she is emotionally supportive and reinforces the child’s successes.

6. **Mutual Pleasure (summary code)**

   Dyad’s emotional connectedness and shared experience of mutual pleasure.

   **Codes:**

   4. *Minimal* – The dyad shows no/minimal signs of a positive emotional connection. There are no shared smiles and there may be no mutual eye contact. Mother and child seem to be hesitant to share positive emotions or seem to be restricting positive emotional expression for some reason (e.g., silently angry). The mother and child show no signs of having fun together.

   5. *Moderate* – The dyad shows some signs of positive emotional connection, however, the frequency and degree of positiveness is no more than moderate. Sharing of positive affect occurs, however, it is occasional in frequency, restricted in tone and/or duration, or a combination of these; and/or mother and/or child shows some restriction or hesitancy in sharing emotion. [Code “2” if the dyad is emotionally connected, but one or both members are not having fun; also Code “2” if there are a number of instances where one or both members of the dyad experience discomfort, boredom or frustration]

   6. *High* – The dyad shows clear signs of a positive emotional connection, which are positive and enthusiastic in tone and occur regularly throughout the session. The dyad may show frequent mutual eye contact or the dyad may show positive, enthusiastic sharing of positive emotions (e.g., “four-eyed” smiles). Neither the mother nor child shows signs of restricting emotional communication with each other. The mother and child seem to be having fun together. Also code 3 if both mother and child express interest and seem content, and no negativity, discomfort, boredom, or frustration is evident.

7. **Body Harmonics (predominant mode)**
Rate the predominant mode; rate body orientation, degree of “insynctness” between the parent and child

*Note: For some tasks (e.g., Magna Doodle) parents may be sitting next to or just behind their child, typically in order to both be oriented towards a toy/task, but are engaged in the same task. If this occurs as the predominant mode, code “4”.

Codes:
5. Neither mom nor child oriented to the other (similar to parallel play)
6. Child oriented to mom, mom not orientated to child
7. Mom oriented to the child, child not to mom
8. Both oriented towards each other – mom oriented to the child, child to the mom

8. Mother’s Mental Status (summary code)

*Note: A code of “2” or “3” does not indicate that the parent is at-risk of a mental illness; a code of “2” indicates that the parent is displaying one or more of the behaviors listed under a “2” or “3.”

Do not consider an overall mode of “angry” or “impatience” if mother is using appropriate, firm limit setting in response to a child’s inappropriate behaviors (e.g., throwing a toy, breaking a toy, and/or hitting a parent). However, if a parent uses a harsh tone, threatening voice, or threatening words while attempting to discipline/set limits, this should be coded here.

Codes:
5. Mother exhibits clear signs of mental distress and/or mental health problems (e.g., depression, hyperactivity, psychotic behavior, mania, etc.)
6. Mother’s mood and/or behavior may angry or impatient, but shows no overt signs of mental illness
7. Mother’s mood and/or behavior may appear anxious or distressed but shows no overt signs of mental illness
8. No mental distress or psychiatric impairment obvious to the observer

5. Mother’s Emotional Response to Task and Situation (summary code)

Codes:
5. Negative Response - Overt negative response: bored, irritable, impatient (e.g., Mother says, “this stinks”)
6. Passive Response/Lack of Interest- Passive or resigned (e.g., “OK, we have to do this”). Clearly no interest or enthusiasm but no overt negativity
7. Business like OR mix of a positive and negative response – Actively involved, but no positive or negative emotion displayed OR parent displays a mix of positive (e.g., expresses interest) and negative (e.g., signs of frustration or impatience) emotions.
8. **Positive** - Participates with interest and enthusiasm, and demonstrates occasional pleasure or enjoyment of the toys/task. Positive emotions can include expression of empathy and concern, not just pleasure and personal enjoyment.

6. **Touching (circle ANY that apply)**

*Code parental touch, not child touch* – Specifically, if the child reaches out to touch the parent (in a hostile OR affectionate way), this is NOT coded. However, if the parent reciprocates/responds in any way, this should be coded. Tally the frequency of each type of touch.

**Codes:**
8. No touch/inadvertent touch (e.g., fingers brush as both reach in to get a toy)
9. Hostile touch (pinching, hitting, slapping, tightly gripping)
10. Touching to control (e.g., hold down, direct, lift into a chair, hold down to control an out of control child, hold to control child’s movement; if for example the child began hitting themselves, and the parent held both of the child’s arms down at their sides to keep them from hurting themselves)
11. Touching to encourage or appropriately prompt/direct child’s attention (e.g., tap on shoulder before pointing to an object)
12. Touching to make child attend (e.g., including moving the child’s face or putting “blinders” on the child to direct them to make eye contact)
13. Touching to direct by using hand over hand (e.g., parent puts their hand on top of their child’s hand and moves the child’s hand)
14. Affectionate touch (no seductive overtures; e.g., giving a hug, touching child's hair)
15. Other touch (if you see any other type of touch, code 7 and note what you saw)

7. **Denying Emotional Responsiveness  (code based on amount of incidents observed)**

Coding judgments regarding negative acts by parent/caregiver (an act-instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

4. Non occurrence
5. One to two mild-moderate acts
6. **Pattern** of repeated mild-moderate acts (3 or more instances) or one strong act
7. **Pattern** of repeated strong acts (2 or more instances) or one extreme act (worse than extreme)

*Judge acts, not intentions or consequences. Don’t judge on basis of a hypothesis or general point of view you’ve formed, put down what you see even if there is contradictory evidence (accepting and rejecting behaviors).*

Keep tallies for mild/moderate, strong, and extreme behaviors.

*Note: Body posturing is included in this code.*
If child makes explicit-direct-overt demands/requests (including affective, cognitive and motor demands and/or requests), a parent who denies emotional responsiveness may respond by ignoring, behaving in detached/uninvolved manner, failing to respond, avoiding interaction, or refusing to interact.

If child makes implicit-indirect-covert needs/requests (including affective, cognitive, and motor needs/requests), a parent who denies emotional responsiveness may respond by ignoring, behaving in detached/uninvolved manner, failing to respond, avoiding interaction, or refusing to interact.

Additionally, unavailable posturing of parent would discourage a child from seeking a response and would also be considered denying emotional responsiveness.

Examples of this are listed below:

**Mild** –
- Child says “this is fun” or “this is hard” and Mom shows no response
- Child seems worried (frown, body posture, nervous behaviors) and mother shows little to no response
- Mom attending to child – eye contact and posture – is at low level under conditions where more would be expected
- Mom attending to child, but arms crossed (e.g., if mom crosses her arms in response to child during a critical period or sustained arm crossing or consistently displays this posture throughout the interaction)

**Moderate** –
- Child says “how do you do this?” or “I don’t understand” and must repeat it several times to get a response or takes a while for the parent to respond (i.e., prolonged time before response)
- Child appears very elated(excited or worried/depressed about what she/he’s just done or will do next and mother shows little to no response (e.g., Child is very excited about the toys/task and the parent shows little to no response)
- Mom tends not to look, touch, or talk to child unless child presses strongly for attention

**Strong** –
- Child makes requests or asks for help and mom does not respond at all or lets child know child is on his/her own by saying “go on working” or “you figure it out”
- Mom doesn’t respond to child’s reasonable but non-task oriented requests – “I’m thirsty” or “I want a drink”
- Child visibly shows very strong reaction to situation (e.g., cries, shakes, throws materials down) and mother does not respond
- Mom maintains body orientation and posture away from child’s position in an unusual or awkward way that doesn’t fit – and other options are available (e.g., Mother actively turns her whole body away or keeps face averted)

*Facilitation of Social/Cognitive Development*
8. Quality of Instruction/Structure (summary code)

During the free play portion of the session, the mothers scoring *high* on this scale provides support to the child and structure when needed. If the child has difficulties with one of the toys, she provides instructions in a graded, logical, and timely manner. She uses vocabulary that is at the child’s level and makes helpful comments when the child is in need. She stimulates the child’s educational environment by making comments and elaborations on what the child is doing or feeling (e.g., if the child says, “it’s a car” the mom says “yes, it’s a blue car”).

Codes:
1. *Low - Lack of/poor instructions/structure.* Mother fails to provide adequate structure/instructions. Mother may try to help the child once, but is ineffective and unsuccessful in giving instructions and/or structuring the session. Child may not understand what to do or what is expected of him/her due to lack of instructions/structure. The mother’s attempt to structure the child’s environment/instructions are uniformly of poor quality. She may be totally uninvolved and/or she may set-up the environment in a poor manner that makes it difficult for the child to successfully play with the toys at hand.

2. *Moderate – Mostly Adequate instructions/structure.* Mother provides adequate structure and instruction during much of the session, but overall, her structure/instruction is not sufficient. Alternatively, the mother may approach the tasks in a way that is very directed/structured, but requires the child to attend primarily to her directives and allows little opportunity for the child to engage the toys. She may provide a mix of good and bad instructions/structure (e.g., attempting to help the child decide what toy to play with while then setting up a game in a way that makes it difficult for the child to have any success).

3. *High – Effective, continuous, and appropriate instructions/structure.* Mother demonstrates characteristics of effective instruction/structure. The tasks are sufficiently structured so that the child understands the objectives and can attempt to solve the problems directly. Mother’s assistance is coordinated to the child’s activity and needs for assistance. The mother may not need to structure the session or give many instructions if the child understands what is expected of them, but the mother mostly keeps the child’s attention and focus on the chosen task and stimulates their educational environment. (e.g., the mother may help the child pick a toy to play with and then help to guide the child through using the toy).

10. Mother’s Respect for Child’s Autonomy

This scale reflects the degree to which the mother acted in a way that recognized and respected the validity of the child’s individuality, motives, and perspectives in the session.

A mother scoring *low* on this scale would be very intrusive in her interventions with the child, exerting her expectations on the child in a way that makes the child a satellite or servant of the mother rather than a mutually negotiated relationship, or implicitly defining her interactions in terms of a win-lose power struggle in which compliance by the child makes the mother the winner and the child submissive. Mothers may intrude either harshly or with affection; in either
case, her actions do not acknowledge the child’s intentions as real or valid and communicate that it is better and safer to depend on her for direction than to attempt individuality.

In contrast, a mother scoring high on this scale acknowledges the child’s perspectives and desires as a valid part of the child’s individual identity. A mother scoring very high does this explicitly by negotiating rules with the child, verbalizing her acknowledgement of the child’s intentions, does not deny the child’s right to those desires, and models her own identity and the validity of her own desires in the way she expects the child to respect her individuality, too. Note: Mother can get a low score just by denying the child’s individuality strongly (e.g., interrupting the child, doing things before the child can on his/her own, etc.) even though it is not interrupting the child’s behavior.

Codes:
6. Very Low – Mother completely denies the child’s individuality in the techniques she uses. Mother may be intrusive, physical, and forceful in controlling the child.
7. Low – Mother may deny the child’s individuality, but there are a few opportunities for the child to experience autonomy, whether by variation in mother’s approach or simply by occasional absence of maternal controls over the child. Mostly, however, this mother’s style denies the child’s autonomy and mother is intrusive.
8. Moderate – Mother is moderately intrusive. Although mother does not deny the child’s separate identity, she does very little to support the validity of the child’s individuality. She might communicate doubts to the child about the appropriateness of having his/her intentions, or intrude abruptly on the child several times.
9. Moderately High – Mother does allow the child some autonomy of intentions, but she does not actively support and reinforce this perspective in the child. She may reflect the child’s intentions and ideas by engaging the child, but she also exerts her will at times over the child in a way that shifts the child’s perspective.
10. High – Mother very clearly interacts with the child in a way that acknowledges the validity of the child’s perspective, encourages the child to take the lead/participate

10. Strategies for Maintaining the Child’s Task Involvement (predominant mode):
This scale reflects the methods used by the mother to encourage and maintain task involvement on the part of the child. The parent’s use of verbal reinforcement (positive and negative) is paramount in this item. Parents are rated higher when they involve the child in the task and in the enjoyment of the process of working together. They are rated higher for more specific praise versus nonspecific praise. They are rated higher for using praise versus bribes or threats to engage the child. Parents who have a child who is noncompliant are not automatically rated lower if they respond appropriately by trying other strategies until the child cooperates or they decide that the task cannot be continued.

Rule: If are between 2 codes and you have seen signs of threats, manipulation or coercion in order to promote the child’s involvement, code the lower of the 2 codes (even if some positive methods are used).

Codes:
3. **Lack of effort/Threatening** - Parents may receive the lowest score in 2 ways: either little or no effort is made to involve the child in the task OR Physical and verbal threats are used to promote the child’s involvement in the task as in, “Do this or else!”. Punitiveness is the major strategy for control – the child is coerced to act to avoid unpleasant behaviors by the adult.

4. **Manipulation/Coercion** - Parental bribery or whining the primary strategies used to promote the child’s involvement. Rewards not associated directly with the task are given or promised to get the child to participate. Examples: “You’ll (We’ll) get ice cream if we can finish this game, job, etc.,” or parent nags and/or whines until the child complies (e.g., in a whining voice says, “Come on, help me, I want to do this well”). **Note, the parent may use other ineffective strategies, such as intrusive questions or directives, as well, but those are not the only strategies used.

3. **Directives only** - Clarifying, giving information, and directing the task are the methods used to enlist child involvement. No praise, no threats, and no bribes are used. For example, a parent may give step-by-step instructions to a low functioning child, and not threaten or praise either.

4. **Information and non-specific praise** - Clarifying structure and giving information about the task process are used to prompt and enlist the child’s involvement, such as, “this goes next,” “it’s your turn,” “look here.” Additionally, the parent may use non-specific praise and global feedback to promote the child’s involvement in addition to verbal prompts and structuring information. “Good girl,” “nice car,” and “perfect” are examples of non-specific praise. Alternatively, the parent may demonstrate clear interest (e.g., paying attention to the child, commenting, asking non-intrusive questions, saying “Ohhh” and “Ahhh”), but not give praise. If parent demonstrates clear interest without giving praise, also code this here. In addition, the parent may also ask the child questions or make statements to help maintain their involvement. This item encompasses a parent who uses a variety of different strategies, but no coercive, manipulative, or threatening strategies.

5. **Specific praise** – At least one instance of specific praise is observed. The parent provides specific, positive, and well-timed references to the child’s effort and effectiveness are used to get and maintain the involvement of the child. The parent primarily highlights special task qualities of intrinsic interest to the child to stimulate the child’s involvement. Mother also provides some verbal prompts and structuring information. Examples include: “Wow, that’s so creative to draw a road for the skateboard on the Magna Doodle” or “You are doing such a good job of aiming the ball carefully before you throw the ball to me.”

11: **Parental Intrusiveness**

This scale reflects the degree to which the parent exerts control over the child rather than acting in a way that recognizes and respects the validity of the child's perspective. Intrusive interactions are clearly adult-centered rather than the child-centered. Extreme intrusiveness can be seen as over-control to the point where the child’s autonomy is at stake. When unsure whether a behavior is intrusive or not, focus on the perspective of the child.

Intrusive behaviors involve imposing the parent’s agenda on the child despite signals that a different activity, level or pace of interaction is needed. High arousal, vigorous physical
interaction or a rapid pace are not in and of themselves indicative of intrusive over-stimulation - if the child responds positively and is not engaging in defensive behaviors. It is when the child averts his/her gaze, turns away, or expresses negative affect and the parent continues or escalates that the behavior is intrusive. Intrusiveness is also apparent when the parent persists in demonstrating a toy to the child long after the child’s interest has been gained and the child clearly wants to manipulate the toy him/herself. These parents appear unable to relinquish control of the interaction in order to facilitate the child’s exploration or regulation of the activity. Intrusiveness may also be displayed by overwhelming the child with a rapid succession of toys or suggestions, without allowing the child time to react to one before another occurs.

In contrast, a parent scoring low on this scale acknowledges the child's perspective. This parent allows the interaction to be the child-centered rather than adult-centered. The parent modulates her/his behavior in response to the child's interest and enjoyment and allows the child to explore and play at his/her own pace.

Keep in mind that a parent can become involved in the child's play without denying his/her autonomy or being intrusive. In addition, parental actions which are clearly in the child's best interest, such as removing the child from danger are not considered intrusive. Likewise, parental behaviors that are in accordance with protocol instructions, such as bringing the child back to the mat or turning the child toward the camera, will not be judged as intrusive unless the child is handled in a rough or perfunctory manner.

**Indicators of Intrusiveness:**
- Persisting with an action that clearly does not interest the child (e.g., parent continues with a behavior that makes the child turn away, act defensive, or express negative affect)
- Offering a continuous barrage of stimulation or toys
- Not allowing the child to influence the focus or pace of play
- Not allowing the child to handle toys that he/she reaches for
- Grabbing toys away even though the child is still interested
- Not allowing the child a turn or an opportunity to respond at his/her own pace
- Not allowing the child to make choices
- Poking the child with toys, fingers, or other object(s)

Ratings on this scale should be based on both *quantity* and *quality* of parental behavior.

**Parental Intrusiveness Scale:**

1. **Low Intrusiveness.** Parent displays no or almost no signs of intrusive behavior. If a few instances of intrusive behavior are observed they are brief and do not unreasonably shift the child’s perspective (e.g., slightly abrupt transition from one task to another, briefly taking a toy, or brief magna doodle conflict). Child does not respond defensively in any way to parental behavior.

2. **Moderately Intrusiveness.** Parent displays some intrusiveness. Parent may initiate some interactions with child or offer suggestions to child which are not welcome (e.g., abruptly introducing a new activity/toy when the child is clearly enjoying a different
activity/toy), evidenced by child protesting or responding defensively to parent. Or, parent may continue her/his activity after child responds defensively, but parent does not escalate the activity (e.g., the parent continues to stir with spoon after the child has pushed the parent's hand away; NOTE: escalating the behavior would be insisting that the child stir with spoon or increasing demands that the child engage in a behavior).

3. **High Intrusiveness.** Parent displays intrusiveness more often than not throughout the session. Parent intrudes abruptly on the child or show intrusiveness at several points in the interaction. The child has few, if any, opportunities to experience autonomy, whether by variation in the parent's approach or simply by occasional absence of parental control.

**Psychological Abuse**

FOR ALL CODES IN THIS CATEGORY:

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

4. Non occurrence
5. One to two mild-moderate acts
6. **Pattern** of repeated mild-moderate acts (3 or more instances) or one strong act
7. **Pattern** of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Judge acts, not intentions or consequences. Don’t judge on basis of a hypothesis or general point of view you’ve formed, put down what you see even if there is contradictory evidence (accepting and rejecting behaviors).

Keep tallies for mild/moderate, strong, and extreme behaviors.

12. **Spurning**  (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

4. Non occurrence
5. One to two mild-moderate acts
6. **Pattern** of repeated mild-moderate acts (3 or more instances) or one strong act
7. **Pattern** of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Active rejecting and/or degrading through words, gestures, and/or other behaviors. Spurning includes, belittling, degrading, and other nonphysical or overly hostile/rejecting treatments used towards a child. Shaming and/or ridiculing a child are also included in this code. Score mother’s contempt towards the child here. Do not score appropriate limit setting here (for
example, if child is throwing toys or hitting and the parent tells them to calm down or stop their behavior).

Examples:

Mild –
- “Are you frustrated already?”
- “This will be hard for you” (unjustified by situation)
- “I’d better do this part for you” (unjustified by situation)
- Frowning at child’s efforts while allowing him/her to continue.
- Mild shaming (publicly teasing). For example, “Make sure you draw all the dirty socks and banana peels you leave in your room” (while child draws on a Magna Doodle)
- Parent may tell the child to stop crying
- Parent may say, “Put a smile on it, honey” when the child looks upset
- Continuing to talk over a child as they try to express an idea (even if the parent is not being mean towards the child). Another way to conceptualize this is to think of the parent “rejecting” their child’s idea by not letting the child express their idea.

Moderate –
- “Let me do it, you’ll mess it up”
- Makes facial expression of disbelief for child to see as reaction to child’s attempt
- Parent tells a child that they are not experiencing a specific emotion (e.g., mother says, “no, you’re not sad”)

Strong –
- “Keep your hands off – you’ll screw it up!”
- “You just watch – we want to do it right”
- “Come on stupid – can’t you get it?”
- “You’re a real loser, aren’t you?”
- Laughs mockingly at child’s error or attempt
- Shaming. For example, making fun of the child’s bedwetting problem
- Parent firmly and repeatedly tells a child to cease displaying a specific emotion
- Parent makes fun of a child for displaying a specific emotion

13. Terrorizing (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act(instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

4. Non occurrence
5. One to two mild-moderate acts
6. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
7. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)
*Note: Voice quality is included in this code

**Key concept:** Judge act(s) in regard to its threat or danger to the average child of the target child’s development level in the mainstream culture.

Threaten child with violence.
Threatening violence against child’s loved ones (other family members) or objects (comfort toys or favorite toys).
Physical attack on/act of violence directed toward child.
Place child in an unpredictable, chaotic, or frightening situation (at the extreme, placing the child in a recognizably dangerous situation).

Examples:

**Mild** –
- “You’d better behave”
- Abrupt – harsh voice quality (*not to be confused with a firm loud “No” in a non-harsh tone to stop inappropriate behavior that needs to be terminated right away such as ripping the Lego model, throwing toys*)
- In a harsh voice says, “put that back!”

**Moderate** –
- “You know what will happen to you if you don’t straighten up”
- Tightens body posture and facial expression in threatening and observable manner for child
- Thrusting/pointing index finger toward child to influence behavior

**Strong** –
- Slams fist down on table
- Menacing gestures made toward child – facial expression, growl, fist shaking
- Grabs child physically and exerts physical pressure in a manner that is too rough and overly controlling
- Threats of physical harm at child such as “I’m going to whip you in a minute.”

**14. Isolating (code based on amount of incidents observed)**

Coding judgments regarding negative acts by parents/caregivers (an act-instance is considered one interaction/topic). For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

4. Non occurrence
5. One to two mild-moderate acts
6. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
7. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)
Physically isolate/confine (confining child or placing unreasonable limitation on freedom of movement)
Socially isolate/confine (placing unreasonable limitations/restrictions on social interactions with peers or adults – this may be done verbally in the session)
Actively terminate communication.
Examples:

Mild –
- Preoccupied with keeping child in seat
- Very little conversation initiated by mother

Moderate –
- Lack of initiation or response - Mom doesn’t initiate talk and only talks to child when child initiates conversation (including gestures, tapping, or sound)
- Tries to keep child from communicating with others present (e.g., examiner)
- Tries to keep child from normal movement in his seat while on task

Strong –
- Says “stop talking” or “don’t talk while you’re working” when the child initiates or attempts to make social contact
- Refuses to allow child freedom to get drink or go to toilet when request/need is expressed with no acceptable rationale given
- Mom is in parallel play mode throughout most of process with little to no interaction or mutually facilitating behavior shown
- Keeps child from contact with others when they enter the room by using own body as shield, by dominating all interactions
- Context seems to demand conversation, and none occurs

15. Corrupting/Exploiting (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

4. Non occurrence
5. One to two mild-moderate acts
6. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
7. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Key Concept: Code based on observations of the parent leading the child away and astray from the task.

Using a child in ways serving the adult, and not the child, or meeting own needs in ways directly interfering with child’s attempts to meet his/her needs encouraging or coercing abandonment of developmentally appropriate autonomy, and/or extreme over-involvement
Actively encouraging/teaching anti-social, self-harming, or developmentally inappropriate behavior  
Modeling/demonstrating behavior which is anti-social, self-harming, or developmentally incorrect/inappropriate  
Allowing child behavior which is anti-social, self-harming, or incorrect/inappropriate  
Restricting or interfering with the child’s cognitive development.

Examples:

Mild —  
  • Doesn’t help or instruct child if child seems stuck with something (e.g. how to erase the magna doodle).  
  • Says, “it doesn’t matter how we do this, just so we get it done”

Moderate –  
  • Plays with/manipulates materials in a manner interfering with the child’s opportunity to participate or move forward with their play.  
  • Shows little to no interest in having the child learn throughout the session.  
  • Seems only interested in getting it over and getting the task done  
  • Gives child role of “mom’s assistant” below child’s competency or level of potential for learning by trying  
  • Allows child (without corrective follow-up) to use foul language or make statements degrading self or others  
  • Parent takes over and directs the child’s activities (e.g., the parent tells the child exactly what to do)  
  • The parent does not allow the child to come up with his/her own ideas of how to play with the item chosen (e.g., the parent may fire questions/directives at the child in a way that does not allow child to come up with his/her own ideas)  
  • Limits child’s participation to holding tools/parts for mother and mother only allows child to take responsibility for lowest level of task.

Strong –  
  • Says “this is stupid – let’s get it over with”  
  • Uses strong language that degrades others  
  • Does not allow the child to choose what to play with  
  • Encourages child to use foul language, make degrading statements, or engage in other inappropriate behavior (e.g., by smiling or laughing)  
  • Mother demands a shift in attention to her own topics in a way that hinders the child’s development (takes child away from the task) and persists in this shift in attention (e.g., mother insists that the child discuss their babysitter’s cell phone habits as the child attempts to play pretend with the toy phone. The mother continues to ask questions and does not allow the child to play with the toy in the way the child wants to)  
  • Parent interferes with the child’s learning and child’s experience of the session by interrupting the child and asking/making task-irrelevant questions/comments to the point that it’s difficult for the child to think (e.g., as the child is determining where to put a
window in their toy house, the parent asks off-topic questions that make it difficult for the child to think)
• Pulls toy/game/material from child’s grasp and places in her work area

Child Codes

16. Child Negativity (summary code)

* Remember, this is child negativity directed at the caregiver

Degree to which the child shows anger, dislike, or hostility toward the mother. At the high end, the child is repeatedly and overtly angry during the session and/or at the mother (e.g., forcefully rejecting her ideas, showing angry and resistant expression, pouting, or being unreasonably demanding or critical of her). At the low end, there are neither overt nor covert signs of such anger. Expressions are essentially positive toward mother/within the session whether or not the child is compliant or much involved with the mother.

Rule: If it is unclear if the child is acting negative towards the mother or the task, do not code the behavior here.

Codes:
4. Positive (i.e., no signs of negativist towards mother)- Child shows no signs of negativism towards the mother. She/he shows through consistently positive interactions toward the mother that she/he has a truly positive relationship toward the mother/within the session and feels no abiding anger toward the mother/within the session. [Code here if there are no clear negative signs towards the mother, even if no clear positive interactions are evident.]
5. Mix of negative and positive - Child shows a mix of negativism and positivism towards the mother. Neither negativism nor positivism is predominant in the interaction; there is a mix of both negative and positive interactions.
6. Negative towards mother- Child’s anger and negativism are predominant in the interaction between the child and mother. The child is repeatedly and overtly angry and resistant during the interaction. The degree of anger seems so strong that the child cannot disguise it in subtler ways for long, but it repeatedly appears in his/her interactions.

17. Child’s Experience of the Session (summary code)

This scale reflects the degree to which the child’s experience in the session probably resulted in feelings of success and competence on the tasks and confidence in having a good relationship with his/her mother. This scale reflects a variety of contributions in the child and mother’s behavior, which might contribute to the child’s experience of session. A child scoring low on this scale might have had many conflicts with his/her mother or might have been dominated or been rejected by the mother in ways that would affect the child’s experience of success in the session. A child scoring high on this scale would have been able to work well with the mother.
and to do the tasks successfully with some sense of autonomy in problem-solving through appropriate maternal assistance in the session.

4. **Low** - Child had a very negative experience which probably contributed to lower expectations of his/her own competence, anger at self or mother, rejection by the mother, or intense resistance between mother and child. There was very little in the session to compensate for these negative events. Almost no good or only one good instance of positive experiences in the session.

5. **Moderate** - A mix of positive and negative instances throughout the session. The session may be a moderately negative experience for the child, but overall, neither a success nor a failure experience of the child; *OR* The child seemed to get through the session with success and basically have positive interactions with his/her mother, but there might have been some minor aspects in which the child or mother’s contributions may have been deficient in helping the child feel success. For example, the child may have success in the task, but not display a good relationship with their mother, or vice versa.

6. **High** - The child has a very positive experience of doing well on the tasks and having a good relationship with his/her mother. There were very positive interactions between the mother and child, and the child was able to do the tasks with enough help and enough autonomy to experience competence in doing the tasks. Although minor problems in the session might have occurred, the overall effect of the mother and child’s interactions was very positive in terms of the child’s experience of success and confidence in the relationship. [A child who seems content/happy throughout the session regardless of interactions with their parent (e.g., a child who works independently and does not seem to care if the parent participates), should get coded here.]

18. **Child’s Level of Engagement in the Task (Use stopwatch to calculate percentage of time off task relative to total time counted from exit of Experimenter to return of Experimenter)**

This scale reflects the degree to which the child is engaged in either the task or participating with the mother on the task during the session. Code for child’s actual level of engagement with the task not the mother’s efforts to keep the child engaged.

5. **No Engagement** - Child shows little or no interest in engaging in the teaching task with the mother and this is consistent throughout the session (less than 25% of the time).

6. **Low Engagement** - Child shows some interest in participating in the task but it’s not consistent and child is unengaged or resistant for over half of the time (25-49% of the time).

7. **Moderate Engagement** - Child is engaged in the task for more than half but not all of the session. There are clear moments of disengagement demonstrated by the child (50 to 75% of the time).

8. **High Engagement** - Child is almost continuously engaged in the task – there may be moments where attention wanders but they are brief and intermittent (more than 75% of the time.).

19. **Child Engagement of Parent (12/22/16)**
This scale reflects the extent to which the child (a) shows, initiates, and/or maintains interaction with the parent and (b) communicates positive regard and/or positive affect to the parent. At the higher end of the scale, the child expresses sustained positive affect toward parent (i.e., a big smile, laughter, etc.), and frequently looks at and attempts to interact with the parent.

**Indicators of Child Engagement:**
- Approaching or orienting toward parent
- Looking at, establishing, and/or maintaining eye contact with the parent
- Positively responding to parent's play initiations or suggestions (e.g., imitating parent, accepting toy from parent, following parent's direction)
- Directing or (at a higher level) sharing positive expressions with parent
- Engaging parent in play or sustaining play initiated by parent (e.g. offering an object, requesting help, turn-taking)

**Indicators of Child Disengagement:**
- No sharing of affect with parent
- Overt rejection of parents play overtures
- Pushing offered objects away
- Positioning or orienting away from the parent
- Engaging in self-occupied play which excludes the parent
- Ignoring suggestions from parent

The focus of this scale is on the *quantity* (frequency) of occurrences in which the child shares positive affect with parent (i.e., looking at parent, making eye contact and smiling, and other “approach” behaviors) and or percentage of time engaged cooperatively with the parent. When scoring this scale, keep in mind that the *quality* (intensity) of expression is secondary to the *quantity* of occurrences.

**Child Engagement Scale:**

1. **Very Low Engagement.** The child clearly does not attempt to share experiences with parent. Failure to make eye contact with parent when expressing happiness, directing expressions of happiness to the experimenter rather than to the parent, and similar behaviors can be used as evidence that the child attempts little sharing of feelings with parent.

2. **Low Engagement.** The child has very minor incidents which seem expressive of positive regard toward parent and from which one might infer that some positive feelings are expressed toward her. However, the child largely shows no positive regard toward parent and rarely responds to parent or attempts to engage or sustain play (or cleanup or task involvement) with him/her.

3. **Moderate Engagement.** The child shares some positive regard/happy expressions with parent and/or makes some attempt to engage or sustain play (or cleanup or task involvement) with parent, but these few and only minor elements of interaction and are not sustained by the child
for more than a moment at a time. Likewise, the child may include parent in play (offer a toy, imitate pretend, etc.) or cleanup or the teaching task, but the engagement is not sustained for very long.

4. **Moderately High Engagement.** The child has one or more periods in which s/he engages the parent by expressing positive regard, sharing happy expressions or by sustaining play (or cleanup or task involvement) with the parent or engaged in sustained cooperative interaction with the parent. The child expresses positive affect toward and engagement of the parent for at least one portion of the interaction.

5. **High Engagement.** The child demonstrates a very positive, engaging and sharing relationship toward the parent for a substantial period of the session. Sustained play (or cleanup or task involvement) is accompanied by positive regard toward the parent. The child is consistently engaging of parent and the child’s relationship with parent seems very warm and positive for a major portion of the session. There is no ambivalence in the child's expression of feelings toward the parent.

**20. Child Aggression Tally (code based on amount of incidents observed)**

Tally if the child displayed any verbal or physical aggression.

No symbolic aggression (e.g., eye rolls) will be coded.

Verbal aggression includes yelling at parent or verbal threats (e.g., “I hate you”).

Physical aggression includes hitting, pinching, or kicking the parent. Physical aggression also includes throwing objects, throwing objects at the parent, breaking or destroying toys/equipment or using an object to hit the parent. Physical aggression also includes attempts at aggression (for example, if the child attempts to hit their parent, but misses).

Please also note what type of aggression was observed by listing exactly what was seen (i.e., child hit parent with Legos).

**NOTES (ANY TIME YOU HAVE A HARD TIME CODING, MAKE A NOTE WHY):**

______________________________________________________________________________

______________________________________________________________________________

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**Clean-Up Scoring Sheet (revise 1.9.17)**

**Participant Code:** ______________________________

**Rater:** ______________________________________

**Date:** ______________________________
During Clean-up (check one):

- [ ] child cleaned up
- [ ] mother cleaned up
- [ ] both mother and child cleaned up
- [ ] neither mother or child cleaned up

**Codes**

**Quality of Emotional Support**

31. Mother’s Supportive Presence

1 2 3

Comments:

32. Mutual Pleasure

1 2 3

Comments:

33. Body Harmonics

1 2 3 4

Comments:

34. Mother’s Mental Status

1 2 3 4

Comments:

35. Mother’s Emotional Response to Task and Situation

1 2 3 4

Comments:

36. Parental Touching (circle all that occur and tally total for each type of touch)

0 1 2 3 4 5 6 7

Comments:

37. Denying Emotional Responsiveness
Facilitation of Social/Cognitive Development

38. Quality of Instruction/Structure
1  2  3

Comments:

39. Strategies for Maintaining Child’s Task Involvement
1  2  3  4  5

Comments:

Psychological Abuse

40. Spurning
0  1  2  3

Comments:

41. Terrorizing
0  1  2  3

Comments:

42. Isolating
0  1  2  3

Comments:
Tally: Mild/moderate –
Strong –
Extreme –

43. Corrupting/Exploiting

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Comments:

Tally: Mild/moderate –
Strong –
Extreme –

Child Codes

44. Child Negativity Toward Caregiver

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Comments:

45. Child Experience of the Session

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Comments:

46. Child’s Level of Engagement

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Comments:

47. Child Aggression Tally

Physical –
Verbal –

Comments:

Code Explanations

Quality of Emotional Support

9. Mother’s Supportive Presence (summary code)
A Mother scoring high on this scale expresses positive regard and emotional support to the child. This may occur by acknowledging the child’s accomplishments on the task or unrelated task the child is doing (e.g., cleaning up the toys), encouraging the child with positive emotional regard (e.g., “you’re really good at this,” “you are doing a great job of cleaning up”) and various other ways of letting the child know that he/she has her support and confidence to do well in the setting. If the child is having difficulty on the task, the mother is reassuring and calm, providing an affectively positive “secure base” for the child, perhaps leaning closer to the child to give a physical sense of support.

A mother scoring low on this scale fails to provide supportive cues. She might be passive, uninvolved, aloof, or otherwise unavailable to the child. She may also appear impatient, as if she feels like the activity is a waste of her time and she rather be doing something else. Such a mother also might give observers the impression that she is more concerned about her own adequacy and how she is presenting to the camera, rather than displaying concern about the child’s emotional needs.

A potential difficulty in scoring this scale is to discount messages of mothers that seemingly are supportive in verbal content but are contradicted by other aspects of communication (e.g., the mother seems to be performing a supportive role for the camera and not really engaged in what the child is doing or feeling). Signs of such questionable support are: improper timing of support, mismatch of verbal and bodily cues, and failure to have the child’s attention in delivering the message. These types of supportive messages would not be weighted highly because such features suggest that the mother’s supportive presence is not a ‘sincere’ aspect of their interaction outside the laboratory setting.

Conversely, the mother may seem more supportive than she appears in this situation because she has approached this task as a test of the child’s achievement and has not used as much support as she might have. Yet, the qualitative features of her support would merit a high score.

Codes:

7. Low – Mother provides little or no emotional support to the child. The mother may be aloof and/or unavailable. She may also be hostile towards a child who shows he/she is in need of support. If support is displayed, it is minimal and not timed well, either being given when the child does not really need it, or only after the child has become upset. The consistency of this support may be uneven, so as to make the mother unreliable as a supportive presence.

8. Moderate – This mother does an adequate job of being available when her child needs support. She may lean closer as the child shows small signs of frustration and praise the child’s efforts to show that she is available and supportive, but inconsistency in this style makes her support unreliable as a supportive presence to the child. Additionally, she may have failed to provide support at crucial times in the session (i.e., when support was needed by the child).

9. High – Mother skillfully provides support throughout the majority of the session. She establishes herself as supportive and encouraging toward the child and provides support when the child needs it. As the child experiences more difficulty, her support increases in commensurate fashion. If the child is having difficulty, she finds ways to structure the problem to reward some sort of success by the child and encourage whatever solution the
child can make. She may have minor lapses, but for the most part, she is emotionally supportive and reinforces the child’s successes.

10. Mutual Pleasure (summary code)

Dyad’s emotional connectedness and shared experience of mutual pleasure.

Codes:
7. **Minimal** – The dyad shows no/minimal signs of a positive emotional connection. There are no shared smiles and there may be no mutual eye contact. Mother and child seem to be hesitant to share positive emotions or seem to be restricting positive emotional expression for some reason (e.g., silently angry). The mother and child show no signs of having fun together.

8. **Moderate** – The dyad shows some signs of positive emotional connection, however, the frequency and degree of positiveness is no more than moderate. Sharing of positive affect occurs, however, it is occasional in frequency, restricted in tone and/or duration, or a combination of these, and/or mother and/or child shows some restriction or hesitancy in sharing emotion. [Code “2” if the dyad is emotionally connected, but one or both members are not having fun; also Code “2” if there are a number of instances where one or both members of the dyad experience discomfort, boredom or frustration]

9. **High** – The dyad shows clear signs of a positive emotional connection, which are positive and enthusiastic in tone and occur regularly throughout the session. The dyad may show frequent mutual eye contact or the dyad may show positive, enthusiastic sharing of positive emotions (e.g., “four-eyed” smiles). Neither the mother nor child shows signs of restricting emotional communication with each other. The mother and child seem to be having fun together. Also code 3 if both mother and child express interest and seem content, and no negativity, discomfort, boredom, or frustration is evident.

11. Body Harmonics (predominant mode)

Rate the predominant mode; rate body orientation, degree of “insynctness” between the parent and child

*Note: For some tasks parents may be sitting next to or just behind their child, typically in order to both be oriented towards a task, but are engaged in the same task. If this occurs as the predominant mode, code “4”.

Codes:
9. Neither mom nor child oriented to the other (similar to parallel play)
10. Child oriented to mom, mom not orientated to child
11. Mom oriented to the child, child not to mom
12. Both oriented towards each other – mom oriented to the child, child to the mom

12. Mother’s Mental Status (summary code)
*Note: A code of “2” or “3” does not indicate that the parent is at-risk of a mental illness; a code of “2” indicates that the parent is displaying one or more of the behaviors listed under a “2” or “3.”

Do not consider an overall mode of “angry” or “impatience” if mother is using appropriate, firm limit setting in response to a child’s inappropriate behaviors (e.g., throwing a toy, breaking a toy, and/or hitting a parent). However, if a parent uses a harsh tone, threatening voice, or threatening words while attempting to discipline/set limits, this should be coded here.

Codes:
9. Mother exhibits clear signs of mental distress and/or mental health problems (e.g., depression, hyperactivity, psychotic behavior, mania, etc.)
10. Mother’s mood and/or behavior may angry or impatient, but shows no overt signs of mental illness
11. Mother’s mood and/or behavior may appear anxious or distressed but shows no overt signs of mental illness
12. No mental distress or psychiatric impairment obvious to the observer

5. Mother’s Emotional Response to Task and Situation (summary code)

Codes:
9. **Negative Response** - Overt negative response: bored, irritable, impatient (e.g., Mother says, “this stinks”)
10. **Passive Response/Lack of Interest** - Passive or resigned. Putting forth very little effort, not encouraging the child, and not being actively involved (minimal effort put in by parent).
11. **Business like OR mix of a positive and negative response** – Parent who is actively involved and keeping the child involved. They may also say “Ok, we have to clean up” or “come on, put the Legos in the bag” but without interest, enthusiasm or pleasure in doing the task with child. Mix will include some positive behaviors mixed in with an impatient or critical tone.
12. **Positive** - Participates with interest and enthusiasm, and demonstrates occasional pleasure or enjoyment of the task. Positive emotions can include expression of empathy and concern, not just pleasure and personal enjoyment.

6. Touching (circle ANY that apply)

*Code parental touch, not child touch* – Specifically, if the child reaches out to touch the parent (in a hostile OR affectionate way), this is NOT coded. However, if the parent reciprocates/responds in any way, this should be coded. Tally the frequency of each type of touch.

Codes:
16. No touch/inadvertent touch (e.g., fingers brush as both reach in to get a toy)
17. Hostile touch (pinching, hitting, slapping, tightly gripping)
18. Touching to control (e.g., hold down, direct, hold down to control an out of control child, hold to control child’s movement; if for example the child began hitting themselves, and the parent held both of the child’s arms down at their sides to keep them from hurting themselves)
19. Touching to encourage or appropriately prompt/direct child’s attention (e.g., tap on shoulder before pointing to an object)
20. Touching to make child attend (e.g., including moving the child’s face or putting “blinders” on the child to direct them to make eye contact)
21. Touching to direct by using hand over hand (e.g., parent puts their hand on top of their child’s hand and moves the child’s hand)
22. Affectionate touch (no seductive overtures; e.g., giving a hug, touching child's hair)
23. Other touch (if you see any other type of touch, code 7 and note what you saw)

7. Denying Emotional Responsiveness  (code based on amount of incidents observed)

Coding judgments regarding negative acts by parent/caregiver (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

8. Non occurrence
9. One to two mild-moderate acts
10. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
11. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than extreme)

*Note: Body posturing is included in this code.

Judge acts, not intentions or consequences. Don’t judge on basis of a hypothesis or general point of view you’ve formed, put down what you see even if there is contradictory evidence (accepting and rejecting behaviors).

Keep tallies for mild/moderate, strong, and extreme behaviors.

If child makes explicit-direct-overt demands=requests (including affective, cognitive and motor demands and/or requests), a parent who denies emotional responsiveness may respond by ignoring, behaving in detached/uninvolved manner, failing to respond, avoiding interaction, or refusing to interact

If child makes implicit-indirect-covert needs/requests (including affective, cognitive, and motor needs/requests), a parent who denies emotional responsiveness may respond by ignoring, behaving in detached/uninvolved manner, failing to respond, avoiding interaction, or refusing to interact

Additionally, unavailable posturing of parent would discourage a child from seeking a response and would also be considered denying emotional responsiveness.
Examples of this are listed below:

**Mild** –
- Child seems worried (frown, body posture, nervous behaviors) and mother shows little to no response
- Mom attending to child – eye contact and posture – is at low level under conditions where more would be expected
- Mom attending to child, but arms crossed (e.g., if mom crosses her arms in response to child during a critical period or sustained arm crossing or consistently displays this posture throughout the interaction)

**Moderate** –
- Child appears very elated/excited or worried/depressed about what she/he’s just done or will do next and mother shows little to no response (e.g., Child is very excited about cleaning up the toys/task and the parent shows little to no response)
- Mom tends not to look, touch, or talk to child unless child presses strongly for attention

**Strong** –
- Child makes requests or asks for help and mom does not respond at all or lets child know child is on his/her own by saying “you do it yourself” or “you figure it out”
- Mom doesn’t respond to child’s reasonable but non-task oriented requests – “I’m thirsty” or “I want a drink”
- Child visibly shows very strong reaction to situation (e.g., cries, shakes, throws materials down) and mother does not respond
- Mom maintains body orientation and posture away from child’s position in an unusual or awkward way that doesn’t fit – and other options are available (e.g., Mother actively turns her whole body away or keeps face averted)

**Facilitation of Social/Cognitive Development**

**8. Quality of Instruction/Structure (summary code)**

The important features of this rating are how well the mother structures the situation so that the child knows what the task objectives are and receives hints or corrections while attempting to clean-up. These hints or corrections are: a) timely to his/her current focus, b) paced at a rate that allows comprehension and use of each approach/cue, c) graded in logical steps that the child can understand, and d) stated clearly without unnecessary digressions to unrelated phenomena or aspects of the task that might only confuse the child. The mother’s approach suggests that she has some sort of plan for how her instructions/structure will help the child. Yet, she is also flexible in her approach and uses alternative strategies or rephrases suggestions when a particular cue is not working, and she coordinates her suggestions to the effort that the child is making to solve the task. Lastly, she keeps the child focused and helps them to attend to the task. If the child begins to go off task (playing with the toys) she helps to bring the child back to the task at hand (cleaning up).

Codes:
6. **Low**– Lack of/poor instructions/structure. Minimal instructions/structure is given for cleaning up. Most attempts (if any) are ineffective. Child may not understand what to do or what is expected of him/her due to lack of instructions. And/or the mother’s attempt to structure the child’s environment/instructions are uniformly of poor quality (i.e., poor timing/pace, incomprehensible, no scaffolding, etc.). She is either totally uninvolved or fails to structure the tasks effectively.

7. **Moderate**– Adequate instructions/structure. Mother provides adequate structure and instruction for the child to begin cleaning up, but if a child efforts falter or a child becomes distracted, she either does not provide support for continuous cleaning or provides instructions that are of poor quality (e.g. giving very fast directives).

8. **High**– Effective, continuous, and appropriate instructions/structure. Mother demonstrates most characteristics of effective instruction/structure consistently throughout the session. Her directions are sufficiently structured so that the child understands the objectives and can clean-up the toys. Mother’s assistance is coordinated to the child’s activity and needs for assistance. For the most part, the mother keeps the child’s attention and focus on task.

9. **Strategies for Maintaining the Child’s Task Involvement** (predominant mode):
This scale reflects the methods used by the mother to encourage and maintain task involvement on the part of the child. The parent’s use of verbal reinforcement (positive and negative) is paramount in this item. Parents are rated higher when they involve the child in the task and in the enjoyment of the process of working together. They are rated higher for more specific praise versus nonspecific praise. They are rated higher for using praise versus bribes or threats to engage the child. Parents who have a child who is noncompliant are not automatically rated lower if they respond appropriately by trying other strategies until the child cooperates or they decide that the task cannot be continued.

**Rule:** If are between 2 codes and you have seen signs of threats, manipulation or coercion in order to promote the child’s involvement, code the lower of the 2 codes (even if some positive methods are used).

**Codes:**

5. **Lack of effort/Threatening** - Parents may receive the lowest score in 2 ways: either little or no effort is made to involve the child in the task OR Physical and verbal threats are used to promote the child’s involvement in the task as in, “Do this or else!”. Punitiveness is the major strategy for control – the child is coerced to act to avoid unpleasant behaviors by the adult.

6. **Manipulation/Coercion** - Parental bribery or whining the primary strategies used to promote the child’s involvement. Rewards not associated directly with the task are given or promised to get the child to participate. Examples: “You’ll (We’ll) get ice cream if we can finish cleaning up.,” or parent nags and/or whines until the child complies (e.g., in a whining voice says, “Come on, help me, I want to do this well”). **Note, the parent may use other ineffective strategies, such as intrusive questions or directives, as well, but those are not the only strategies used.**

7. **Directives only** - Clarifying, giving information, and directing the task are the methods used to enlist child involvement. No praise, no threats, and no bribes are used. 

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example, a parent may give step-by-step instructions to a low functioning child, and not threaten or praise either.

8. **Information and non-specific praise** - Clarifying structure and giving information about the task process are used to prompt and enlist the child’s involvement, such as, “this goes next,” “it’s your turn,” “look here.” Additionally, the parent may use non-specific praise and global feedback to promote the child’s involvement in addition to verbal prompts and structuring information. “Good girl,” “nice job,” and “perfect” are examples of non-specific praise. Alternatively, the parent may demonstrate clear interest (e.g., paying attention to the child, commenting, asking non-intrusive questions, saying “Ohhh” and “Ahhh”), but not give praise. If parent demonstrates clear interest without giving praise, also code this here. In addition, the parent may also ask the child questions or make statements to help maintain their involvement. This item encompasses a parent who uses a variety of different strategies, but no coercive, manipulative, or threatening strategies.

9. **Specific praise** – **At least** one instance of specific praise is observed. The parent provides specific, positive, and well-timed references to the child’s effort and effectiveness are used to get and maintain the involvement of the child. The parent primarily highlights special task qualities of intrinsic interest to the child to stimulate the child’s involvement. Mother also provides some verbal prompts and structuring information. Examples for clean-up include “You are doing a nice job of putting the Legos back in the bag” or “you’re working hard, we’ll be done cleaning up soon.”

**Psychological Abuse**

FOR ALL CODES IN THIS CATEGORY:

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

8. Non occurrence
9. One to two mild-moderate acts
10. **Pattern** of repeated mild-moderate acts (3 or more instances) or one strong act
11. **Pattern** of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Judge acts, not intentions or consequences. Don’t judge on basis of a hypothesis or general point of view you’ve formed, put down what you see even if there is contradictory evidence (accepting and rejecting behaviors).

Keep tallies for mild/moderate, strong, and extreme behaviors.

10. **Spurning**  (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

8. Non occurrence
9. One to two mild-moderate acts
10. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
11. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Active rejecting and/or degrading through words, gestures, and/or other behaviors. Spurning includes, belittling, degrading, and other nonphysical or overly hostile/rejecting treatments used towards a child. Shaming and/or ridiculing a child are also included in this code. Score mother’s contempt towards the child here. Do not score appropriate limit setting here (for example, if child is throwing toys or hitting and the parent tells them to calm down or stop their behavior).

*Examples:*

**Mild** –
- “Are you frustrated already?”
- “This will be hard for you” (unjustified by situation)
- “I’d better do this part for you” (unjustified by situation)
- Frowning at child’s efforts while allowing him/her to continue.
- Mild shaming (publicly teasing). For example, “Make sure we leave this cleaner than your room at home” (while child cleans up)
- Parent may tell the child to stop crying
- Parent may say, “Put a smile on it, honey” when the child looks upset
- Continuing to talk over a child as they try to express an idea (even if the parent is not being mean towards the child). Another way to conceptualize this is to think of the parent “rejecting” their child’s idea by not letting the child express their idea.

**Moderate** –
- “Let me do it, you’ll mess it up”
- Makes facial expression of disbelief for child to see as reaction to child’s attempt
- Parent tells a child that they are not experiencing a specific emotion (e.g., mother says, “no, you’re not sad”)

**Strong** –
- “Keep your hands off – you’ll screw it up!”
- “You just watch – we want to do it right”
- “Come on stupid – can’t you get it?”
- “You’re a real loser, aren’t you?”
- Laughs mockingly at child’s error or attempt
- Shaming. For example, making fun of the child’s bedwetting problem
- Parent firmly and repeatedly tells a child to cease displaying a specific emotion
- Parent makes fun of a child for displaying a specific emotion

**11. Terrorizing (code based on amount of incidents observed)**
Coding judgments regarding negative acts by parents/caregivers (an act-instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

8. Non occurrence
9. One to two mild-moderate acts
10. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
11. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

*Note: Voice quality is included in this code

**Key concept:** Judge act(s) in regard to its threat or danger to the average child of the target child’s development level in the mainstream culture.

Threaten child with violence.
Threatening violence against child’s loved ones (other family members) or objects (comfort toys or favorite toys).
Physical attack on/act of violence directed toward child.
Place child in an unpredictable, chaotic, or frightening situation (at the extreme, placing the child in a recognizably dangerous situation).

Examples:

**Mild** –
- “You’d better behave”
- Abrupt – harsh voice quality
- In a harsh voice says, “put that back!”

**Moderate** –
- “You know what will happen to you if you don’t straighten up”
- Tightens body posture and facial expression in threatening and observable manner for child
- Thrusting/pointing index finger toward child to influence behavior
- Shouts threats of physical harm at child

**Strong** –
- Slams fist down on table
- Menacing gestures made toward child – facial expression, growl, fist shaking
- Grabs child physically and exerts physical pressure in a manner that is too rough and overly controlling
- Threats of physical harm at child such as “I’m going to whip you in a minute.”

**12. Isolating (code based on amount of incidents observed)**
Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

8. Non occurrence
9. One to two mild-moderate acts
10. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
11. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)

Physically isolate/confine (confining child or placing unreasonable limitation on freedom of movement)
Socially isolate/confine (placing unreasonable limitations/restrictions on social interactions with peers or adults – this may be done verbally in the session)
Actively terminate communication.
Examples:

Mild –
- Very little conversation initiated by mother

Moderate –
- Lack of initiation or response - Mom doesn’t initiate talk and only talks to child when child initiates conversation (including gestures, tapping, or sound)
- Tries to keep child from communicating with others present (e.g., examiner)

Strong –
- Says “stop talking” or “don’t talk while you’re working” when the child initiates or attempts to make social contact
- Refuses to allow child freedom to get drink or go to toilet when request/need is expressed with no acceptable rationale given
- Mom is in parallel play mode throughout most of process with little to no interaction or mutually facilitating behavior shown
- Keeps child from contact with others when they enter the room by using own body as shield, by dominating all interactions
- Context seems to demand conversation, and none occurs

13. Corrupting/Exploiting (code based on amount of incidents observed)

Coding judgments regarding negative acts by parents/caregivers (an act/instance is considered one interaction/topic. For example, the mother says something, the child replies, and the mother or child says something else on the same topic):

8. Non occurrence
9. One to two mild-moderate acts
10. Pattern of repeated mild-moderate acts (3 or more instances) or one strong act
11. Pattern of repeated strong acts (2 or more instances) or one extreme act (worse than strong)
Key Concept: Code based on observations of the parent leading the child away and astray from the task.

Using a child in ways serving the adult, and not the child, or meeting own needs in ways directly interfering with child’s attempts to meet his/her needs encouraging or coercing abandonment of developmentally appropriate autonomy, and/or extreme over-involvement
Actively encouraging/teaching anti-social, self-harming, or developmentally inappropriate behavior
Modeling/demonstrating behavior which is anti-social, self-harming, or developmentally incorrect/inappropriate
Allowing child behavior which is anti-social, self-harming, or incorrect/inappropriate
Restricting or interfering with the child’s cognitive development.

Examples:

Mild –
• Says, “it doesn’t matter how we do this, just so we get it done”

Moderate –
• Plays with/manipulates materials in a manner interfering with the child’s opportunity to clean-up
• Models/demonstrates inefficient or incorrect procedure for cleaning up
• Shows little to no interest in having the child participate in cleanup
• Seems only interested in getting it over and getting the task done
• Allows child (without corrective follow-up) to use foul language or make statements degrading self or others
• The parent does not allow the child to come up with his/her own ideas of how to tackle the task at hand (e.g., the parent may fire questions/directives at the child in a way that does not allow child to come up with his/her own ideas)

Strong –
• Says “this is stupid – let’s get it over with”
• Demonstrates/models ways to cheat or avoid responsibility such as encouraging the child to not take responsibility for clean-up saying “just let the teacher clean-up.”
• Uses strong language that degrades others
• Encourages child to use foul language, make degrading statements, or engage in other inappropriate behavior (e.g., by smiling or laughing)
• Mother demands a shift in attention to her own topics in a way that hinders the child’s development (takes child away from the task) and persists in this shift in attention (e.g., mother insists that the child discuss their babysitter’s cell phone habits as the child attempts to play pretend with the toy phone. The mother continues to ask questions and does not allow the child clean-up.)
Child Codes

14. Child Negativity (summary code)

*Remember, this is child negativity directed at the caregiver*

Degree to which the child shows anger, dislike, or hostility toward the mother. At the high end, the child is repeatedly and overtly angry during the session and/or at the mother (e.g., forcefully rejecting her ideas, showing angry and resistant expression, pouting, or being unreasonably demanding or critical of her). At the low end, there are neither overt nor covert signs of such anger. Expressions are essentially positive toward mother/within the session whether or not the child is compliant or much involved with the mother.

**Rule:** If it is unclear if the child is acting negative towards the mother or the task, do not code the behavior here.

**Codes:**

7. **Positive** (i.e., no signs of negativist towards mother)- Child shows no signs of negativism towards the mother. She/he shows through consistently positive interactions toward the mother that she/he has a truly positive relationship toward the mother/within the session and feels no abiding anger toward the mother/within the session. [Code here if there are no clear negative signs towards the mother, even if no clear positive interactions are evident.]

8. **Mix of negative and positive** - Child shows a mix of negativism and positivism towards the mother. Neither negativism nor positivism is predominant in the interaction; there is a mix of both negative and positive interactions.

9. **Negative towards mother**- Child’s anger and negativism are predominant in the interaction between the child and mother. The child is repeatedly and overtly angry and resistant during the interaction. The degree of anger seems so strong that the child cannot disguise it in subtler ways for long, but it repeatedly appears in his/her interactions.

15. Child’s Experience of the Session (summary code)

This scale reflects the degree to which the child’s experience in the session probably resulted in feelings of success and competence on the tasks and confidence in having a good relationship with his/her mother. This scale reflects a variety of contributions in the child and mother’s behavior, which might contribute to the child’s experience of session. A child scoring low on this scale might have had many conflicts with his/her mother or might have been dominated or been rejected by the mother in ways that would affect the child’s experience of success in the session. A child scoring high on this scale would have been able to work well with the mother and to do the tasks successfully with some sense of autonomy in problem-solving through appropriate maternal assistance in the session.

7. **Low** - Child had a very negative experience which probably contributed to lower expectations of his/her own competence, anger at self or mother, rejection by the mother, or intense resistance between mother and child. There was very little in the session to
compensate for these negative events. Almost no good or only one good instance of positive experiences in the session.

8. *Moderate* - A mix of positive and negative instances throughout the session. The session may be a moderately negative experience for the child, but overall, neither a success nor a failure experience of the child; *OR* The child seemed to get through the session with success and basically have positive interactions with his/her mother, but there might have been some minor aspects in which the child or mother’s contributions may have been deficient in helping the child feel success. For example, the child may have success in the task, but not display a good relationship with their mother, or vice versa.

9. *High* - The child has a very positive experience of doing well on the tasks and having a good relationship with his/her mother. There were very positive interactions between the mother and child, and the child was able to do the tasks with enough help and enough autonomy to experience competence in doing the tasks. Although minor problems in the session might have occurred, the overall effect of the mother and child’s interactions was very positive in terms of the child’s experience of success and confidence in the relationship. [A child who seems content/happy throughout the session regardless of interactions with their parent (e.g., a child who works independently and does not seem to care if the parent participates), should get coded here.]

16. **Child’s Level of Engagement in the Task**

This scale reflects the degree to which the child is engaged in either the task or participating with the mother on the task during the session. Code for child’s actual level of engagement with the task not the mother’s efforts to keep the child engaged.

9. *No Engagement* - Child shows little or no interest in engaging in the clean-up task with the mother and this is consistent throughout the session (less than 25% of the time).
10. *Low Engagement* - Child shows some interest in participating in the task but it’s not consistent and child is unengaged or resistant for over half of the time (25-49% of the time).
11. *Moderate Engagement* - Child is engaged in the task for more than half but not all of the session. There are clear moments of disengagement demonstrated by the child (50 to 75% of the time).
12. *High Engagement* - Child is almost continuously engaged in the task – there may be moments where attention wanders but they are brief and intermittent (more than 75% of the time.).

17. **Child Aggression Tally (code based on amount of incidents observed)**

Tally if the child displayed any verbal or physical aggression.

No symbolic aggression (e.g., eye rolls) will be coded.

Verbal aggression includes yelling at parent or verbal threats (e.g., “I hate you”).
Physical aggression includes hitting, pinching, or kicking the parent. Physical aggression also includes throwing objects, throwing objects at the parent, breaking or destroying toys/equipment or using an object to hit the parent. Physical aggression also includes attempts at aggression (for example, if the child attempts to hit their parent, but misses).

Please also note what type of aggression was observed by listing exactly what was seen (i.e., child hit parent with Legos).

NOTES (ANY TIME YOU HAVE A HARD TIME CODING, MAKE A NOTE WHY):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
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## Appendix G

Table G1.

*Descriptive Statistics for Psychological Multifactor Care Scale – ASD Spectrum Disorder Adapted Version Observed Parenting and Child Experience*

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<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
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<td>.49</td>
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<td>Quality of Instruction/Structure (3)</td>
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<td>3</td>
<td>2.55</td>
<td>.55</td>
</tr>
<tr>
<td>Respect for Child’s Autonomy (5)</td>
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<td>5</td>
<td>3.84</td>
<td>.81</td>
</tr>
<tr>
<td>Strategies for Maintaining Child’s Task Involvement (5)</td>
<td>3</td>
<td>5</td>
<td>4.11</td>
<td>.44</td>
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<tr>
<td>Denying Emotional Responsiveness a</td>
<td>0</td>
<td>1</td>
<td>.14</td>
<td>.35</td>
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<tr>
<td>Parental Intrusiveness a (3)</td>
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<td>.70</td>
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<tr>
<td>Spurning a</td>
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<td>1</td>
<td>.05</td>
<td>.21</td>
</tr>
<tr>
<td>Terrorizing a</td>
<td>0</td>
<td>1</td>
<td>.02</td>
<td>.15</td>
</tr>
<tr>
<td>Isolating a</td>
<td>0</td>
<td>1</td>
<td>.02</td>
<td>.15</td>
</tr>
<tr>
<td>Corrupting/Exploiting a</td>
<td>0</td>
<td>2</td>
<td>.23</td>
<td>.52</td>
</tr>
<tr>
<td>Child Experience of the Session (3)</td>
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<td>3</td>
<td>2.68</td>
<td>.52</td>
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<tr>
<td><strong>Cleanup</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mother’s Supportive Presence (3)</td>
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<td>3</td>
<td>2.74</td>
<td>.45</td>
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<td>Category</td>
<td>Score 1</td>
<td>Score 2</td>
<td>Score 3</td>
<td>Score 4</td>
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<td>---------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>Mutual Pleasure (3)</td>
<td>1</td>
<td>3</td>
<td></td>
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<td>Body Harmonics (4)</td>
<td>3</td>
<td>4</td>
<td></td>
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<tr>
<td>Mother’s Mental Status (4)</td>
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<td>4</td>
<td></td>
<td></td>
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<tr>
<td>Mother’s Emotional Response to Task and Situation (4)</td>
<td>3</td>
<td>4</td>
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<td></td>
</tr>
<tr>
<td>Quality of Instruction/Structure (3)</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategies for Maintaining Child’s Task Involvement (5)</td>
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<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denying Emotional Responsiveness (^a)</td>
<td>0</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spurning (^a)</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terrorizing (^a)</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolating (^a)</td>
<td>0</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrupting/Exploiting (^a)</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child Experience of the Session (3)</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Descriptives are reported based on raw scores before transformations. \(n=44\) for Teaching and Free Play; \(n=42\) for Cleanup. All positive parenting scales and Intrusiveness begin at 1, and the number in parenthesis represents whether it was a 3-, 4-, or 5-point scale.

\(^a\) Harsh Parenting items, where a higher score indicates higher level of harsh behaviors. Item scales (except Intrusiveness) range from 0 to 3.
Appendix H

Table H.1 Regression Analysis Summary for Maternal Depression, Self-Care, Parental Stress, and Quality of Observed Positive Parenting

<table>
<thead>
<tr>
<th>Antecedent</th>
<th>M1 (Depression)</th>
<th>M2 (Parental Stress)</th>
<th>Y (Self-Care)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>SE</td>
<td>p</td>
</tr>
<tr>
<td>X (+ Parent)</td>
<td>a1</td>
<td>-0.43</td>
<td>2.38</td>
</tr>
<tr>
<td>M1 (Depress)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>M2 (Stress)</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>i</td>
<td>-0.73</td>
<td>2.38</td>
</tr>
<tr>
<td>Adlts Home</td>
<td></td>
<td>1.67</td>
<td>0.57</td>
</tr>
<tr>
<td>White</td>
<td></td>
<td>0.60</td>
<td>1.37</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>-0.97</td>
<td>1.53</td>
</tr>
<tr>
<td>Household Income</td>
<td></td>
<td>0.07</td>
<td>0.37</td>
</tr>
</tbody>
</table>

\[ R^2=0.28 \]
\[ F (5,32) = 2.48, \ p=.05 \]
\[ R^2=0.55 \]
\[ F (6,31) = 6.24, \ p<.001 \]
\[ R^2=0.35 \]
\[ F (7,30) = 2.32, \ p=.05 \]

Through a mediation analysis conducted using ordinary least squares path analysis controlling for adults in the home, quality of parenting did not indirectly or directly influence self-care through its effects on depressive symptoms relating to parental stress. As can be seen in Table 8.1 individuals with high levels of positive parenting related to lower levels of depression \( (a_1=-0.43) \), which significantly relate to parenting stress \( (d_{21}=2.18) \). However, parental stress did not significantly relate to self-care \( (b_2=-0.07) \). A bootstrap confidence interval was not significant
for any paths based on 5,000 bootstrap samples. There was no evidence self-care independent of its effect on maternal depressive symptoms and stress (c’=0.14, p=.621).

Table H.2  Regression Analysis Summary for Maternal Depression, Self-Care, Parental Stress, and Quality of Observed Harsh Parenting

<table>
<thead>
<tr>
<th>Consequent</th>
<th>M1 (Depression)</th>
<th>M2 (Parental Stress)</th>
<th>Y (Self Care)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>SE</td>
<td>p</td>
</tr>
<tr>
<td>X (Harsh Parenting)</td>
<td>a1 0.08</td>
<td>0.29</td>
<td>.770</td>
</tr>
<tr>
<td>M1 (Depression)</td>
<td>-- --</td>
<td>--</td>
<td>d21 3.09</td>
</tr>
<tr>
<td>M2 (P Stress)</td>
<td>-- --</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>i_m1 3.13</td>
<td>0.80</td>
<td>.000</td>
</tr>
<tr>
<td>Race/Ethnicity White</td>
<td>0.14</td>
<td>1.20</td>
<td>.908</td>
</tr>
</tbody>
</table>

A second mediation analysis was conducted using ordinary least squares path analysis, controlling for race/ethnicity white vs. not, indicated quality of observed harsh parenting indirectly influenced self-care through its effects on depressive symptoms and parental stress. As can be seen in Table 8.2, individuals with high levels of harsh parenting was not associated with lower levels of depression (a1=0.08), however more depressive symptoms was related to higher levels of stress (d21=3.09), which did not relate to self-care (b2=−0.42). A bootstrap confidence interval was significant based on 5,000 bootstrap samples. The significant indirect effect (a2b2=−0.20) was entirely below zero (−0.548, −0.016) for the path of harsh parenting, relating to parental stress, relating to use of self-care such that individuals with higher levels of harsh parenting demonstrated more stress and fewer uses of self-care. There was no evidence that harsh parenting influenced self-care independent of its effect on maternal depressive symptoms and stress (c’=0.23, p=0.516).
Through a mediation analysis conducted using ordinary least squares path analysis controlling for adults in the home, quality of parenting did not indirectly or directly influence self-care through its effects on parental stress relating to maternal depressive symptoms. As can be seen in Table 9.1 individuals with high levels of positive parenting related to lower levels of parental stress (a₁=−3.62), which significantly related to maternal depressive symptoms (d₂₁=−0.10).

However, depressive symptoms did not significantly relate to self-care (b₂=−0.29). A bootstrap confidence interval was not significant for any paths based on 5,000 bootstrap samples. There was no evidence that self-care influenced quality of parenting independent of its effect on stress.
A second mediation analysis was conducted using ordinary least squares path analysis, controlling for race/ethnicity white vs. not, indicated quality of observed harsh parenting indirectly influenced self-care through its effects on symptoms of depression and parental stress. As can be seen in Table 9.2, individuals with high levels of harsh parenting was not associated with higher levels of parental stress ($a_1=2.87$), however more parental stress was related to higher levels of depressive symptoms ($d_{21}=0.11$), which did not relate to self-care ($b_2=-0.42$). Two separate bootstrap confidence interval were significant based on 5,000 bootstrap samples. The first significant indirect effect ($a_2b_1=-0.22$) was entirely below zero (-0.568, 0.016) for the path of harsh parenting, relating to parental stress, relating to use of self-care. The second significant indirect effect ($a_1d_{21}b_2=-0.133$) was entirely below zero (-0.435, -0.008) for the path of harsh parenting, relating to parental stress, relating to maternal depressive symptoms, relating to self-care. There was no evidence that harsh parenting influenced self-care independent of its effect on maternal depressive symptoms and stress ($c'=0.23, p=0.517$).