

THE ROLE OF YOUNG MOTHERS' COPING WITH PARENTING STRESS IN THE  
QUALITY OF THEIR PARENTING

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## The Role of Young Mothers' Coping with Parenting Stress in the Quality of their Parenting

### Abstract

Adolescent parenting is a risk factor for poor parenting quality. Young mothers are exposed to multiple stressors which may decrease their capacity for sensitive caregiving. Nonetheless, there is a large degree of variability in the quality of teen mothers' parenting. Embedded in a longitudinal randomized controlled trial evaluation of a large child maltreatment prevention home visiting program, this dissertation study examined whether differences in how adolescent mothers cope with parenting stress help explain this heterogeneity in parenting outcomes. To answer this question, the author developed and validated a measure of reflective coping. The proposed factor structure of coping was evaluated using confirmatory factor analysis. The analysis did not confirm the structure of the originally proposed model of coping but a revised model fit the data well. Results confirmed the hypothesis that the negative impact of risk factors was weakened when mothers engaged in higher reflective coping. This study enhances our understanding of antecedents of positive parenting in high-risk populations and informs prevention programming and policy.



## Chapter 1: Statement of the Problem

While caring for an infant is a demanding task for anyone, parenting is a uniquely stressful situation for teen parents (Savio Beers & Hollo, 2009). As a group, teenage mothers are more distressed than both childless adolescent peers and adult mothers (Mollborn & Morningstar, 2009). In addition to negotiating the developmental demands of adolescence, teenage mothers must adjust to the new role of being a parent (Hess, Papas, & Black, 2002; Moore & Brooks-Gunn, 2002; Norria, Weed, & Keogh, 2007). Further, teen parenthood has been linked with a disproportionately higher exposure to multiple sources of stress, such as poverty, underemployment, school failure, isolation and decreased social support, depression and other mental health concerns, and single parenthood (for review, see Borkowski, Farris, Whitman, Carothers, Weed, & Keogh, 2007). It has been argued that, because they are exposed to increased stress at a time when their own personal resources for coping are still developing, adolescent mothers may provide less than optimal parenting (Passino et al., 1993). Teen mothers were found to have more punitive attitudes towards childrearing, show less responsive and sensitive behaviors, provide a less stimulating environment for their infants, including fewer vocalizations, and have more unrealistic expectations of their infant's development, less enjoyment of the mothering role, and greater parenting stress than adult mothers (Bornstein, Putnick, Suwalsky, & Gini, 2006; Budd, Heilman, & Kane, 2000; Chang & Fine, 2007; DeVito, 2007; Hess, Papas, & Black, 2002; Noria, Weed, & Keogh, 2007; Richards, Papworth, Corbett, & Good, 2007). Children born to teen mothers are at a heightened risk for abuse and neglect; some studies documenting as much as a twofold increase in risk of being maltreated compared to children born to older women, although these findings have not been consistent (Borkowski et al., 2007; DePanfilis, 2006; Hoffman, 2006; Lounds, Borkowski, & Whitman, 2006).

Although the majority of studies of adolescent parenthood have focused on the problems associated with this phenomenon, recently researchers have begun to challenge the deterministic discourse about the poor life prospects of adolescent parents and their children (Savio Beers & Hollo, 2009). In particular, studies have documented that a large degree of variability in the quality of adolescent mothers' caregiving exists notwithstanding the prevalence of risk factors and that most adolescent mothers adapt well to the parental role, thus arguing that teen parenthood is not a universally negative event (Borkowski et al., 2007; Breen & McLean, 2010; Chang & Fine, 2007; Easterbrooks, Chaudhuri, Dym Bartlett & Copeman, 2011; Hess, Papas, & Black, 2002; Moore & Brooks-Gunn, 2002).

The mounting evidence that despite the challenges of parenting at a young age, not all teen parents manifest poor outcomes as would be predicted, is consistent with the literature on *resilience* which is defined as the manifestation of positive adaptation despite significant threat, adversity or trauma (Luthar, 2003). The widespread appeal of the construct of resilience arguably lies in its potential to inform preventive and interventive strategies. By focusing on individuals who exhibit positive adaptational outcomes, the resilience framework aims to direct policy-makers to empirical knowledge about the processes that mitigate the detrimental effects of adversity and can consequently be promoted to foster successful adaptation of more individuals (Luthar, Sawyer, & Brown, 2006). A similar approach, which first appeared in nutrition research in 1990s, *positive deviance*, aims to identify the uncommon, beneficial practices employed by a few at risk individuals who consequently experience better outcomes than their neighbors who share similar risks (Marsh, Schroeder, Dearden, Sternin, & Sternin, 2004).

Resilience researchers have examined various variables thought to facilitate positive life trajectories in populations that are at risk for adaptational failures (Lester, Masten, & McEwen,

2006; Luthar, Cicchetti, & Becker, 2000; Schoon, 2006). Various protective factors have been identified, including positive temperament, sociability, responsiveness, adaptability in infancy and early childhood, a warm, supportive family environment, including a sound relationship with a primary caregiver; and positive extrafamilial support and identification models (Kilmer, Cowen, Wyman, 2001; Yates, Egeland, & Sroufe, 2003). Researchers acknowledge, however, that it is impossible to identify a narrow list of keystone factors that predict healthy outcomes in all individuals, as protection most likely derives from circumstances that are salient in a particular life context and unfold temporally (Rutter, 2006; Ungar, 2004). Additionally, there has been considerable debate about the exact nature of the relations among risks, protective factors and adaptation that result in resilience. For instance, Luthar, Sawyer, & Brown (2006) note that supportive family relationships have been described to play a protective role, but in order to translate this factor into practice, one would need to unpack the processes that make it protective: "What is it, exactly, about family support that might promote resilience: A sense of security? High self-esteem? Feelings of control?" (p. 107).

Thus, although identification of protective factors has been helpful in furthering our understanding of individual differences in adaptation, the processes by which these variables lead to particular outcomes in individuals, and the role of the individuals in this process, are still poorly understood (Breen & McLean, 2010). To address this challenge, Rutter (2006, 2007) suggested that, in contrast to documenting the static presence of specific protective factors that carry maximal weight differentiating resilient and non-resilient outcomes, research should focus on dynamic mental processes that determine what people do to deal with adversity, and in particular, on coping. Along the same lines, researchers of emotion and emotion regulation, who define resilience as the maintenance of high levels of positive affect and well-being in the face of

significant adversity, posit that resilient functioning could be explained by the ability to engage in the kind of meaning making process that facilitates rapid down-regulation of negative affect elicited by stressful events (Davidson, 2000; Urry et al., 2004).

Arguably the most widely researched area in psychology with over 40 thousand scientific articles devoted to it, coping holds a leading position among the psychosocial factors proposed to explain individual differences in response to adverse environmental factors (Aldwin, 2007, 2011; Frydenberg, 2008; Somerfield & McCrae, 2000). The idea that coping mitigates the adverse effects of stress is intriguing because, unlike such status variables as personality dispositions, biological and psychological vulnerabilities, motivational structures, history and cohort effects, coping can be modified and therefore enhanced to improve adaptation (Folkman, 1991, 2011). This quality makes coping an ideal construct to investigate in relation to resilience, given that researchers of resilience recognize that most effort should be put to identification of those antecedents and correlates of optimal functioning that are malleable to change via interventions and generative of other assets (Luthar, Sawyer, & Brown, 2006).

Rutter's proposal provides the guiding framework for this study. Given the emphasis on multiple stressors associated with poor parenting outcomes of adolescent parents, a better understanding of how coping processes may be mitigating the adverse effect of this stress may provide important insights about effective means of promoting adolescent mothers' positive parenting and preventing abuse and neglect of children. Although it has been suggested that teen mothers may benefit from interventions focused on development of cognitive, behavioral and social skills to better cope with their new role and reduce stress (McDonell, Limber, & Connon-Godbey, 2007), surprisingly little research has been done on coping in this specific population. A literature search did not reveal any recent (within the last decade) peer-reviewed studies on this

subject. Panzarine, Slater, & Sharps (1995) and Stern & Aracelli (1992) found an association between non-optimal functioning (depression) and reliance on passive, emotion-focused coping mechanisms. DeAnda, Darroch, Davidson, and Gilly (1992) found that pregnant adolescents viewed coping as minimally effective for dealing with stress, while Myors, Johnson, and Langdon (2001) reported that adolescent mothers' coping styles reflected a lack of understanding of the challenges related to motherhood. As such, our understanding of coping in this population is rather limited, and the few studies that are available offer a deficits perspective (underscore the "problems" of parenting during adolescence).

To conclude, in the context of teen parenthood, understanding which antecedents characterize the mothers who exhibit optimal parenting practices despite exposure to multiple risks may be beneficial in shaping social policies and informing parenting interventions and child maltreatment prevention efforts. Understanding how individuals cope with stress could explain pathways to their resilient functioning; however, little is known about coping in adolescent mothers. The current study addresses this gap in the literature by offering an in-depth look at coping in this population and investigating whether it plays a protective role by weakening the negative impact of risk factors on the quality of their parenting.

## Chapter 2: Review of the Literature

### Risk Factors Associated with Parenting Practices of Adolescent Mothers

Implicit in the definition of resilience is exposure to demonstrable risk factors, i.e., characteristics and current or past experiences that, if present, increase the probability of a particular undesirable outcome (Luthar, 2003; Masten, 2001). It therefore makes sense to review the major risk factors that have been associated with teen parenthood, to set the stage for an exploration of the protective potential of coping in this population.

The association between early parenthood and poor parenting is likely a function of multiple interrelated individual and ecological risks factors, which often are difficult to disentangle (Chen et al., 2007; Savio Beers & Hollo, 2009). Studies of correlates of low parenting quality across all groups of parents frequently are concerned with two large groups of risk factors: parents' psychological resources and economic stress, and the reciprocal associations between them (Lugo-Gil & Tamis-LeMonda, 2008). In adolescent samples in particular, economic strain on the one hand and psychological risk factors such as cognitive immaturity, maternal depression and parenting stress on the other hand, have been found to contribute to less effective parenting practices, decreased parental warmth and increased child abuse potential (Berlin, Brady-Smith, & Brooks-Gunn, 2002; Buchholz & Korn-Bursztyn, 1993; de Paúl & Domenech, 2000; Tamis-Lamonda, Shannon, & Spellman, 2002; Osofsky, Hann, & Peebles, 1993; Whitman, Borkowski, Keogh, & Weed, 2001). These risk factors are reviewed in more detail below.

**Economic strain.** In the USA, poverty is correlated with adolescent pregnancy (Lee, 2009). A disproportionate number of teen parents are under-educated, under-employed, depend on government funds, and live in impoverished neighborhoods (Berlin, Brady-Smith, & Brooks-

Gunn, 2002; Moore & Brooks-Gunn, 2002; Osofsky, Hann, & Peebles, 1993; Sidebotham & Golding, 2001). Economic strain also is closely related to social isolation, low family cohesion, and lack of support from the father of the child, all of which are believed to deplete parenting resources of young mothers. Adolescent mothers are often unmarried, and therefore receive less financial support than older mothers (Whitman, Borkowski, Keogh, & Weed, 2001).

Frequently, economic hardships beset these teens even before they had children (Mollborn & Morningstar, 2009). Pregnant adolescents often come from impoverished backgrounds characterized by low parental educational achievement, residence with a single parent, poor relationships in the family of origin and history of harsh parenting in childhood (Meade, Kershaw, & Ickovics, 2008; Savio Beers & Holo, 2009).

Poverty is related to less warmth and responsiveness and more withdrawal and harshness in mother-child interactions, and is a major risk factor for harsh parenting practices and child abuse (Burchinal et al., 2008; Sidebotham & Heron, 2006; Wulczyn, 2009). Financial hardships impair parental ability to mobilize resources and attend to children's needs and disrupt the important proximal processes between parent and child, leading to parental insensitivity and a lower motivation to actively engage with their children (McLoyd, 1990, 1998; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). Additionally, limited ability to respond sensitively and consistently to children's needs is often attributed to the increased emotional distress and parenting stress that accompany poverty (Raikes & Thompson, 2005).

**Childbearing age.** Studies linking teenage parenthood with non-optimal quality of caregiving have been criticized for confounding age with such comorbid conditions of early parenting as economic hardship, low educational attainment, ethnic or racial factors, social isolation, and single parenthood (Lee, 2009; Savio Beers & Holo, 2009). However, even when

the effects of these factors are accounted for, childbearing age continues to predict adverse outcomes of the children (Chen et al., 2007) and poor parenting behaviors of the mothers, including child abuse (Bornstein, Putnick, Suwalsky, & Gini, 2006; Connelly & Straus, 1992). Berlin, Brady-Smith, and Brooks-Gunn (2002) found that age predicted lower supportiveness, and higher detachment, intrusiveness, and negativity/hostility in teenage mothers above and beyond race/ ethnicity, education, family type, family income, and child sex and age. The authors argued that, when separated from socio-demographic variables, the effect of age likely pointed to the mother's cognitive and emotional maturity. Bornstein, Putnick, Suwalsky, and Gini (2006) observed a nonlinear relation of maternal age and parenting behaviors, where greater age had beneficial effect on parenting from adolescence through the mid 20s, and no effect in older mothers. In particular, the benefits of age concerned such aspects of maternal emotional availability (EA) as sensitivity and structuring. The authors commented that these results were consistent with the current developmental theories that suggest that cognitive abilities, emotional maturity, ego strength, identity, and aspects of personality are still developing in adolescence and early adulthood, which impacts the young mothers' availability to the child.

Developmentally, adolescent parenthood is an "off-time" event, requiring adolescents to balance motherhood with normative developmental tasks, such as individuation and autonomy-seeking, completion of school, and focus on peer and intimate relationships (DeVito, 2007; Hess, Papas, & Black, 2002; Noria, Weed, & Keogh, 2007; Moore & Brooks-Gunn, 2002; Secco, Atech, Woodgate, & Moffatt, 2002). These two tasks may be in direct contradiction with each other, which would explain the link between young parenthood and poor parenting outcomes. Moreover, studies have shown that for teen mothers, functioning well as a parent could come at



“a cost” to personal development and psychological functioning (Easterbrooks, Chaudhuri, & Gestsdottir, 2005; Easterbrooks, Chaudhuri, Bartlett, & Copeman, 2011).

Age of childbearing is a risk factor for poor parenting practices even when one looks within the teen population, without comparing them to older parents. It has been argued that late adolescents may be less likely to experience parenting stress and other difficulties than early adolescents, due to marked differences in cognitive and psychosocial maturity (Chang & Fine, 2007; DeVito, 2007). This hypothesis has been supported by the findings that the very young mothers (under 18 years of age at childbirth) are at particularly high risk for maltreating their children (Brown, Cohen, Johnson, & Salzinger, 1998; Stier, Leventhal, Berg, Johnson, & Mezger, 1993; Zuravin & DiBlasio, 1992).

**Maternal depression.** A large body of research on risks associated with non-optimal parenting has focused on maternal depression, which is known to diminish the mothers' nurturance and sensitive-responsiveness and to increase negative affect, hostility, rejection and negative perceptions of child behavior, thus lessening their ability to create secure mother-child attachment relationships (LeCuyer-Maus, 2003; NICHD Early Child Care Research Network, 1999; see Martins & Gaffan, 2000, for a meta-analysis).

Depression has been identified as an area of special concern among adolescent mothers (Jacobs, Easterbrooks, Brady, & Mistry, 2005). It is estimated to affect a large proportion of this population (reported rates ranging from 30% to 59%) and can persist for many years (Savio Bers & Hollo, 2009). Compared to older parents, adolescent mothers experience higher levels of depression (Mollborn & Morningstar, 2009) which puts them at risk for less optimal parenting outcomes (Jaffee, Caspi., Moffitt, Belsky, & Silva, 2001; Richards, Papworth, Corbett, & Good, 2007), including lower EA (Easterbrooks, Chaudhuri, & Gestsdottir, 2005). Highlighted

emotional distress of adolescent mothers has also been implicated as a significant predictor of greater abuse risk (Budd, Heilman, & Kane, 2000; Zelenko, Huffman, Lock, Kennedy, & Steiner, 2001). In a large sample of adolescent mothers, higher depression was linked to chronically high or increasingly high levels of parenting stress over time (Chang & Fine, 2007). Experiencing high levels of parenting stress and depression has been linked with less sensitive and responsive interactions of teen mothers with their infants (e.g., Osofsky, Hann, & Peebles, 1993).

The mechanisms by which depression influences the quality of parenting are multifold. Maternal depression may have a detrimental impact on parenting beliefs, behaviors, and mothers' relationships with their children (Field, 2009; Ammerman, Putnam, Bosse, Teeters, & Ginkel, 2010; Field, Diego, & Hernandez-Reif, 2009). For example, depressed mothers show decreased ability to detect their children's emotions accurately and respond effectively. This may be manifested in limited social initiation and positive affective exchanges, and more extensive mother-child conflict than in dyads where mothers are not depressed (Broth, Goodman, Hall, & Raynor, 2004; Caughy, Huang, & Lima, 2009; Dix, Cheng, & Day, 2008; Ammerman, Putnam, Bosse, Teeters, & Ginkel, 2010). Such dissonant relationships can be associated with particular thoughts and feelings depressive mothers have towards children and of themselves. Depressed mothers often have unrealistic expectations and hostile feelings towards their children, and negative impressions of their children's growth and behavior (Weissman et al., 2004; Cornish, McMahon, & Ungerer, 2006; Forman et al., 2007). Depressed mothers are also observed to lack interest in child care and have increased bonding difficulty, fear of hurting their children, low self-competence and self-esteem, and increased thoughts of suicide (Paris, Bolton, & Weinberg, 2009; Silver, Heneghan, Bauman, & Stein, 2005; Choi, Yamashita, Wada,

Narumoto, Nanri, Fujimori, 2010). It is not surprising, then, that mothers with such thought processes often exhibit behaviors consistent with poor quality of relationships with their children, such as disengagement, low warmth and responsiveness, a decreased ability to soothe their children in distress, increased corporal punishment and child abuse potential (Downey & Coyne, 1990; Zuckerman, Bauchner, Parker, & Cabral, 1990; Murray, Fiori-Cowley, Hooper, & Cooper 1996; Weissman et al., 2004; Ammerman, Putnam, Bosse, Teeters, & Ginkel, 2010; Field, 2010; Chung, McCollum, Elo, Lee, & Culhane, 2010; Choi, Yamashita, Wada, Narumoto, Nanri, Fujimori, 2010; Conroy, Marks, Schacht, Davies, & Moran, 2010). A link between maternal depressive symptoms and non-optimal emotional availability within the mother-child dyad has also been well documented (Lok & McMahon, 2006; Van Doesum, Hosman, Riksen-Walraven, & Hoefnagels, 2007).

The data on depression in mothers provide a consistent message of risk to children's positive development (Hammen, Burge, & Stansbury, 1990; Bureau, Easterbrooks, & Lyons-Ruth, 2009; Bagner, Pettit, Lewinsohn, & Seeley, 2010.) Children of depressed mothers often have a harder time regulating their emotions compared to children with nondepressed mothers (Garber, Braafladt & Weiss, 1995; Lutoma et al., 2001; Civic & Holt., 2000; Bagner, Pettit, Lewinsohn, & Seeley, 2010). Similarly, studies have documented that children with depressed mothers often show depressed mood, e.g., infants of depressed mothers show less response to voices and faces, high distress, physical withdrawal, demands of attention through negative behaviors, and oppositional behaviors (e.g., Field, Diego, & Hernandez-Reif, 2009). By the age of two years, children of depressed mothers exhibit more problematic externalizing behaviors and less pretend play (Creasey & Jarvis, 1994; Civic & Holt., 2000; Kim-Cohen, Moffit, Taylor, Pawlby, & Caspi, 2005; Foster, Garber, & Durlak, 2008). The impact of maternal depression

may perpetuate children's behavioral problems well into their early school years (Fihrer, McMahon, & Taylor, 2009). Further, animal models show that maternal stress has a profound effect on offspring as early as in utero: prenatally stressed monkeys showed more disturbance behaviors, reduced locomotion and exploration, and altered reactivity to stress in response to stressful conditions (Schneider, Moore, Kraemer, Roberts, & DeJesus, 2002)

**Parenting stress.** Parenting stress has been identified as a marker variable for parenting difficulties (Budd, Holdsworth, & Hogan Bruen, 2006; Chang & Fine, 2007; Crnic & Low, 2002; Deater-Deckard, 1998). Parenting can be stressful for all parents, however, certain parents experience higher levels of parenting stress due to increased caregiving demands, e.g., families with children with a disability or an illness (Gerstein, Crnic, Blacher, & Baker, 2009; Pottie & Ingram, 2008). Adolescent mothers have also been described to experience elevated levels of parenting stress in comparison to normative data gathered on adult mothers (Larson, 2004; Passino et al., 1993). Among the correlates of parenting stress in young mothers are their social, behavioral and emotional adjustment, psychological resources such as self-efficacy and social support, socioeconomic status, educational status, and children's temperaments (Budd, Holdsworth, & Hogan Bruen, 2006; Chang, Fine, Ispa, Thornburg, Sharp, & Wolfenstein, 2004; Chang & Fine, 2007).

Parenting stress has been linked to negative outcomes in both the child (e.g., insecure attachment, lower language skills, and adverse cognitive and behavior outcomes; Crnic, Gaze, & Hoffman, 2005; Noel, Peterson, & Jesso, 2008) and the parent (e.g., poor well-being, marital quality, lower responsiveness and affection towards children, use of power-assertive parenting techniques and increased child abuse potential; Crouch & Behl, 2001; Guajardo, Snyder, &

Peterson, 2009; Haskett, Smith Scott, Grant, Sabourin Ward, & Robinson, 2003; Larson, 2004; McPherson, Lewis, Lynn, Haskett, & Behrend, 2009; Sepa, Frodi, & Ludvigsson, 2004).

Abidin's (1992) influential theory posits that the relationship between parenting stress and child outcomes is mediated by parenting behaviors, i.e., that parenting stress influences parenting behavior, which in turn, influences children's adjustment. A number of studies have documented the negative impact of parenting stress on parenting behaviors, including decreased nurturance and increased use of physical discipline (Anthony et al. 2005; Deater-Deckard & Scarr 1996; MacKenzie, Brooks-Gunn, & Waldfogel, 2011; Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000; Reitman, Currier, Hupp, Rhode, Murphy, & O'Callaghan, 2001)

It has also been suggested that parenting stress is the pathway through which economic hardships impact parenting behaviors: parents' exposure to economic hardship makes them vulnerable to experiencing more parenting stress, which undermines their ability to choose appropriate disciplining strategies (Pinderhughes, Dodge, Bates, Pettit, & Zelli, 2000). It is important to also keep in mind that higher parenting stress is not an entirely environmental variable but rather a phenomenon that is likely substantially influenced by child characteristics (Noel, Peterson, & Jesso, 2008).

**Cumulative risk.** This portrait of adolescent parenthood is consistent with the models of cumulative risk models, which recognize that such indices of risk as poverty, single parenthood, large households, low parental education, unemployment, stress and depression tend to cluster in the same individuals and are difficult to disentangle conceptually and empirically (Burchinal et al., 2008). Adolescent mothers are often exposed to multiple layers of cumulative risks which may be depleting their capacity to provide optimal parenting to their children. As a result, as a

group, teen mothers have been found at risk for poorer parenting practices and higher rates of child maltreatment compared to older parents.

At the same time, a great degree of variability in their parenting practices of teen mothers has been documented, pointing to the existence of protective mechanisms that promote resilient parenting in this group. Understanding how adolescent mothers are coping with stress could explain pathways to their resilient functioning.

### **Coping: Conceptual Framework**

The most widely accepted today definition of coping was offered by Lazarus and Folkman in 1984 as part of their transactional cognitive-mediational model of stress and coping. Their now-classic definition describes coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p.141). While stress is an “unfavorable person-environment relationship”, coping is an attempt to “alter our circumstances, or how they are interpreted, to make them appear more favorable (Lazarus, 1993, p.8). By conceptualizing coping as a process that involves dynamic transactions between unique characteristics of the person and the environment (versus a static trait or style), the cognitive-mediational model affords an opportunity to gain a better understanding of the mechanisms responsible for the great variability of individual responses to adverse environmental stimuli (Folkman, 2011).

A crucial component of the cognitive-mediational model is the concept of cognitive appraisal. As a process that mediates between the objective situation and the individual’s goals and personal beliefs, cognitive appraisal plays a key role in determining the strength and the quality of the emotional reaction to stress and the type of coping used by the person (Lazarus, 1993; Lazarus & Folkman, 1984). The cognitive-mediational model distinguishes among several

inter-connected types of appraisals: primary and secondary appraisal and reappraisal. Primary appraisal is an evaluation of environmental cues with respect to their significance for well-being. A given situation cannot be objectively defined as stressful without the subjective appraisal of it as such by the individual. As such, stress is neither a stimulus (an agent that places demands on the organism) nor a response (the organism reacting with stress), but a rubric consisting of many variables and processes, such as antecedents, processes, and outcomes relevant to stress (Lazarus, 1996). Secondary appraisal is a process of choosing the coping options, i.e. deciding whether to do something about the stressor, accept it, seek more information before choosing a response or suppress the impulse to act. Since coping unfolds over time, appraisals are changed on the basis of new information and from the person's own reaction (reappraisal).

To illustrate the role of cognitive appraisal in determining what emotions are experienced during stress and what individuals do to cope, Lazarus (1993) used the example of anger. According to him, anger arises if in the process of primary appraisal individuals determine that the encounter is injurious to their self-esteem and is afflicted by something or someone presumed in control (in contrast, self-accountability elicits guilt and shame). During secondary appraisal, individuals select a response to the encounter that corresponds to (a) perceived availability of coping options (e.g., direct action if situation is viewed as changeable or cognitive change if the situation deemed as unchangeable) and (b) their goals (e.g., anger reduction if the goal is to preserve the relationship or reprisal if the goal is to mend self-esteem). Thus, assignment of responsibility (i.e., whether harm is attributed to the self or another), individual's goals, beliefs about personal control and availability of options are important dimensions of cognitive appraisal.

According to Lazarus and Folkman (1984), the main functions of coping are to manage the situation causing the distress (problem-focused coping) and to regulate the emotional response to the problem (emotion-focused coping). Problem-focused coping is focused primarily on actively changing the external environment, while emotion-focused coping is directed at lessening emotional distress, but does not change the objective situation (Folkman, & Lazarus, 1980, Lazarus, 1993). The problem-focused vs. emotion-focused distinction became by far the most influential and commonly used approach to categorizing ways of coping (Coyne & Racioppo, 2000). However this dichotomy also came under a great deal of criticism for promoting a simplistic view of coping (Lazarus, 2000; Skinner, Edge, Altman, and Sherwood, 2003) and confounding emotion-focused coping with emotional maladjustment (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Folkman, 2011; Folkman & Moskowitz, 2004; Stanton, Parsa, & Austenfeld, 2002; Stanton, 2011). While these criticisms deserve serious attention, it should be noted that conceptually the distinction between problem-focused vs. emotion-focused coping aligns with the literatures on emotion and emotion regulation. In particular, researchers of emotion regulation distinguish between antecedent-focused (AF) regulation, which proactively alters the emotional response by shaping its external or internal antecedents, and response-focused (RF) regulation, which shapes the responses directly after the emotions have been generated and, as a result, requires continuous effort to keep the emotional response under control (Gross & Thompson, 2007; Mauss, Bunge, & Gross, 2008; Urry, 2009). There is an obvious overlap between problem-focused coping and AF emotion regulation on the one hand, and emotion-focused coping and RF emotion regulation on the other hand.



There are also conceptual similarities between the problem vs. emotion-focused coping distinction and the approach-avoidance dichotomy, which is central to theories of emotion. The motivational distinction between approaching a desired end-state and avoiding an undesired end-state lies at the core of a rich and influential tradition in philosophy and psychology that views these constructs as fundamental and basic organizers of behavior (Elliot, 2008; Rutherford & Lindell, 2011). The approach-avoidance dichotomy provides a foundation for several major theoretical perspectives, including the Behavioral Activation and Inhibition Systems model (Gray, 1982; Gray & McNaughton, 2000) and the notion of approach and avoidance as lateralized cerebral functions (Davidson, Ekman, Saron, Senulis, & Friesen, 1990, Davidson, 1998, 2004). These perspectives suggest that approach motivation is linked to greater engagement with the environment and positive emotions, while avoidance behaviors are aimed at reducing negative affect and aversive stimuli. Conceptually, problem-focused coping, which is focused on actively changing the external environment, resembles approach motivation and emotion-focused coping, which is focused on reducing the negative emotion that accompanies stress, is similar to avoidance.

Similarities between the theory of coping and conceptual and empirical work on emotion generation and regulation are not surprising, given these constructs have shared roots (Eisenberg, Valiente, & Sulik, 2009). In fact, while attempts have been made to distinguish coping from emotion regulation (e.g., Gross & Thompson, 2007), the conceptual distinctions are rather unclear (Zalewski, Lengua, Wilson, Trancik, & Bazinet, 2011). Furthermore, although conceptually coping can not be separated from stress, few studies have explored coping in the context of physiological responses to stress (Gunlicks-Stoessel & Powers, 2009). As such,

despite sharing common roots, bodies of research on coping, stress reactivity and emotion regulation have remained largely separate.

Recent conceptual work by a group of leading coping researchers has put forth a new definition of coping as regulation under stress and called for an integration of the literatures on coping and self-regulation (Compas, 2009; Skinner & Zimmer-Gembeck, 2009). Integration of these literatures could open up new conceptual and methodological approaches for the coping research and lead to an enhanced understanding of the complex nature of the coping process and its role in shaping individual adaptational trajectories.

### **Measurement of Coping**

The potential of the cognitive-mediational model of coping to provide an understanding of the processes through which stressful life events influence adaptational outcomes has made the study of coping arguably the most widely researched area of psychology, in with close to 40 thousand articles published over the past 50 years (Aldwin, 2007; Frydenberg, 2008). The assumption that coping moderates the influence of stress on adaptation has guided the development of many interventions that aimed to improve adaptational outcomes by enhancing coping. Although the coping intervention literature is too vast to review here, some recent applications of the construct of coping to psychotherapeutic and behavioral preventive interventions include programs for aggressive youth at risk for substance abuse (Lochman, Wells, & Murray, 2007), children of depressed parents at risk for mental health problems (Compas et al., 2010) and low-income couples at risk for non-optimal parenting and relationship conflict (Wadsworth, Santiago, Einhorn, Moran, Rienks, & Markman, 2011). What unites these programs is the idea that coping is important not only because it favorably modifies the relation between risk and outcomes, but also because it can be taught through interventions.

Unfortunately what also unites these programs, along with a whole host of other programs and studies of coping, is a lack of unity in definitions of the term and inconsistent ways in which it is measured, which forbids comparison across studies and replication of the interventions.

Reviews of this vast body of literature on coping have concluded that despite decades of active research our ability to explain individual differences in adaptation to stress and adversity remains modest (for review see Compas, 2009, Compas et al., 2001; Coyne & Racioppo, 2000; Folkman & Moskowitz, 2004; Litt, Tennen, & Affleck, 2011; Skinner, Edge, Altman, and Sherwood, 2003). The challenges associated with the development of specific research procedures to measure the complex concept of coping are a primary reason for such modest results.

Summarizing the stress and coping literature, Aldwin (2007) wrote: “While nearly everyone agrees that coping is a (or even the) crucial variable in understanding the effects of stress on health, nearly everyone disagrees on how it should be measured” (p. 127). The plurality of views on how to measure the core constructs has led to a lack of a cohesive picture of the structure of coping (Compas et al., 2001) and generation of a large pool of measures, which complicates comparison across studies (Coyne & Racioppo, 2000).

Most studies to-date have operationalized coping as strategies (also called coping efforts or ways of coping). The vast majority of coping measures are checklists that ask individuals to indicate which thoughts or actions they engaged in during stress. Reviewers have criticized the coping field’s over-reliance on checklists as they are ill-equipped to capture the dynamic nature of this construct (Aldwin 2007; Compas, 2009; Coyne & Raccioppo, 2000). The major limitations of coping checklists are reviewed below.

Firstly, the usefulness of representing dynamic coping processes by static values for specific coping strategies has been questioned by critics (e.g., Compas et al., 2001; Schwarzer & Schwarzer, 1996). Strategy-type approach does not allow the researchers to clarify the unique personal and contextual aspects of the coping process. Consider, for example, the multiple reasons why somebody may ask a friend to help him deal with a problem. It could be because the friend is an expert in the area of concern, is a good listener, has good problem-solving skills, is good at distracting the individual from the problem, or is a drinking buddy. Arguably, such diverse motivations to seek support are prompted by different appraisals and could lead to different, perhaps opposite, outcomes. Similarly, depending on his or her goals, the coper could interpret the same checklist items in a variety of (sometimes opposing) ways, e.g., “I thought about solutions to the problem” could be understood as decision-making, emotional processing or even rumination; “I confronted the individual who caused the problem” could be one person’s problem-solving and another person’s emotional expression; “I tried to see the situation in a different, more positive light” is supposed to measure reappraisal, but could be endorsed by someone whose goal was to suppress the negative emotion. The inability to clarify the goals of the individual during the coping process (or the meaning of the items as the researcher who developed the scale sees them) does not allow checklists to draw a complete picture of coping.

Secondly, the complex person-context interactions involved in coping imply a vast number of unique coping scenarios in which individuals use multiple strategies as the encounter unfolds (Lazarus, 1993, 1996). Simply summing together the strategies does not account for the fact that in the process of coping, strategies change from one stage of a complex stressful encounter to another (Lazarus, 1993). Further, utilization of a specific coping strategy makes usage of similar strategies unnecessary, which does not lend itself well to the basic principle of

instrument reliability: that items that form the same latent variable must be consistently endorsed by the respondent (Compas et al., 2001; Schwarzer & Schwarzer, 1996).

Next, because coping strategies combine multiple dimensions and may have multiple functions, they are exceptionally hard to classify into conceptually clear, mutually exclusive, comprehensive and functionally distinct higher-order categories of coping (Skinner, Edge, Altman, and Sherwood, 2003). Staying with the example of seeking support of a friend, opinions differ as to whether it belongs conceptually to strategies that describe orientation towards stress (seeking expert opinion) or away from it (distracting self); regulation of emotions (venting to the friend) or problem-solving (accessing tools), etc. It is not surprising, then, that in a review of over 100 category systems, Skinner and colleagues (2003) identified more than 400 different category labels and not a single system that included identical sets of categories.

Given these limitations of checklists, critics have concluded that open-ended interview and observation measures are better-suited to provide a nuanced understanding of the process of coping (e.g., Compas et al., 2001; Kliever, Parrish, Taylor, Jackson, Walker, & Shivy, 2006; Litt, Tennen, & Affleck, 2011; Miller, Kliever, & Partch, 2010). The advantage of studying coping with qualitative measures is that, in addition to offering a more comprehensive description of the perspectives of the individuals and process of coping, these measures also allow the researcher to deter response biases and evaluate the representational processes, state of mind and internal belief systems of the individuals, which may be too intangible to detect with self-report checklists. Such biases as social desirability or self-deception may have profound effect on which and how many coping strategies are reported (Compas et al., 2001). Further, autobiographic memories are subject to bias by the person's context and mental state at the time of recall, his or her beliefs and general knowledge, and the influence of salient experiences of the

past (Shiffman, Stone, & Hufford, 2008). Qualitative measures allow researchers to account for such biases and cognitive structures. Further, the self-directed attention involved in sharing one's autobiographical memories with others may help to transform implicit, unconscious thoughts, memories, perceptions and emotions into explicit, conscious processes (Brody & Park, 2004). These features of interview and observational methods are of critical importance for the study of coping, given the role of appraisals, motivational structures and belief-systems in shaping the process of coping.

Although a surprisingly small number of coping studies have used qualitative methods to assess coping, several important interview-based measures are noteworthy. Teasdale et al. (2002) developed a qualitative system entitled the Measure of Awareness and Coping in Autobiographical Memory (MACAM) to code autobiographical memories for participants' relationships to their own thoughts and feelings. Stone and Neale (1984), who repeatedly failed to develop a questionnaire of coping with acceptable psychometric properties, used an open-ended response format instead. The resulting measure, called the Daily Coping Inventory, asked participants to reflect on a specific stressful encounter and briefly describe their coping behaviors as they applied to the coping categories the authors provided. These open-ended instruments can serve as a model for developing qualitative measures of coping.

In addition to the issues of instrument design, the study of coping has also been criticized for the inability to capture its complex and continuously changing nature. The main assumption behind Lazarus and Folkman's (1984) definition of coping as a process unfolding in time is that, as a sequence of processes, coping is multimodal. However, the sequence *primary appraisal-secondary appraisal-response-reappraisal* proposed by Lazarus and Folkman's (1984) has generally not been incorporated into the measurement of coping. Instead, only one component of

this process, *response* (i.e., coping action or strategy), has been used in operationalization of coping, which has led to a proliferation of studies that have misleadingly represented solitary coping strategies as the entire process of coping. Challenges associated with not knowing which appraisals informed the coping response were illustrated above.

In sum, coping is a dynamic transaction that involves complex person-context interactions and is shaped by the objective level of threat and the subjective appraisal of the situation, psychological and material resources of the individual, and other personal and environmental factors that enhance or thwart coping efforts (Lazarus & Folkman, 1984). Such a complex concept requires a multidimensional approach to measurement. The traditional approach of representing coping as coping strategies grouped into larger categories has not fulfilled the promise to explain individual differences in adaptation to stress and adversity. From the process-oriented perspective, representing dynamic coping processes by static values for specific coping strategies does not allow an understanding of the unique personal and contextual aspects of the coping process that could clarify the mechanisms through which coping buffers the effects of stress. Thus, the field might be better served if other properties and dimensions of coping were paid attention to by the researchers. Further, as follows from the literature reviewed here, interview and observation methods offer important advantages in facilitating a deeper understanding of the appraisals that shape how individuals respond to their environments and act during the coping process.

### **Proposed Structure of Coping**

The literature reviewed above uncovered several areas for improvement in the measurement of coping. In particular, it was suggested that, as a multidimensional construct, coping is more than simply a strategy employed during stress. In this section, I lay out a

conceptual framework for a more nuanced structure of coping. Given that the recent work on coping has emphasized the utility of exploring the connections between coping and regulation, including emotion regulation (Skinner & Zimmer-Gembeck, 2009), the proposed multidimensional model of coping integrates Lazarus's original writing on coping with the current literature on the neurobiology of stress regulation.

The cognitive-mediational framework reviewed above highlights the importance of understanding personal conceptual models of stress and coping (i.e., stress appraisals that trigger coping, perceived availability of coping options, individual goals, beliefs about personal control, assignment of responsibility and attributions about self and others in the coping process), which are important mediators of coping thoughts and behaviors. In particular, Lazarus and Folkman (1984) postulated that the coping process can be represented as a sequence of processes, including primary appraisal, secondary appraisal, coping action, reappraisal. These processes unfold concurrently throughout the stressful encounter and are mutually influential. In essence, one could think of coping as a continuous feedback loop, in which the coping responses are feeding back to (and modifying) the situation until it is no longer stressful.

Based on these ideas, I propose a model of coping that includes the following dimensions:

- (a) *Self-Other Representations*, defined as cognitive beliefs that impact primary appraisals, i.e., the evaluation of environmental cues with respect to their significance for well-being;
- (b) *Beliefs About Control*, defined as cognitive beliefs that impact secondary appraisals, i.e., the process of choosing the coping options;



- (c) *Coping Scripts*, defined as the capacity to engage in reappraisal, i.e., the processes of self-reflection about coping.

A diagrammatic representation of this model is shown in Figure 1.

Lazarus and Folkman's (1984) theoretical description of the coping process as a sequence of *primary appraisal* to *secondary appraisal* to *reappraisal* is supported by the current neurobiological models of emotion generation and regulation, which describe the reaction to emotive stimuli as a coordinated system of simultaneously activated multiple pathways in which affective reactions and cognitive processes are bound in a continuous feed-back loop (Houshyar & Kaufman, 2005). Akin to stress in the cognitive-mediational framework, emotions arise when individuals attend to situations relevant to their current goals (Gross & Thompson, 2007). Neurally, emotion generation is a complex transaction involving the environment, its rapid assessment by the amygdala, and consequent physiological arousal (Urry, van Reekum, Johnstone, Kalin, Thurow, Schaefer, et al., 2006). Emotion regulation is also a multi-systemic response, performed bidirectionally by the amygdala and regions in the prefrontal cortex, which support decision-making, planning, impulse inhibition and other higher order cognitive processes that subservise the executive functions (Arnsten & Li, 2005; Fisher, Meltzer, Price, Coleman, Ziolko, Becker, et al, 2009). Similarly, primary and secondary appraisal and reappraisal are complex cognitive processes, whose purpose is to down-regulate emotional arousal caused by the stressor.

The knowledge about the interplay between the limbic system and the prefrontal cortex of the brain has led to an enhanced understanding of the factors that contribute to individual differences in adaptation to stress. For instance, recent neuropsychological studies have suggested that, in some individuals, the brain may not sufficiently involve the pre-frontal areas

that down-regulate the activity of the amygdala, which prolongs physiological arousal, perpetuates the emotional cycle and leaves individuals in the state of unresolved distress (Hooley, Gruber, Parker, Guillaumot, Rogowska, & Yurgelun-Todd, 2009; Matthews, Simmons, Strigo, Gianaros, Yang, & Paulus, 2009).

This neurobiological evidence offers an interesting view on the role of the emotional areas of the brain in coping processes. Although it has not been tested by neuroscience, one could speculate that similar variations in the involvement of executive control processes would be evident in individuals' own descriptions of their coping. In particular, it wouldn't be unreasonable to suggest that coping narratives of individuals who have diminished inhibitory control over negative emotions would contain fewer references to cognitive processing of the stressful situation and a bigger focus on the emotional content of the situation. In other words, it is possible that an analysis of narratives about coping might reveal similar differences in the regulatory capacities of the brain to what the brain imaging studies have shown. For instance, Campbell and Pennebaker (2003) noted that a higher number of positive emotion words and causal or insightful words and the use of a moderate number of negative emotion words in written narratives about stressful experiences are linked to better physical health.

Based on the integration of the literatures on coping, emotion regulation and neurobiology of emotion, I propose a hypothesis that the degree to which individuals engage in *reflective coping* (i.e., the degree to which their coping narratives focus on cognitions that decrease the negative emotional meaning of the situation) might explain differences in their adaptation to stress.

The particular way in which *reflective coping* is manifested is through its three dimensions:

- (a) *Self-Other Representations*: individuals who engage in *reflective coping* will be more accepting of others when they evaluate the environmental cues with respect to their significance for well-being; low *reflective coping* will be manifested the defensive beliefs that stress is controllable by others and threatening to one's own self-esteem;
- (b) *Beliefs About Control*: individuals who engage in *reflective coping* will have higher approach motivation (greater engagement with the environment) and positive beliefs about personal control and the availability of external and internal resources for coping; low *reflective coping* will be manifested higher avoidance motivation and beliefs about lack of control and unavailability of coping options;
- (c) *Coping Scripts*: individuals who engage in *reflective coping* will present a reflective, thoughtful narrative about their coping which emphasizes thought processes (reflective scripts); low *reflective coping* will be manifested by a reactive, non-reflective narrative that emphasizes affective states (reactive scripts).

### **Coping with Parenting Stress**

The transactional definition of coping implies that, as a dynamic process, coping is situational and should be studied in the context of circumscribed proximal stressors (e.g., Lazarus, 2000; Somerfield & McCrae, 2000; Folkman & Moskowitz, 2004). One approach to contextualizing coping is investigating how individuals cope with specific types of stress, for instance, with parenting stress, which is the focus of this dissertation study.

Most studies of coping to-date have applied the same set of generic coping questionnaires to diverse populations and settings (Coyne & Raccioppo, 2000), studies of coping with parenting stress being no exception (e.g., Kurtz & Derevensky, 1994; McKelvey, Fitzgerald, Schiffman, & von Eye, 2002; Pottie & Ingram, 2008). No studies to my knowledge have employed a measure of coping designed to be used specifically with parents. Arguably, the effects of parenting stress on individuals are not generalizable to other stressors, and it is likely that individuals cope differently in the parenting role than in other contexts, for example, at work, at the doctor's office, with peers, etc. A generic instrument may not be sensitive to the specific types of stressors thus failing to address the full range of potential responses, or may have items that are inapplicable to the situation, which may bias the results (Compas et al., 2001; Schwarzer & Schwarzer, 1996). Therefore, having a measure of coping with parenting stress is important to furthering our understanding of the processes of adaptation in the context of parenting and the correlates of parents' and children's functioning.

From this perspective, in developing a measure of coping for use with a specific population, it is important to pay careful attention to the unique processes and characteristics of this population that make up the context in which coping occurs. Specifically, to meaningfully assess coping in parents, one must seek to obtain an understanding of the factors that impact parents' interpretation of an objective situation as stressful and shape their coping responses (i.e., are relevant to their primary and secondary appraisals and reappraisals).

Parental cognitions have long been a subject of active research, due to their role in affecting the quality of caregiving relationships and the caregivers' ability to provide optimal experiences for the children (e.g., Ainsworth, Blehar, Waters, & Wall, 1978; Dix, 1991; George, Kaplan, & Main, 1985). Several constructs pertaining to parents' cognitive representations of

themselves as parents, their children, and their relationship have been studied, including parental state of mind with regard to own attachment-related experiences in early childhood (Dozier, Stoval, Albus, & Bates, 2001; George, Kaplan, & Main, 1985), attributions toward the child (Bugental, Johnston, New, & Silverster, 1998), reflective functioning (Fonagy, Gergely, Jurist, & Target, 2002; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005) and others. These closely related constructs suggest that parents' cognitions act as the lens through which meaning is assigned to what happens within the parent-child relationship. Jointly these literatures have highlighted parents' capacity for reflective perspective-taking and empathy on the one hand and hostile, blame-oriented, and power-focused cognitions on the other as strong predictors of parenting practices and parent-child attachment relationships (e.g., Bugental, Johnston, New, & Silverster, 1998; Sharp & Fonagy, 2008). More specifically, a parent's capacity to reflect upon the child's internal mental experience and correctly interpret and empathize with his or her emotions is associated with positive mother-child relationships, child attachment and overall psychological adjustment (Fonagy, Gergely, Jurist, & Target, 2002; Sharp, Fonagy, & Goodyer, 2006; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). In contrast, parents' cognitive representations of children as "creatures with needs that must be satisfied", rather than mental objects, have been found to predict insecure attachment and reduced mentalizing ability in the children (Sharp, Fonagy, & Goodyer, 2006, p.198; Demers, Bernier, Tarabulsky, & Provost, 2010). The literatures on parental mentalizing and parents' attributions about the children have suggested that inability to reflect upon and accurately interpret the child's internal mental states characterize parents who believe that their children are intentionally acting to annoy or challenge them and view them as being in control over what happens within the parent-child relationship and responsible for the parent's stress (Bugental, Ellerson, Lin, Rainey, Kokotovic, & O'Hara,

2002; Sharp & Fonagy, 2008). The parents who rely on such distorted cognitive models tend to use aversive child management strategies to assert power in the relationship and are more likely to abuse their children (Caselles & Milner, 2000).

In sum, the literatures on parental cognitions provide important information about the population-specific factors that may impact stress appraisals and shape coping responses. The profiles of parental cognitive models described above (accepting and reflective vs. defensive and reactive) are also resonant with the main criteria that define reflective coping, and should be reflected in the measure designed to evaluate reflective coping with parenting stress.

### **Coping in Adolescents**

As a set of constantly changing adaptational processes involving dynamic transactions between the person and the environment, coping implies a strong developmental component (Skinner & Edge, 1998). Despite widespread agreement that development shapes how people cope with stress, little is known about the developmental trajectories of coping (Skinner & Zimmer-Gembeck, 2009).

Until the late 1980s, researchers focused almost exclusively on adult coping (Compas et al., 2001; Skinner & Zimmer-Gembeck, 2009). Over the past two decades researchers have begun investigating age differences in coping (e.g., Bird & Harris, 1990; Copeland & Hess, 1995; Frydenberg, 2008; Patterson & McCubbin, 1987; Seiffge-Krenke, 1995; Wolchik & Sandler, 1997), however, most studies reduced developmental aspects of coping to chronological age and relied on the research designs and measures developed for adults to examine the links between different strategies and a range of outcomes (Compas et al., 2001; Skinner & Zimmer-Gembeck, 2007, 2011). Only a few longitudinal studies of coping have been conducted (e.g.,

Losoya, Eisenberg, & Fabes, 1998) and have focused on identifying the sequence in which specific ways of coping/strategies emerge.

Recently, a new “developmentally-friendly” conceptualization of coping as “regulation under stress” has been proposed address the lack of an overarching developmental framework for the study of coping (Compas, 2009; Skinner & Zimmer-Gembeck, 2009, 2011). These authors postulate that coping and self-regulatory capacities emerge in parallel with other developmental achievements (e.g., language, cognition, socioemotional development), which means that developmental changes in coping must be understood in the context of developmental timetables and qualitative shifts in the child’s self-regulatory abilities (Skinner & Zimmer-Gembeck, 2007, 2009). Thus, coping is conceptualized as an overarching framework that focuses on how the emotional, behavioral, motivational, attentional, cognitive, and social regulatory subsystems work together when dealing with stress (Skinner & Zimmer-Gembeck, 2007).

From the perspective of coping as self-regulation under stress, adolescence is seen as a time of a major developmental shift in coping, due to the emergence of complex cognitive and behavioral self-regulatory skills such as strategizing, decision making, planning, and reflection (Skinner & Zimmer-Gembeck, 2007; 2011). This progression is consistent with the development of the prefrontal areas of the brain, which subserve these executive control functions. Maturation of the prefrontal cortex is a linear process in development from infancy to adulthood and comes after maturation of parietal and temporal areas responsible for spatial, sensory, auditory and language functions (Casey, Jones, & Hare, 2008). It has been documented that myelination in the prefrontal cortex is slow, continuing well into adolescence, and metabolic activity in the frontal regions lags behind all other cortical regions of the brain. A growing body of evidence suggests that the transition from greater limbic to prefrontal cortical control of emotion and

behavior, with an increase in the inhibitory connections between these two regions, occurs during adolescence (Whittle, Yap, Yücel, Fornito, Simmons, Barrett, et al., 2008).

As adolescents gain the cognitive and language skills necessary to entertain abstract categories and reflect on their own experiences, values and plans in life, analyze their own thoughts and think beyond the present, they become more capable of well-reasoned decisions. However, research characterizes this age group by heightened interpersonal stress levels and a maladaptive coping pattern (Frydenberg, 2008; Vashchenko, Lambidoni, & Brody, 2007). Summarizing the literature pertaining to coping in adolescence, Aldwin (2011) wrote that this age constitutes “a time in which maladaptive strategies such as rumination, substance abuse, risky sexual behavior, and social withdrawal develop” (p. 24). While adolescence is a period when cognitive capacities to engage in sophisticated forms of problem-focused coping begin to develop, it “is also a time for the development of maladaptive strategies” (p.24). These observations are again consistent with the view of coping evolving in parallel with other self-regulation capacities. It has been documented that, although adolescence is a period of refinement within the frontal lobe of the brain and fine-tuning of projections from these regions, the increase in white matter is a more gradual process continuing well into adulthood, which explains why adults are more skilled at impulse control than teens (Sowell, Thompson, Holmes, Jernigan, & Toga, 1999). In other words, adolescence is a transitional period characterized by an imbalance of limbic relative to prefrontal control compared to children, for whom these systems are both still developing, and compared to adults, for whom these systems are fully mature (Casey, Jones, & Hare, 2008; Steinberg, 2005). In light of this literature, it would not be unreasonable to expect to see a great variability in the capacity to engage in reflective coping among adolescents.



## The Current Study

This study contributes to a better understanding of the role of coping in promoting better adaptation to risk in adolescent mothers. It does so by validating a new measure developed to assess reflective coping and demonstrating the utility of this measure in a study of risk and resilient parenting.

The goals of the current study are two-fold:

- (1) To develop, refine and provide initial validation to a measure proposed to assess the three-dimensional structure of coping (depicted in Figure 1);
- (2) Using the measure of reflective coping, to test the conceptual model (see Figure 2) which postulates that coping moderates the relation between risk and non-optimal parenting behavior in a sample of adolescent mothers at risk for child maltreatment.

The study is embedded in a longitudinal randomized control trial evaluation of Healthy Families Massachusetts (HFM), a home visiting program for first-time parents ages 20 and under in Massachusetts. HFM is a statewide adaptation of the Healthy Families America program and is designed (1) to prevent child abuse and neglect by supporting positive, effective parenting; (2) to achieve optimal health, growth, and development in infancy and early childhood; (3) to encourage educational attainment, job, and life skills among parents; (4) to prevent repeat pregnancies during the teen years; and (5) to promote parental health and well-being of teen mothers in Massachusetts.

Home visiting is a commonly utilized mode of providing prevention and intervention services during infancy (Astuto & Allen, 2009; Diaz, Oshana, & Harding, 2004; Lyons-Ruth & Easterbrooks, 2006). Early childhood home visitation is often recommended as an effective

strategy for preventing child abuse and neglect (Centers for Disease Control and Prevention Task Force on Community Preventive Services, 2003). The empowerment logic of the home visiting model postulates that, by facilitating personal relationships between the home visitor and the client, the program will help the parents acquire a set of important skills to advocate for their education and career goals, learn how to care for their child, and develop a social support system (Jacobs, Easterbrooks, Brady, & Mistry, 2005; Olds, Kitzman, Cole & Robinson, 1997).

While evidence of its effectiveness in promoting parenting competencies and reducing harsh parenting is inconclusive (e.g., Donelan-McCall, Eckenrode, & Olds, 2009; Holton & Harding, 2007; Paulsell, Avellar, Sama Martin, & Del Grosso, 2010; Vasquez & Pitts, 2006), selected home visiting programs have been successful in enhancing parental knowledge, skills and behavior, reducing injuries to children, and having positive long-term effects on family functioning and children's development (Love, Kisker, Ross, Raikes, Constantine, Boller, et al., 2005; Olds, Kitzman, Cole, Robinson, Sidora, Luckey, et al., 2004; Eckenrode et al., 2010).

While HFM does not explicitly aim to enhance parents' coping, its goals and strengths-based services (i.e., promoting effective parenting, skill attainment, and parental well-being through goal-setting activities, provision of information about skill building, and empowerment through trusting relationship with the home visitors; Goldberg, Jacobs, Mistry, & Easterbrooks, 2011) reflect an orientation towards modeling better ways of managing personal and financial stressors. Given that the overarching conceptual framework at the basis of this study is that coping promotes better adaptation, an interesting research question arises as to whether the effects of the HFM program can be intensified by more reflective coping.

Therefore, the specific hypotheses of the study are as follows:

- (1) The sample data will support the proposed dimensional structure of reflective coping and acceptable degrees of factor reliability and construct validity will be demonstrated;
- (2) In this sample, financial and psychological risk factors (higher levels of economic strain, maternal depression and parenting stress and lower maternal age) will be inversely related to the quality of parental behavior (Emotional Availability, EA);
- (3) The negative effect of risk factors on EA will be substantially reduced by the moderating effect of coping;
- (4) If the program effect participation exists, it will be further intensified by reflective coping.

## Chapter 3: Method

### Sample and Participant Selection

The Massachusetts Healthy Families Evaluation (MHFE)<sup>1</sup> is a three-wave Randomized Controlled Trial (RCT) study, in which data are collected from participants at three different time points (T1-T3) over a two-year period. Data collection began February 2008 and is currently ongoing.

First-time parents who applied for the HFM services were randomly assigned either to the Home Visiting Services Group (HVS, the program group) or the Referrals and Information Only Group (RIO, the control group). Eligibility criteria included being female, 16 years or older, new to HFM, either English- or Spanish-speaking, and cognitively able to provide informed consent. All participants consented to release their state agency records and participate in a phone interview three times over two years. Participants were also offered to have additional, longer in-person interviews in their homes. From the 693 participants of the study, a total of 477 mothers agreed to participate in the in-person interviews (of them, 58% belonged to the program group and 42% to the control group).

This study uses data from the second wave of data collection and includes 160 participants (80 from the program group and 80 from the control group). Table 1 shows the demographic statistics for the sample. Inclusion criteria for this study were participation in the in-person interview and consenting to be audio and video-taped during the interview. Interviews that were conducted in Spanish were excluded to minimize translator bias and the effect of potential non-equivalence of data due to language differences. Due to the fact that EA coding was still ongoing at the time this study was designed, the first 160 participants for whom the EA

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data were available were selected. Sample size was determined using the Power and Precision V.4 Software for a model including 6 covariates (risk factors) with the smallest effect important to detect set at an increment of 15% and 14 variables in the set of interest (6 risk factors, program participation, coping, and two-way interactions with coping) which will account for an additional 15% of the variance. The total R-squared for the 20 variables in the model is .30. The power analysis focused on the increment for the set of interest over and above any prior variables (i.e. 13 variables yielding an increment of 0.15) and revealed that for the desired power of 0.95 at the alpha of .05, a sample size of at least 146 participants would be required.

### **Procedures**

At each wave of data collection participants first completed a 30 minute phone interview during which information about participant demographics (e.g., age, race/ethnicity, education, marital status), residential status, involvement of father of the child, sources of financial and social support, referrals to and utilization of assistance services, and their health care insurance and utilization. As part of this interview, several paper and pencil questionnaires were also administered, including a measure of depressive symptomatology (The Center for Epidemiological Studies-Depression scale, Radloff, 1977) and a measure of adequacy of economic resources (The Family Resource Scale, Dunst & Leet, 1987). Upon completing the phone interview, participants scheduled a 2-2.5 hour in-person data collection visit. Average number of days between the two interviews was 27 ( $SD = 30.9$ , range 0 to 272). Measures used during the in-person visits varied across time points. At T2, participants completed a semi-structured interview and a list of self-report paper and pencil measures, and participated in naturalistic observations of parent-child interactions during play and a teaching task. The measures relevant to this study are described in detail below.

## Measures

The current study drew from the T2 phone intake and T2 in-person interview datasets and included demographic data, maternal reports on standardized assessments, and ratings for the behavioral observations of mother-child interactions. Additionally, transcripts of the Reflective Coping Interviews were analyzed and ratings were merged into the dataset. Data sources are described below, by data analysis construct. Additionally, psychometric properties for the paper and pencil measures used in this study are shown in Appendix A.

**Parenting outcome.** Behavioral observations of mother-child interactions were used in assessing the quality of parenting. The Emotional Availability Scales (EA; Biringen, Robinson, & Emde, 1998; Biringen, 2000) were used to characterize interactions of mothers and children, filmed in their homes during 10 minutes of freeplay interactions. EA focuses on both caregiver and child contributions to the interaction and emphasizes emotional features of relationships. Mothers and children were filmed in their homes during freeplay and a teaching task, each lasting five minutes. The mothers were asked to play with their children as they wished during freeplay. During the teaching task, children were presented with a developmental task that was slightly advanced for their chronological age and meant to be challenging and mothers were asked to work with the child on solving it.

The videotapes were coded using the third edition of the Emotional Availability Scales (Biringen, Robinson, & Emde, 1998), which include Sensitivity, Non-hostility, Structuring and Non-Intrusiveness subscales. This study used the teaching task Sensitivity subscale, which measures maternal affect, timing, flexibility, acceptance, conflict negotiation, and the parent's awareness of their child's cues as well as appropriate responsiveness. Sensitivity is rated on a 9-point scale (higher scores reflect better parenting functioning). Recently, Biringen and

Easterbrooks (2012) suggested that from the perspective of using the EA scales to predict developmental psychopathology, converting the 9-point scale into a 4-category system may be useful in evaluating the risk posed to the child (optimal maternal sensitivity =7-9, non-risk=5.5-6.5, moderate risk=3.5-5, and highest risk=1-3).

The coding team consisted of three trained coders who were kept blind to pertinent information regarding the mother-child dyads (i.e. program participation and mother's age). Coders achieved inter-rater reliability during an initial training period using 20 to 30 videotaped observations from a previous evaluation study. Inter-rater reliability was assessed using average absolute agreement intraclass correlation coefficients (ICC) in a two-way random effects model (McGraw & Wong, 1996). The ICC for Sensitivity during the teaching task was .90. Following the training period, all three coders independently examined approximately 50% (n=125) of all videotaped interactions. In order to protect against observer drift, all three coders met on a regular basis to code independently and then discuss assigned codes. Disagreements beyond one-point were discussed until agreement was reached. For the post-training period, the ICC between all three coders for Sensitivity during the teaching task was .93, indicating excellent reliability.

**Financial Risk.** Exposure to financial risk was assessed using several measures: The Family Resource Scale (Dunst & Leet, 1987), receipt of public funds, and self-report of financial difficulties. These measures are described below.

***The Family Resource Scale (FRS).*** The FRS (Dunst & Leet, 1987) is a 5-point Likert-type scale of perceived adequacy of resources ranging from not at all adequate to almost always adequate, was administered during the phone interview. The measure (see Appendix B) consists of 30 items which measure the adequacy of economic resources (e.g., food, shelter, money to pay bills) intrafamily support, and personal resources (time for oneself, time to keep in shape). The

scores can range from 30 to 150; higher scores indicate more adequate family resources. The internal reliability of the FRS was reported to be .92 with concurrent validity ranging from .57 to .63 (Dunst & Leet, 1987). Good predictive and external validity and high internal consistency (Cronbach's Alpha= .83-.85) of the measure have been reported (Brannan, Manteuffel, Holden, & Heflinger, 2006; Van Horn, Bellis, & Snyder, 2001). The internal consistency of this measure in the current study was similarly high (Cronbach's Alpha= .86).

***Receipt of public funds.*** Data on current usage of various public assistance programs were collected during the phone interviews. The list of programs included welfare/TANF (Temporary Assistance for Needy Families), food stamps, WIC, child care voucher, teen living program/group home for teens/shelter, section 8 housing/public housing, housing voucher, or other public assistance programs. A summary variable of the total number of programs utilized was created, and could range from 0 (receiving no public support) to 8 (receiving all mentioned types of public support).

***Self-Report of Financial Difficulties.*** Participants were asked to rate the degree to which they had difficulties covering their expenses. Response options ranged from "No Difficulties" to "Major Difficulties". To obtain a measure of severe financial risk, the 4-point Likert scale was later dichotomized to distinguish participants who reported experiencing major difficulties from the rest of the participants.

***Psychological Risk.*** Cumulative psychological risk was assessed using several indicators, including maternal age at the time of participation in the research interview, maternal symptoms of depression at intake (during the phone interview), and parenting stress the time of the research interview. The measures used to assess these indicators are described below.



**Maternal age.** A continuous variable of the mother's age in years at the time of the T2 in-person data collection visit was used in the analyses.

**The Center for Epidemiological Studies-Depression (CES-D) scale** (Radloff, 1977). The CES-D is a 20 item self-report questionnaire designed to assess depressive symptoms in the general population (see Appendix B). The items are rated on a four-point Likert scale and assess symptoms during the past week. The CES-D has demonstrated strong psychometric properties in both clinical and epidemiological studies with diverse groups, including both adolescents and postpartum women (Radloff, 1991; Weinberg, Tronick, Beeghly, Olson, Kernan, & Riley, 2001). The reliability and validity of the CES-D has been well-established, with 100% sensitivity with a clinical diagnosis using the cut-off scores, and 88% specificity (Radloff, 1977; Radloff & Locke, 1986). Cronbach's alpha of this scale in this study was .89).

A score of 16 or above is considered to be "clinically significant" (Radloff, 1991). To obtain an indicator of the highest risk, a dichotomous variable was created to distinguish participants with clinically-significant level of depressive symptoms from the rest of the participants.

**The Parenting Stress Index, Short Form (PSI/SF).** PSI/SF is a 36-item self-report measure of parenting stress developed by Abidin (1995; see Appendix B). The PSI/SF yields scores for Parenting Distress, Difficult Child and Parent-Child Dysfunctional Interaction subscales. Parents indicate the degree to which they agree with statements using a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Examples of the statements include: "I feel trapped by my responsibilities as a parent", "My child rarely does things for me that make me feel good". Items are reverse-coded, which makes a higher score on the PSI/SF indicate higher stress. The PSI-SF has been shown to have adequate test-retest reliability (0.68-0.85),

very good to excellent internal consistency reliability (0.80–0.95) and convergent, discriminant and predictive validity (Abidin, 1995; Haskett, Ahern, Ward, & Allaire, 2006; Reitman, Currier, & Stickle, 2002). Internal consistency of the measure was very high in the current study (i.e., Cronbach's Alpha = .98 for the total score and .95-.96 for the subscales).

The total score is designed to provide an indication of the overall level of parenting stress, though it does not assess stresses associated with other life roles. A total stress score of 90 or above indicates experiencing clinically significant levels of stress (Abidin, 1995). A dichotomous variable reflecting presence or absence of a clinically significant level of parenting stress was created as an indicator of high risk.

**Moderators of Risk.** To test the hypotheses that participation in the Healthy Families Massachusetts home visiting program and participants' reflective coping may influence the associations between risks and parental outcomes, these indicators were included as moderating variables. The measures used to assess the moderators are described below.

***Program Status.*** A dichotomous variable indicating program vs. experimental group assignment was used in the analyses to investigate the relations among participation in the home visiting program, risk factors, coping, and parenting behaviors.

***The Reflective Coping Interview (RCI).*** Reflective coping was assessed with an interview measure that was designed to tap into each of the dimensions of coping described earlier: Self-Other Representations, Beliefs about Control and Coping Scripts. The stress and coping interview consisted of 10 questions designed to elicit an account of a concrete stressful situation involving the child and assess the present state of mind with respect to coping. The questions were loosely based on the questions that Stone and Neale (1984) used in developing of their Daily Coping Inventory. More specifically, mothers were asked to recount the most

stressful situation of late related to the child, describe why it was stressful, whether they thought they could have prevented it from happening, how they felt during the situation, what they did to deal with it and whether what they did was helpful (please see the interview protocol in its entirety in the Appendix C). Interviewers were trained to adhere to the order and precise wording of the interview questions as much as possible, however probes to obtain clarifications were allowed. The interview took 4.90 minutes to administer on average ( $SD=1.90$ , range 1.27-12.35) and were audiotaped and transcribed.

The transcripts were coded by the investigator and 2 research assistants trained by the investigator, all of whom were blind to the pertinent information about the participants. For the first 20 interviews, transcripts were coded line by line. Twenty seven codes, defined and described in detail in the coding manual provided by the investigator (see Appendix D for the list of the original 27 codes). These codes represented indicators of the theoretically-derived dimensions of coping: “Self-Other Representations”, “Beliefs about Control” and “Coping Scripts” and were assigned to the specific segments of the transcripts that represented the notions the indicators described. Any segment could be labeled by any number of codes, which naturally resulted in a very large number of code assignments per interview. For example, the following segment was flagged by the codes “Type: Child: Devel”, “Control: No”, “Attit: Others: Acceptance”, “Coping: Persistence/Participation”, and “Attit: Self: Blame”:

*“He’s whiny and inconsolable and you can’t help him. You feel very helpless in that sense. He can’t communicate at all. My god, that drives me crazy. He’s trying to get you to do something, but he can’t tell you. It’s frustrating on both our ends... I’m trying to listen to him, pick up what he’s trying to tell me. And he’s trying his hardest to tell me what he wants.*”

*Eventually he just starts crying. That's hard. That's like, he's probably thinking in his head like, why can't you understand me?"*

In addition, the words *whiny, inconsolable, feel very helpless, drives me crazy, frustrating, crying, and that's hard* would be marked as CS:Emot and the words *sense, pick up, imagine, thinking, head, and understand* would be marked as CS: Cogn.

The coders met weekly to discuss each interview and resolve disagreements until 100% code-by-code agreement was reached. The goal of this process was to refine the definitions of the codes in accordance with analytic principles of grounded theory (Strauss & Corbin, 1998) and to train the coders to identify the themes relevant to these codes in the transcripts. No attempt was made to statistically evaluate inter-rater reliability at that stage due to the impracticality of the task.

Results of the line-by-line coding informed the development of a coding system that included 11 codes, which were derived from merging conceptually similar codes from the original list. Seven of the 11 codes were global ratings, which indicated the degree to which specific characteristics described the entire interview (“Self-Blame”, “Non-Defensiveness”, “Acceptance”, “Help Available”, “Help Unavailable”, “Engagement”, “Submission”). A manual with definitions and guidelines for global coding was used to guide the coders (see the manual in Appendix E). Inter-rater reliability was assessed using average absolute agreement intraclass correlation coefficients (ICC) in a two-way random effects model and was based on 30 coded interviews. Upon achieving reliability, the coders coded a random selection of additional interviews (5% of remaining sample) to ensure accuracy and prevent against inter-coder “drift”. The list of global codes, their definitions and the ICCs are reported in Table 2.

In addition to assigning the global codes, coders were also trained to specify the type of stressor reported by the mother (pertaining to child, parenting task or other) and the mothers' descriptions of the stressor as preventable (Cohen's Kappas =.88 and =.91, respectively) and count the words that describe cognitive processes and emotional states, ICCs =.86 and .94 respectively (for a detailed description, see Appendix E).

### **Analytic Strategy**

The study was conducted in two stages to correspond to its two objectives: to (1) establish the psychometric properties of the RCI and then (2) test a conceptual model in which coping moderates the impact of risk factors on parenting.

The analyses for the first phase were conducted in Lisrel 8.80 Student Edition software. Upon examining the descriptive statistics for the codes obtained from the qualitative coding of the interviews, a confirmatory factor analytic (CFA) approach was used to evaluate how well the observed relations among the codes could be reproduced in a pre-specified factor solution. As shown in Figure 3, the measurement model included three indicators that together were believed to tap into the unobserved construct of coping: "Self-Other Representations", "Beliefs about Control" and "Coping Scripts". These indicators, in turn, were comprised of the codes derived from the qualitative coding of the interviews (see Appendix E for details on each indicator).

To evaluate the nature and dimensionality of the proposed measure of coping, I conducted a second-order factor analysis, in which the higher-order factor, "Reflective Coping", was predicted to be represented by three lower-order factors ("Self-Other Representations", "Beliefs about Control" and "Coping Scripts").

To allow for second-order factor loadings to be freely estimated, the variance and covariances of exogenous latent variables were specified to be symmetric with the variance fixed

to one. The first of each congeneric set of indicators was constrained for the purpose of scaling and statistical identification; the remaining indicators were freely estimated. Variances of the first two first-order factors were constrained to be equal. Without placing a constraint in the upper-level of the model, the model will be just-identified (Byrne, 1998). The decision to equate these specific parameters was based on a prior analysis in which these covariances were small and approximately equivalent.

I used weighted least squares (WLS) estimator to fit the second-order factor model of coping, as its fit function is adjusted for violation of normality and is therefore appropriate for models in which some or all of the observed variables are not interval (Brown, 2006; Jöreskog & Sörbom, 1996). Model fit indices and estimates from the factor model were used to evaluate the validity of the measure of reflective coping.

In phase two, latent factor scores of coping and its three dimensions were saved and merged into an SPSS dataset containing the risk and parenting variables. To test the hypothesis that coping moderates the negative impact of risk factors on the quality of parenting behavior, the hypothesized moderated relations were examined by fitting a set of nested multiple linear regression models: Model 1 including predictor variables of psychological and financial risk, Model 2 including only the moderator, and then the predictor and the moderator variables, along with the interaction terms in Model 3.

## Chapter 4: Results

### Analytic Objective 1: Validation of the Measure of Coping

Descriptive statistics for the 7 global codes are presented in Table 3. As can be seen from the distribution of the ratings, most of the participants did not describe the themes that constituted the codes “Self Blame” and “Help Unavailable”: more than half of the interviews received a rating of 0 (“not at all”) on these codes and another quarter received a rating of 1 (“somewhat”). Further, seventy percent of the interviews received a rating of either 0 or 1 for “Help Available”, meaning that most participants rarely described the theme of availability of help. Such distributions point to a low utility of these codes, since they were poorly represented in the data. Ratings were more evenly distributed for the rest of the codes: the degree to which they were present in the interviews was rated as either 2 (“moderately”) or 3 (“highly”) in approximately half of the sample.

The average ratios of emotion and cognition words to the total word count of the participants’ speech were .04 ( $SD=.01$ ) and .02 ( $SD=.01$ ), respectively. In other words, per every 100 words, on average 4 were words describing affective states and 2 were words describing cognitive processes. The distributions of both variables were positively skewed, which means that bulk of the values was to the left of the mean. Both distributions had a number of extreme values (more than two standard deviations) on the high end. The outliers presented extreme but genuine indicators, i.e., some participants simply used many more emotion or cognition words than the majority. Extreme values distort the mean and standard deviation calculations, however, which is problematic in multivariate research as it assumes normality of distributions. Attempts to reduce the effect of outliers by transforming the variables did not result in better distributions.

The outliers were kept in the CFA model, because the weighted least squares (WLS) estimator used to fit the models is robust against violations of normality (Brown, 2006).

Bivariate correlations among the global codes and the emotion and cognition word ratios are presented in Table 4. A number of significant correlations emerged and all of them were in the hypothesized direction (indicators of reflective coping were inversely related to indicators of non-reflective coping). The only exception was the correlation between “Help Unavailable” and “Emotion Ratio”, which suggested that higher ratings of the unavailability of help were associated with the use of fewer emotion words.

A confirmatory factor analysis was conducted to evaluate how well the ratings obtained from qualitative coding of the interview fit the theoretically based second-order model of coping. The standardized solution is shown in Figure 4. The goodness-of-fit statistics indicated that the hypothesized model of coping fit the data poorly (model  $\chi^2(df = 25, N = 160) = 107.23, p < .001$ , RMSEA=0.14). One of the potential causes of the misfit was the fact that the third first-order factor, “Coping Scripts”, was not statistically viable: its parameter estimates took out-of-range values that did not make statistical sense (completely standardized factor correlations exceeding 1.0 and negative error variance of one of the indicators). These offending estimates, called “Heywood cases”, typically mean that the values of the parameter are close to zero and may be indicative of problems with the sample (Byrne, 1998; Brown, 2006). In the case of this study, these inadmissible values might have been caused by the fact that the ratios of emotion words to total word count and cognition words to total word count had a large number of extreme values.

Further, the solution also revealed low factor loadings for “Self-Blame”, “Help Available” and “Help Unavailable”, indicating that they are not reliable measures of their latent constructs. This conclusion makes sense in light of the fact that the descriptive analysis of the



distributions of these global codes revealed that the variability in item scores was low (they did not characterize most of the participants).

Guided by these findings I re-specified the model, retaining only two first-order factors (“Self-Other Representations” and “Beliefs about Control”) and four indicators (“Non-Defensiveness”, “Acceptance”, “Engagement” and “Submission”). The resulting solution (see Figure 5) was satisfactory with  $\chi^2$  goodness-of-fit measure of 8.50 with 5 degrees of freedom. Other goodness-of-fit indices were in line with Hu and Bentler’s (1999) suggested criteria, which supported the conclusion that the sample data fit the specified factor solution well: Root Mean Square Error of Approximation (RMSEA) = 0.066, 90% Confidence Interval for RMSEA = 0.0 ; 0.14, standardized RMR =0.073, Comparative Fit Index (CFI) = 0.98, and Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Non-Normed Fit Index (NNFI) all being higher than .95.

All freely-estimated unstandardized parameters were statistically significant ( $z_s > 1.96$ ) with the exception of error variances of “Acceptance” and “Engagement”.

Each first-order factor loaded moderately to strongly onto the second-order factors (range of loadings .61-.90, see Figure 5). The direction of all factor loadings was in accord with prediction. In other words, the latent structure of the components of coping is well-represented by the observed variables: the underlying first-order constructs capture 37%-81% of common variance in the indicators.

The correlations between the first and the second-order factors were high (.71 for “Reflective Coping” and “Self-Other Representations” and .78 for “Reflective Coping” and “Beliefs about Control”). The correlation matrix also showed that, as predicted, the second-order

factor, “Reflective Coping”, accounted for 55% of the covariance between the first-order factors (“Self-Other Representations” and “Beliefs about Control”).

To explore whether the indicators are psychometrically interchangeable (which would justify the practice of operationalizing the latent constructs by summation of their indicators’ observed scores), I compared the congeneric model described above with tau-equivalent and parallel models, which test the conditions of equal factor loadings and equal error variances, respectively (Brown, 2006). Using the  $\chi^2$  difference test, I evaluated whether the increase in  $\chi^2$  in the parallel, tau-equivalent model was significant at 3 degrees of freedom. The  $\Delta\chi^2$  was of 1.32, which is below the critical value for  $df=3$ . The fact that the  $\chi^2$  of the parallel, tau-equivalent model did not differ significantly from the congeneric model means that the indicators measure their respective latent constructs with the same level of precision. This finding lends support to the notion that a summary score of all four indicators (“Acceptance”, “Non-Defensiveness”, “Engagement” and “Submission”) will adequately capture the latent variable, “Reflective Coping”. Additional evidence for this conclusion was provided by a correlation analysis of the summary score of reflective coping and the latent variables scores obtained from the CFA analysis ( $r=.87, p=.000$ ).

In sum, the goodness-of-fit indices and interpretability, size, and statistical significance of parameter estimates suggest that the fitted CFA solution is acceptable. However, these results need to be interpreted with caution, given that solutions from fitting models with only two factors and two indicators per latent construct are susceptible to empirical underidentification (Brown, 2006). Empirical underidentification refers to the situations in which a model is nominally identified based on its structure, but it is not identified based on the sample data being

analyzed (Kenny, 1979). A detailed consideration of this limitation, as well as proposed solutions to this problem, are presented in the Discussion section.

To conclude, although I was unable to fully confirm the hypothesized latent structure of coping within the framework of the confirmatory factor analysis due to the limitations of the data, the proposed measure of coping could still have predictive validity. In the next section, I explore the predictive validity of the revised version of the measure of coping (i.e., the extent to which it can correctly predict what it was designed to predict) in a hierarchical multiple regression.

### **Analytic Objective 2: Hypothesis testing**

The second goal of the study was to test the hypothesis that reflective coping weakens the negative impact of risk factors on the quality of parenting behavior. Descriptive statistics for the variables of interest are shown in Table 5. A sizable proportion of the participants were experiencing high levels of psychological and financial risk and the majority of them were exhibiting non-optimal parenting behaviors. The average score on the maternal sensitivity subscale was 4.60 ( $SD=1.29$ ). According to the 4-category system proposed by Biringen and Easterbrooks (2012), this was a high-risk sample: only 8% of the participants demonstrated “optimal” sensitivity.

With respect to mothers’ own exposure to risk factors, a third of them were very young (34% were younger than 19 at the time of the interview); 39% endorsed clinical level of depressive symptoms and 16% had clinical levels of parenting stress. Only 3% were not receiving any form of public assistance (37% received three or more). Half of the sample (53%) reported having some difficulties covering their expenses, 14% reported having major

difficulties. The mean score on the Family Resources Scale was 112.16 ( $SD=17.68$ ), which was relatively high given that the midrange score for this measure is 60.

Bivariate correlations among the variables of interest are presented in Table 6. With the exception of maternal age, no risk factors were significantly related to maternal sensitivity. Their simultaneous effect as well as the hypothesized moderated relations between risk factors and parenting behavior were examined by fitting a set of nested multiple linear regression models: Model 1 included predictor variables of psychological and financial risk, Model 2 included only the moderator, and then the predictor and the moderator variables, along with the interaction terms were entered into the consecutive models. A nested taxonomy of the regression models that describe the relation between parenting behavior and predictor and moderator variables is shown in Table 7.

Model 1 evaluated the impact of the risk factors on maternal sensitivity during a teaching task and also included the variable indicating program vs. experimental group assignment. While the dichotomous variable of program participation did not reveal the hypothesized positive effect of the program on maternal sensitivity, most of the risk factors were significantly related to poorer parenting when considered simultaneously. As follows from Model 1, controlling for the effect of other variables in the model, maternal sensitivity increases by 0.21 with each year increase in mothers' age (in other words, all else being equal, a 25 year old mother is expected to have a score on maternal sensitivity that is one point higher than the score of a 20 year old mother). With respect to depression, endorsing a clinically significant level of symptoms predicted about a 0.60 drop in maternal sensitivity, when other factors were controlled for. Family resources and receipt of public funds had a significant effect of on maternal sensitivity. The effect of family resources was in the opposite direction than hypothesized: all else being

equal, for every unit increase in family resources was associated with a -.01 unit decrease in sensitivity (a 1 point decrease in sensitivity is predicted by an increase in FRS by 100 points). Controlling for other variables in the model, receipt of each additional public assistance program was associated with a 0.19 unit drop in sensitivity.

As shown in Model 2, coping did not independently predict the outcome variable, but as presented in Models 3 and 4, it moderated the negative effect of family resources on the quality of parenting behaviors. The most parsimonious model (Model 4) accounted for significant variance in maternal sensitivity ( $F(5,119) = 4.69, p=.001, R^2=.165$ ). Each predictor variable (age, clinically significant depressive symptomatology, family resources, coping and an interaction of coping and family resources) was significant in this model (see Table 5). The overall  $R^2$  for this model is only .165, indicating that the variables in the model account for about 17% of the variance in a mother's sensitivity, so there must be other factors contributing to parenting behaviors which I did not assess.

There was a significant interaction between coping and family resources, indicating that, controlling for the effect of age and depressive symptoms, the effects of family resources on maternal sensitivity were different depending on the levels of reflective coping. Figure 6 illustrates the nature of the moderation. The following values were entered into the equation to create the prototypical plot: 1 for CES-D (showing depressive symptoms above the clinical cut-off), 19.89 for age (mean age for the sample), the mean and +/-2 standard deviations for FRS, and the mean and +/-1 standard deviation for reflective coping.

In interpreting the uncovered moderation of the effect of family resources on maternal sensitivity, it is important to keep in mind that the direct impact of family resources was found to contradict the hypothesis (see Model 1 in Table 7). In light of the finding that higher family

resources predicted lower sensitivity when the effect of other risk factors and program participation were accounted for, it makes sense to refer to higher, not lower, family resources as the risk factor for less optimal parenting (see the Discussion section for a detailed treatment of this finding). Turning to the model that contained the interaction term (Model 4), coping seemed to play a protective role, as predicted, against the negative impact of risk. All else being equal, higher reflective coping reduced the negative impact of higher risk (higher family resources): mothers whose reflective coping was 1 standard deviation above average had about a one point advantage in sensitivity, compared to mothers whose coping was 1 standard deviation below average. Another way to look at the uncovered moderation is as follows: mothers who were functioning most poorly were those who experienced higher risk and had lower reflecting coping; in the absence of risk, the protective impact of reflective coping decreased, and even reversed. In other words, there was no benefit to engaging in reflective coping for mothers who were older, not depressed and living in low risk circumstances; in fact, engaging in coping in such low-stress circumstances was associated with lower maternal sensitivity.

In summary, on its own, coping did not explain variance in maternal sensitivity; however, when considered in the context of risk, the measure of coping predicted sensitivity given differing levels of risk in the direction that was predicted. To conclude, predictive validity of the measure of coping was established insofar that it moderated the effect of risk factors on maternal sensitivity.

## Chapter 5: Discussion

Despite a steady decline over the past 14 years, the rates of teen parenting are on the rise again, especially among Hispanic and non-Hispanic black teens (Savio-Bers & Hollo, 2009). Children born to teenage mothers are at risk for a variety of negative developmental outcomes, which persist from infancy well into adulthood (e.g., Jaffee, Caspe, Moffitt, Belsky, & Silva, 2001). The rates of developmental delays among children of adolescent mothers are three to four times higher than for children born to adult mothers (Borkowski et al., 2007). Children's difficulties have been attributed to less than optimal parenting that characterizes adolescent mothers (Borkowski et al., 2007). As a group, teenage mothers have a heightened child abuse and neglect potential; have more punitive attitudes towards childrearing and unrealistic expectations of infant development; and are less sensitive and responsive to their children (Bornstein, Putnick, Suwalsky, & Gini, 2006; Chang & Fine, 2007; Hoffman, 2006; Noria, Weed, & Keogh, 2007). Poor parenting practices of teen mothers are likely a result of their developmental unpreparedness to parent, but also of the disproportionately higher exposure to multiple sources of stress (Jaffee, Caspe, Moffitt, Belsky, & Silva, 2001). For many teen mothers these stressors include own histories of abuse, poverty, underemployment, school failure, isolation and decreased social support, single parenthood, depression, substance abuse and other indicators of high levels of stress (Buchholz & Korn-Bursztyn, 1993; de Paúl & Domenech, 2000; Lee, 2009). Stress depletes adolescent mothers' psychological resources and diminishes their capacity to provide optimal parenting (Passino et al., 1993).

Still, most adolescent mothers show adaptive functioning and most children of young mothers maintain competences notwithstanding the prevalence of risk factors (Budd, Heilman, & Kane, 2000; Savio Beers & Hollo, 2009). It has been proposed that certain protective

mechanisms may be mediating the effect of adversity on teen mothers' development as parents (Carothers, Borkowski, & Whitman, 2006; Easterbrooks, Chaudhuri, Bartlett, & Copeman, 2011). Adaptive outcomes despite stress or adversity can be explained by individual differences in response to stress (Rutter, 2007). Given the high level of stress experienced by adolescent mothers and their children, how young mothers respond to stress (i.e., cope) could explain variability in their parenting outcomes.

The idea that coping mitigates the adverse effects of stress is intriguing because, unlike such static variables as personality dispositions, biological and psychological vulnerabilities, history and cohort effects, coping can be modified and therefore enhanced to improve adaptation (Folkman, 1991). Despite the strong emergence of coping as an explanatory construct in psychology, however, its potential to predict pathways to successful adaptation to stress has not been realized by the field (Compas, 2009). Empirical development of measures able to capture the dynamic multimodal nature of coping has been lacking, which has limited our ability to evaluate the appraisals that mediate the process of coping (Folkman & Moskowitz, 2004).

Recently, a promising new conceptualization of coping as regulation under stress has been suggested (Compas, 2009; Eisenberg, Valiente, & Sulik, 2009; Skinner & Zimmer-Gembeck, 2009). This conceptualization urges the field to explore the connections between coping and self-regulation and presents an opportunity to reorient the research on coping towards a more complete understanding of the processes of adaptation to stress.

The key objectives of the present study were (1) to develop and validate a measure of coping that would be sensitive to the major criticisms of the previous research and based on an integration of the literatures on coping and emotion regulation; and (2) using this instrument, to



explore the role of coping in moderating the impact of risk and program participation on parenting outcomes of young mothers.

The present study represents the first step in developing a measure of coping that addresses weaknesses of the extant instruments (such as overreliance on checklists, representing complex coping processes by static values for specific coping strategies, etc.; for a review, see Compas, 2009; Coyne & Racioppo, 2000) by assessing not only what individuals do in a stressful situation, but also the appraisals that lead them to take these actions. I hypothesized, based on an extensive review of the literatures on coping and neurobiology of emotion, that the following three dimensions could jointly explain the coping process: self-other representations, beliefs about control, and coping scripts. These dimensions are defined as cognitive beliefs and scripts that impact each of these processes and correspond to Lazarus and Folkman's (1984) proposed sequence of the coping process, including primary appraisal, secondary appraisal, and reappraisal.

A semi-structured interview was used to elicit detailed descriptions of a recent stressful event related to the child. Transcripts of the interviews were coded by trained graduate students, who reached high reliability. Nine codes (candidate indicators for each of the three dimensions of coping) were generated using a theoretical approach as well as the analytic principles of grounded theory (Strauss & Corbin, 1998).

The proposed factor structure of coping was evaluated using the confirmatory factor analytic approach. The analysis did not confirm the structure of the originally proposed model of coping but a revised model fit the data well. The revised model retained the following four indicators: "Acceptance" and "Non-Defensiveness", assessing the dimension of "Self-Other

Representations”; and “Engagement” and “Non-Submission”, assessing the dimension of “Beliefs about Control”.

The results of the multivariate regression analysis confirmed the hypotheses that (a) financial and psychological risk factors would have a negative impact on the quality of parental behavior (maternal sensitivity), and (b) the negative impact of risk factors would be weakened by engaging in higher reflective coping. In addition to the predicted relations among the variables, several unexpected results were uncovered and are interpreted below.

### **Risk Factors: Expected and Unexpected Findings**

As was predicted, higher perceived financial difficulties, clinically significant symptoms of depression, and lower maternal age were associated with less optimal parenting behavior. When other risk factors were controlled for, parenting stress and perceived financial difficulties did not explain additional variability in maternal sensitivity. A likely reason for the trivial contribution of these two risk factors to the model, given all the other variables that have also been entered into the model, is multicollinearity (i.e., the variables contain the same information about the phenomenon they measure). In support of this explanation, a bivariate analysis showed that higher perceived financial difficulties were correlated with both the family resources ( $r=-.47$ ,  $p<.001$ ) and the summary score of depressive symptoms ( $r=.26$ ,  $p<.001$ ); the summary scores for parenting stress and depressive symptoms were also correlated ( $r=.27$ ,  $p<.001$ ). Previous research has noted that the Parenting Stress Index overlaps with measures of emotional health, e.g., depression (McPherson, Lewis, Lynn, Haskett, & Behrend, 2009). It makes sense also that perceived financial difficulties would be linearly related to higher depressive symptomatology: depressive thinking could be affecting the subjective evaluation of one’s financial struggles. The fact that the number of public assistance programs the mothers received was not associated with

self-reported financial difficulties gives credence to this explanation (i.e., whereas eligibility for public assistance programs is an objective indicator of poverty, self-reported financial difficulties are not). The inverse relation between family resources and perceived financial difficulties is counterintuitive, but makes sense in light of the discussion that follows.

Unlike other risk factors in the regression model, lower family resources were associated with more, not less, optimal parenting behavior (sensitivity). Before questioning the conceptual basis of the hypothesis that a low level of perceived family resources would be a risk factor for lower maternal sensitivity, I examined the validity of the Family Resource Scale to rule out the possibility that it failed to measure what it was intended to measure. A series of bivariate analyses to explore how the FRS related to other variables provided proof of its convergent validity: having higher perceived family resources was associated with being employed ( $\rho = .19, p < .05$ ), receiving financial support from the father of the baby ( $\rho = .28, p < .001$ ), and having people to turn to for daily living resources ( $\rho = .38, p < .001$ ), information resources ( $\rho = .19, p < .05$ ) and emotional support ( $\rho = .25, p < .001$ ). These associations suggested that the FRS was in fact capturing the concept of perceived availability of family resources and thus a conceptual reason for its inverse association with maternal sensitivity had to be considered.

One potential explanation for the observed association could be related to the fact that the FRS assesses not only the perceived adequacy of financial resources but also intrafamily support, childcare and personal resources (time for self, time to get enough sleep, time to socialize, time to look nice and keep in shape, etc.). Perhaps mothers who have more of such resources also have more opportunities to spend time away from their children and as a consequence, are not developing the types of skills that the maternal sensitivity scales assesses (conflict negotiation, knowing how to read the child's signals and respond appropriately). Consider, for example, the

following interview with a participant, whose score on the FRS was among the highest in the sample (137.50):

Interviewer: *We all know that parenting can be really stressful sometimes. Can you think of a time in the past couple of weeks that was especially difficult or stressful involving (child's name)?*

Participant A: *When she gets really overtired, she screams. She screams very loud. She has a high-pitched scream and she can take hours to go to sleep, because she is overtired... Usually I hand her off to my mom because she is screaming and I can't always hold on to her because she worms.*

Interviewer: *At the time, did you feel like there was anything you could have done to prevent it from happening?*

Participant A: *No, I just thought, just put her down and let her cry it out because she can't be dependent on me all the time, because sometimes she is going to have to depend on my parents, well this weekend, because my sister and I are going to Maine. ...my sister... knew I was having boyfriend problems so she invited me up to Maine.*

A higher level of personal resources (more time to socialize, rest, keep in shape, etc.) may also be reflecting having more opportunities for personal development and satisfaction of needs. In the context of parenting, however, personal needs often come in conflict with the needs of the child, so perhaps access to family resources might be providing these young mothers an opportunity to delay the development of parenting skills. In other terms, the mothers who emphasized access to personal resources may have been more underdeveloped in their roles as parents, which, from the perspective of the needs of the child, represents a risk factor. For

instance, the following participant also had a high score of 137.5 on the FRS and described feeling unprepared as a parent during a stressful situation involving her child's health:

Participant B: ... *I was by myself, and I'm usually, when something like this happens, I'm usually with my mom, or with my boyfriend, or something like that. And I don't know, I just, since I'm new at it, I feel like, I don't know, I was by myself so I was kind of scared, because I felt like I wasn't doing something right... I was desperate. I was desperate. I was scared. I felt stuck because I don't have a car. I had medicine, but I didn't know how to give it to her or anything. But I checked her temperature and I knew she was ok when I checked her temperature. But, besides that, I don't really know what to do. So I was scared.*

On the opposite end of this scenario, not having access to family support might be putting teen mothers into the position of having to prioritize development as a parent over their personal needs. Previous research has shown that teen mothers might struggle with integrating the dual task of adolescent and parenting development in such a way that providing optimal parenting sometimes comes at "a cost" to personal functioning (Easterbrooks, Chaudhuri, & Gestsdottir, 2005; Easterbrooks, Chaudhuri, Bartlett, & Copeman, 2011). The FRS might be capturing the same dynamic in that, in the context of low family resources, young mothers might be getting a lot of opportunities to develop as parents, though at the expense of meeting their own developmental needs. In support of this explanation, bivariate analyses found that lower family resources were related higher depressive symptomatology ( $r = -.54, p < .001$ ) and higher Parenting Distress, a subscale of the Parenting Stress Index that assesses the level of distress resulting from personal factors such as depression or from life restrictions due to the demands of

parenting ( $r=-.22, p<.05$ ). Consider, for instance, the distress the following participant, who had a very low score on FRS (67.50), described in the interview:

Interviewer: *...we all know that parenting has its really great points, but it can also be stressful at times...*

Participant C: *It is stressful. It is. I'm not going to lie about it, it is hard. Mostly when there is a financial problem and I need diapers and stuff. It's hard to put on anybody.*

Interviewer: *Yeah. So ...think about a specific situation involving [child's name] where it was very difficult or stressful.*

Participant C: *Yes, the day when she went to daycare with no diapers. I was stressing out, I was crying. I had no one to depend on... It's pretty hard, one time I had no one to call or anything. She had no clothes as much.*

Interviewer: *And so, when you think back to that day, so why was it stressful to you?*

Participant C: *I felt like I was failing. I felt like I was basically failing being a mommy, you don't want to fail for your daughter. At the time I was failing so much... Basically, feeling very sad and um guilty.*

### **The Role of Coping**

The results of the study showed that, controlling for the effect of other risk factors, the negative effect of family resources on maternal sensitivity was lower if mothers had higher reflective coping. In light of the proposed interpretation for the negative relation between family resources and maternal sensitivity, the findings about the moderating role of reflective coping make conceptual sense. If higher resources afford these young mothers opportunities to spend time away from the baby and engage in self-care activities at the expense of developing as a parent, than it makes sense conceptually that mothers who use more reflective coping would still

be able to have sensitive interactions with their children. Reflective coping incorporates the ability to understand the psychological point of view of others, non-defensive responding to stress, persistence in the face of stress, ability to reappraise stressors to change their emotional significance, and the general sense of mastery. These characteristics are necessary in order to effectively cope with parenting stress, or more specifically, to show optimal sensitivity during the teaching task. Having high reflective coping could therefore be facilitating higher maternal sensitivity in the context of the stressful task despite the fact that in their day-to-day lives mothers with higher FRS could be spending less time with their children. The following abbreviated excerpt from an interview with a mother who reported high family resources (FRS =140.5) and was rated highly on both reflective coping and maternal sensitivity illustrates this interpretation:

Interviewer: *So let's talk more about that situation, think about the last time when he was really cranky because of his teeth. What was going on? What was he acting like?*

Participant D: *He just cries a lot. He gets sick when he grows his teeth. So he gets like a cold and stuff. I just gotta have patience I guess. Just giving him medicine and keeping him hydrated... Put Oral Gel on his teeth. Just pretty much make him comfortable.*

Alternatively, low reflective coping is characterized by reactivity, focus on power dynamics, and a tendency to give up or to avoid stress. For mothers who, by virtue of higher family resources, did not have many opportunities to navigate through difficult situations with the child, the stress of the teaching task in the context of low reflective coping could decrease her ability to show sensitivity towards the child. Consider the following example:

Participant E: *...sometimes I want to get up and go out, and I don't want her to be with me... Before I had [child's name], I used to get up and go. I could do whatever I wanted to. I don't have to worry about getting no baby dressed. I would get in the shower, call my girls, and say "Hey, let's go outside", or let's go to Applebees, or to the movies or something. I can't just get up and leave when I want to because now I have a daughter and I have to get her dressed and then pack her bag and do all this work. And it's just so aggravating...*

Interviewer: *Ok, so what other emotions were you feeling?*

Participant E: *Angry! I was feeling mad and a little jealous that they get to leave and stay out late, and don't have to worry about taking care of no responsibilities. I get really mad because every day I have to be stuck in the house with [child's name]. Well, I don't have to be stuck, I can go to my mom's, but. ...her God-mother might take her on the weekends, but not all the times... I kind of got use to calling [her] all the time, so now [her family] act[s] a little rude towards me.*

Several interesting observations about the role of coping emerged from this study. Firstly, it is interesting to notice that the results show that in the context of lower risk for less optimal parenting (i.e., low family resources), the protective impact of reflective coping was reversed. This study made no predictions about the effect coping would play in the context of low risk; in fact, the conceptual framework that guided this study, resilience, focuses on adaptation in the context of risk. Still, it is an intriguing finding. Though additional research is needed to replicate the reversed effect of coping in the context of low family resources, one possible explanation for the observed relations could be that reflective coping draws on the same the psychological resources as sensitivity, in which case, in the context of low family resources, being cognitively



invested into maintaining a higher level of reflective coping may be depleting the psychological resources needed to engage in sensitive behaviors.

The next interesting observation that arose from the findings is the lack of a main effect of coping on maternal sensitivity. Though the study did not make any hypotheses as to the relation between coping and sensitivity, the line of reasoning advocated by coping interventions, as well as by the field of coping in general, would suggest that “adaptive” coping should consistently lead to better outcomes. It is precisely this assumption, however, that has generated a great deal of criticism of the extant research on coping. Firstly, it is misleading to talk about the effectiveness coping in the context of cross-sectional designs, since the direction of the relations between coping and adjustment cannot be established (Compas et al., 2001). Secondly, assuming universal benefits of coping without considering its overall relevance to the chosen outcome variables and the theoretical grounds for expecting it to affect the outcome variable oversimplifies the construct of coping and treats it as a static quality (Folkman, 1991). As a complex and dynamic process, coping is flexible and situational; attaching an evaluative judgment to it or using predetermined criteria to classify coping into adaptive or maladaptive does not allow consideration of the unique circumstances of each coping transaction (Lazarus & Folkman, 1984; Litt, Tennen, & Affleck, 2011). There is mounting evidence against making broad-stroke assumptions about the adaptive or maladaptive nature of specific profiles of coping or emotion regulation, which provides additional support for the need to contextualize coping before linking it to specific outcomes. For example, Dunn, Billotti, and Dalgleish (2009) posited that, although deliberate attempts to suppress emotion were linked to heightened physiological arousal in some situations, suppression could also lead to successful down-regulation of emotion in other situations (e.g., in populations frequently exposed to negative stimuli). Suppression of

unpleasant emotions is conceptually similar to “Submission” in this study (characterized by disengagement or avoidance of the stressor). As such, Dunn, Billotti, and Dalgleish’s (2009) findings corroborate the results of this study that low-reflective coping (marked by higher submission) could have a beneficial role of in some contexts. Furthermore, in situations when submission does have a negative impact on adaptation, the degree of this impact may not be the same for different individuals. For instance, Powers, Battle, Dorta, and Welsh (2010) found that adolescents’ submission (giving in) in the context of parent-child conflict was related to significantly worse outcomes (internalizing problems) in girls compared to boys.

It is also interesting that coping did not moderate the impact of any other risk factors on maternal sensitivity. It is particularly surprising to see no interaction of coping with age, given the literature that suggests that qualitative shifts in coping are aligned with the emergence of other self-regulatory capacities, such as the gradual development of complex executive control functions in adolescence (Skinner & Zimmer-Gembeck, 2007; 2011). Since the maturation of the prefrontal cortex begins in early adolescence and continues well into adulthood (Casey, Jones, & Hare, 2008; Sowell, Thompson, Holmes, et al.1999), one would expect to observe variability in the capacity to engage in reflective coping among adolescents of different ages. It is possible that the age range of the sample (17-23 at the time of the interview) did not afford enough variability (especially on the lower range) for age differences in coping to emerge in the analyses.

Finally, it is interesting to note that I was unable to test the hypothesis that coping would have an amplifying effect on the assumed positive relation between program participation and maternal sensitivity. In fact, program participation, assessed as a dichotomous variable indicating group assignment, did not have a direct effect on the outcome variable. This finding is likely related to the well-documented issue in program evaluation: the dichotomous status variable does

not allow researchers to unpack the actual nature of the program's impact. It has been argued that to fully understand the impact of participating in a home visiting program, one needs to consider patterns of service utilization (program dosage, including the total number of visits, collateral or secondary activities, the length of enrollment in program, number of completed home visits, duration of visits, and ratio of completed to expected number of home visits), service intensity (i.e., the ratio of the amount of total services received to the duration of participation in the program), point of service initiation, as characterized by pregnancy status at enrollment, etc. (Ammerman et al., 2006; Kisker, Paulsell, Love, & Raikes, 2002; Korfmacher et al., 2008).

Although such a comprehensive analysis of program participation was not the goal of the study, the lack of this information likely prevented me from observing its effect on maternal sensitivity.

### **Limitations**

This study offers promising initial results with respect to the protective role of coping in high-risk contexts. However, these results need to be interpreted in consideration of the fact that the study had a number of limitations. In the following sections, I review these limitations and propose ways in which they can be addressed in future research.

**Limitations of the RCI.** Although the measure had a clearly established content validity (i.e., it was based on a thorough and systematic review of the relevant literature), I was unable to confirm the structure of the originally proposed model of coping and had to revise it in an attempt to find a better-fitting model. A likely reason for not being able to capture common variance is the fact that the internal structure of the measure had several limitations. These limitations have to do with the characteristics of the manifest variables chosen to represent the dimensions of coping and are described below.

The first limitation of the measure is that the indicators may have been too general, as they combined several characteristics into one rating. For instance, the rating for the “Defensive” self-other representations involved several characteristics (i.e., making resentful, blaming remarks about others; focusing on own distress; lacking compassion; preoccupation with power disadvantage). As such, unique variability on these characteristics was not being captured due to the fact that they were merged into one rating. In developing a measure that involves a qualitative analysis of the data, the researcher has to consider the trade-off between measuring several indicators thought to indicate the same latent variable and the time and resources that it would take to train coders to reliably distinguish among highly nuanced codes that describe similar characteristics. Given the findings of the current study, it may have been beneficial to have more nuanced indicators and develop a set of clear and effective definitions to facilitate the process of establishing inter-rater reliability. In the future, it is possible that evidence of the construct could be obtained with the addition of new items that would measure each dimension of coping in different ways. Another way to remedy the problem would be to develop ways to use multiple methods of measuring coping simultaneously (e.g., using a self-report and an observational instrument), so that the method and trait variances could be modeled and separated. Evidence of construct validity would be obtained if different methods of measuring the construct converged on the same trait.

Another limitation of the indicators used in this study was the fact that several of them did not apply to the majority of the participants (e.g., Self-Blame). It could be an issue of defining of the indicator ineffectively (which could have resulted in the coders not identifying it when the characteristic was in fact present) or using an inappropriate scale on which to rate it

(i.e., the distance between ratings was too great to capture the fine distinctions among the participants, which resulted in most scores hovering at the low end of the scale).

The third limitation of the indicators pertains to the use of ratings, which are not interval data. The use of categorical indicators in the CFA framework is problematic, because factor analysis is justified only for continuous observed indicators (Jöreskog & Moustaki, 2001). CFA with categorical variables is conducted on the matrix of polychoric inter-item correlations, which are based on the assumption that the observed ordinal variable is generated by an underlying unobserved normally distributed continuous variable. The challenge with this approach is that, if the assumption of the underlying normality does not hold, the method may not fit the data (Jöreskog & Moustaki, 2001).

A better way to use categorical ratings in CFA involves parceling, a technique in which aggregate-level indicators are used as observed variables instead of item-level variables. In other words, instead of using the categorical ratings as indicators of coping, it might be more beneficial to use their averages as summary scores for the hypothesized dimensions of coping (e.g., the parcel for “Self-Other Representations” would be an average of the ratings on “Acceptance”, “Defensiveness”, and “Self-Blame”). Although different schools of thoughts disagree about the utility of this approach, Little and colleagues have demonstrated that parcels have important psychometric advantages over item-level data (see Little, Cunningham, Shahar, & Widaman, 2002 for a review). Aggregation has a normalizing tendency as it yields a parceled indicator that has more scale points than the original ordinal item and is more continuous in nature (Little et al., 2002). Further, by averaging the items into one subscale the researcher reduces the number of parameters that need to be estimated, which is an important advantage given sample size considerations. As such, upon improving the categorical ratings of the coping

measure to address the limitations mentioned earlier, a future study might benefit from aggregating them into a summary score for each subscale.

The next limitation of the RCI is that it did not meaningfully measure the third dimension of coping, “Coping Scripts”, which was defined as engagement in a reflective, thoughtful narrative about coping which emphasizes thought processes (reflective scripts). The analysis revealed that most of the variance in these two indicators was due to some other underlying construct not represented in the model. “Coping Scripts” were assessed using linguistic analysis (counting emotion and cognition words), based on the assumption that the proportion of these words in the narrative will capture important information about which aspects of the coping process participants attended to in their narratives. Ratios turned out to be a problematic choice due to their properties: the use of the ratios assumes that participants who have similar proportions of words of a specific kind would possess a similar degree of a specific trait regardless of how many words they used in total (e.g., the ratio of 0.02 describes the following scenarios: 5:250, 15:800 and 30:1500). However, there are likely important differences between participants who had a higher total word count and those who were extremely succinct (1500 total words versus 250), which were masked by the ratios.

In fact, although verbosity did not show a significant main effect on maternal sensitivity or interactions with coping or other variables in the regression model, a bivariate analysis revealed that a higher total number of words used by the participant was associated with higher ratings on “Acceptance” ( $r=.29, p<.001$ ), “Persistence/Participation” ( $r=.19, p<.05$ ) and lower ratings on “Self-Blame” ( $r=.25, p<.005$ ), “Defensiveness” ( $r=.32, p<.001$ ), Help Unavailable ( $r=.43, p<.001$ ) and Withdrawal/Submission ( $r=.20, p<.005$ ). In other words, saying more during the interview was related to higher reflective coping. This finding makes sense

conceptually: in the context of the interview, which was designed to elicit detailed descriptions of coping, engaging with the interviewer to provide an analysis of one's coping may be an indicator of the capacity to have reflective coping scripts. It is important to note here that variability in the length of the interview is likely a function of a host of factors which were not controlled for, of which propensity for reflective coping could be just one. Other possible contributing factors include differences in the style of the interviewer, external factors affecting the number of said words (noise, interruptions, time limitations), as well as state (e.g., mood, level of exhaustion) and trait (e.g., personality, language skills) differences among the participants. While it is beyond the scope of this study to comprehensively explain the causes for the uncovered associations between word count and the indicators of coping, consideration of verbosity and the underlying construct it may be representing contributes important insights to the discussion of ways to refine the measure of coping.

Despite the modest findings pertaining to the utility of ratios in assessing coping scripts, it makes sense conceptually to continue to think about incorporating the count of emotion and cognition words in the assessment of coping. The rich tradition of analyzing semantic characteristics of narratives and relating them to personality characteristics and psychological adjustment supports the utility of this method (e.g., Brody & Park, 2004; Chung & Pennebaker, 2007; Newman, Pennebaker, Berry, & Richards, 2003). Future studies should explore whether simply considering the number of emotion and cognition words in the narrative (and not how frequently they appear in the narrative), would yield informative results above and beyond the effect of verbosity.

Conceptually, the capacity to reflect about one's own coping is similar to the construct of "metacognitive awareness" or "decentering" (Segal, Williams, & Teasdale, 2002), which

involves having enough separation from one's thoughts and emotions so that one does not equate self with them. The underlying psychological mechanisms of reflective coping and metacognitive awareness are similar: mindful, reflective attention to one's thoughts and feelings, and acceptance of stress and one's responses to it as fleeting ideas rather than reality. In fact, the Measure of Awareness and Coping in Autobiographical Memory (MACAM) developed by Teasdale and colleagues (2002) to assess metacognitive awareness is structurally similar to the measure of reflective coping used in this study: the MACAM elicits detailed descriptions of participants' feelings at the time of a "mildly depressing" experience (p.277). The responses are rated according to the degree of discrimination of self from feelings and thoughts. Given the conceptual and structural similarities, it might make sense to incorporate aspects of MACAM into the measure of reflective coping in a future study, to replace the ratios of emotion and cognitive words.

The limitations of the initially proposed measure of coping have prevented me from empirically confirming the hypothesized structure of coping in its entirety. A number of solutions described above might prove beneficial in addressing the limitations in future research. An alternative reason for not being able to capture common variance with the proposed measure also needs to be considered: it could be that there was no common variance to be captured. In other words, if the analysis does not provide supporting evidence for a hypothesized construct, then one needs to consider the possibility that the proposed construct does not exist or that the theoretical constructs hypothesized to represent coping do not go together as well as was predicted. Additional research is needed to determine whether the failure to capture common variance with the proposed measure is a reflection on the measure or on the theory. It is important to remember that the current study is only the first step in attempting to operationalize



this complex, multimodal construct and that the challenges encountered at this step have important implications and valuable lessons for the next stage of the development of a psychometrically sound measure of coping.

Given the poor fit of the initially proposed model of coping, a modified version was used to test the hypothesis that reflective coping would modify the negative impact of risk on parenting. Although in practice researchers will frequently revise their models to improve the fit to the data and achieve parsimony (i.e., eliminate indicators that contribute trivially), methodologists warn against post hoc model testing solely for the purpose of improving the indices of goodness of fit and without a compelling substantive (theoretical) basis for doing so (e.g., Brown, 2006). In other words, model re-specification may mask the fact that the indicators were chosen poorly or that the hypothesized conceptual model has serious problems.

In the case of the current study, the indicators used to fit the model did in fact have multiple limitations. Removal of those indicators that were poorly developed resulted in the case that only four indicators were retained to fit the re-specified model, two per each latent variable. A very important concern in fitting models with just two manifest variables to represent a factor is whether a specified model is empirically identified. For this reason, having a minimum of three indicators per latent variable is recommended (Brown, 2006; Byrne, 1998). Thus, the findings pertaining to the predictive validity of the re-specified model of coping should be understood in consideration of this limitation.

**Limited effect size and generalizability.** In interpreting the findings of this study, it is important to keep in mind the relative strength of the impact that family resources had on maternal sensitivity, when other risk factors as well as program participation are controlled for: a one unit decrease in sensitivity is yielded by an increase in FRS by 100 points. Given that

sensitivity is measured on a 9 point scale and the range of possible scores on the FRS is from 30 to 150, the impact of family resources on maternal sensitivity is rather small.

Another consideration is the overall predictive accuracy of the model. The proportion of variance in maternal sensitivity that the final model accounted for was rather low, which means that exposure to the risk factors assessed in this study and the moderating role of coping do not explain most of the variability in mothers' behavior. Admittedly, the goal of the study was not to exhaustively explain all possible antecedents of maternal sensitivity and no conceptual claims were made about the relative contribution to it of the variables analyzed here. Rather, the goal of the study was to explore the potential of coping to "intervene" and reduce the negative impact of risk factors on parenting. To this end, the present study yielded promising results with respect to the usefulness of reflective coping in promoting positive adaptation in the context of risk.

These findings of this study must also be interpreted in the context of its design. Specifically, the present investigation was conducted amongst a specific sample: 100% female, young parents exposed to multiple risks. As such, the extent to which the findings are generalizable to other groups remains unknown. Even within the population of teen mothers, this study did not seek to obtain a representative sample: this was a convenience sample, with cases chosen based on the availability of EA data. Further, this was also a self-selected group of participants, given that they chose whether or not to consent to video recording during the interview, causing a biased sample with a potential for systematic differences from the participants who denied video consent. In fact, a separate study involving a larger sample of participants found that mothers of infants with substantiated reports of infant neglect were less likely to agree to allow researchers to conduct videotaped observations than mothers of infants

who were not neglected (Bartlett, 2012). Therefore, given the self-selection bias, no claims can be made about the universality of the findings of the current study.

To conclude, future research will need to replicate these findings, with appropriately large and representative samples. Toward this end, the limitations of the measure will need to be addressed and the refined instrument will need to be subjected to further evaluation. It is recommended that the future studies randomly split the sample into two independent subsamples, so that the first subsample could be treated as exploratory and the second could be used to confirm the structure of coping. When the development of the instrument is finalized, reliability and construct, discriminant and convergent validity will need to be established. Further research will need to determine if a three-factor solution replicates across populations.

### **Future Directions**

The particular strength of this investigation is that it did not rely solely on self-report measures, integrating data from various assessment modalities, such as a behavioral assessment and observational ratings. However, all of the measures reported in this study were administered concurrently, precluding tests of causality or temporal precedence. Accordingly, an intriguing direction for future research would be to study reflective coping over time in order to ascertain its temporal sequence.

By looking at several modalities of coping (as opposed to focusing solely on coping strategies), this study took the first step towards a better understanding the complex and sequential nature of coping. However, to fully unpack the dynamic nature of coping, a sensitive longitudinal analysis of a person's coping with day-to-day encounters is required (Litt, Tennen, & Affleck, 2011; Tennen, Affleck, Armeli, & Carney, 2000). Daily or within-daily diary assessments of coping (Roesch, 2010) and ecological momentary assessments/experiential

sampling techniques (Reid et al., 2009; Shiffman, Stone, & Hufford, 2008) have recently been shown to offer significant advantages in capturing the continuously changing nature of coping.

## References

- Abidin, R. R. (1992). The determinants of parenting behavior. *Journal of Clinical Child Psychology, 21*, 407-412.
- Abidin, R. R. (1995). *Parenting Stress Index: Professional manual* (3rd ed.). Odessa, FL: Psychological Assessment Resources, Inc.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Lawrence Erlbaum.
- Aldwin, C. (2011). Stress and coping across the lifespan. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 15-34). New York: Oxford University Press.
- Aldwin, C. M. (2007). *Stress, coping, and development: An integrative approach* (2nd ed.). New York: Guilford.
- Ammerman, R.T., Putnam, F.W., Bosse, N.R., Teeters, A.R., Van Ginkel, J.B. (2010). Maternal depression in home visitation: A systematic review. *Aggression and Violent Behavior, 15*(3), 191-200.
- Ammerman, R.T., Stevens, J., Putnam, F.W., Altaye, M., Hulsmann, J.E., Lehmkuhl, H.D., Monroe J., Gannon, T, & VanGinkel J. (2006). Predictors of early engagement in home visitation. *Journal of Family Violence, 21*(2), 105-115.
- Arnsten, A. F., & Li, B. M. (2005). Neurobiology of executive functions: catecholamine influences on prefrontal cortical functions. *Biological Psychiatry, 57*(11), 1377-84.
- Astuto, J., & Allen, L. (2009). Home visitation and young children: An approach worth investing in? *Social Policy Report, 23*, 3-22.

- Bagner, D. M., Pettit, J. W., Lewinsohn, P. M., & Seeley, J. R. (2010). Effect of maternal depression on child behavior: A sensitive period? *Journal of the American Academy of Child & Adolescent Psychiatry, 49*, 699-707.
- Bartlett, J. D. (2012). *Young mothers, infant neglect, and intergenerational discontinuities in child maltreatment*. Unpublished doctoral dissertation, Tufts University.
- Berlin, L. J., Brady-Smith, C., & Brooks-Gunn, J. (2002). Links between childbearing age and observed maternal behaviors with 14-month-olds in the Early Head Start Research and Evaluation Project. *Infant Mental Health Journal, 23*, 104-129.
- Bird, G. W. , & Harris, R. L. (1990). A comparison of role strain and coping strategies by gender and family structure among early adolescents. *Journal of Early Adolescence, 10*(2), 141-158.
- Biringen, Z. & Easterbrooks, M. A. (2012) The integration of emotional availability into a developmental psychopathology framework: Reflections on the Special Section and future directions. *Development and Psychopathology, 24* , 137–142.
- Biringen, Z. (2000). Emotional availability: Conceptualisation and research findings. *American Journal of Orthopsychiatry, 70*, 104-114.
- Biringen, Z., Robinson, J., & Emde, R. N. (1998). *Emotional Availability Scales (3<sup>rd</sup> ed.)* Manual for coding EA scales. Fort Collins, CO: Colorado State University.
- Borkowski, J. G., Farris, J. R., Whitman, T. L., Carothers, S. S., Weed, K., & Keogh, D. A. (Eds.) (2007). *Risk and resilience: Adolescent mothers and their children grow up*. Mahwah, NJ: Lawrence Erlbaum.

- Bornstein, M. H., Putnick, D. L., Suwalsky, J. T. D., & Gini, M. (2006). Maternal chronological age, prenatal and perinatal history, social support, and parenting of infants. *Child Development, 77*, 875-892.
- Brannan, A.M., Manteuffel, B., Holden, E.W., & Heflinger, C.A. (2006). Use of the family resource scale in children's mental health: Reliability and validity among economically diverse samples. *Administration and Policy in Mental Health, 33*(2), 182-197.
- Breen, A. V., & McLean, K. C. (2010). Constructing resilience: Adolescent motherhood and the potential for self-transformation. In K. C. McLean & M. Pasupathi (Eds.), *Narrative development in adolescence: Creating the storied self. Advancing responsible adolescent development*. (pp. 151-168). New York, NY, US: Springer Science + Business Media.
- Brody, L.R., & Park, S. (2004). Narratives, mindfulness, and the implicit audience. *Clinical Psychology: Science and Practice, 11*, 147-154.
- Broth, M. R., Goodman, S. H., Hall, C., & Raynor, L. C. (2004). Depressed and well mothers' emotion interpretation accuracy and the quality of mother-infant interaction. *Infancy, 6*, 37-55.
- Brown, J., Cohen, P., Johnson, J.G., & Salzinger, S. (1998). A longitudinal analysis of risk factors for child maltreatment: Findings of a 17-year prospective study of officially recorded and self-reported child abuse and neglect. *Child Abuse and Neglect, 22*(11), 1065-1078.
- Brown, T. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford Press.
- Buchholz, E. & Korn-Burszty, C. (1993). Children of adolescent mothers: Are they at risk for abuse? *Adolescence, 28*(110), 361-382.

- Budd, K. S., Heilman, N. E., & Kane, D. (2000). Psychosocial correlates of child abuse potential in multiple disadvantaged adolescent mothers. *Child Abuse & Neglect, 24*, 611-625.
- Budd, K. S., Holdsworth, M. J. A., & Hogan Bruen, K. D. (2006). Antecedents and concomitants of parenting stress in adolescent mothers in foster care. *Child Abuse & Neglect, 30*, 557-574.
- Bugental, D. B., Johnston, C., New, M., & Silvester, J. (1998). Measuring parental attributions: Conceptual and methodological issues. *Journal of Family Psychology, 12*, 459-480.
- Bugental, D.P., Ellerson, P.C., Lin, E. K., Rainey, B., Kokotovic, A., & O'Hara., N. (2002) A cognitive approach to child abuse prevention. *Journal of Family Psychology, 16*(3), 243–258.
- Burchinal, M., Vernon-Feagans, L., Cox, M.J., & The Key Family Life Project Investigators (2008). Cumulative social risk, parenting and infant development in rural low-income communities *Parenting: Science and Practice, 8*, 41–69.
- Bureau, J.F., Easterbrooks, M.A., & Lyons-Ruth, K. (2009). Maternal depression in infancy: Critical to children's depression in childhood and adolescence? *Development and Psychopathology, 21*(2), 519-537.
- Byrne, B. M. (1998). *Structural equation modeling with LISREL, PRELIS, and SIMPLIS: Basic concepts, applications, and programming*. Mahwah, NJ: Erlbaum.
- Campbell, R.S. & Pennebaker, J.W. (2003). The secret life of pronouns: Flexibility in writing style and physical health. *Psychological Science, 14*, 60-65.
- Carothers, S.S., Borkowski, J.G., & Whitman, T.L. (2006). Children of adolescent mothers: Exposure to negative life events and the role of social supports on their socioemotional adjustment. *Journal of Youth and Adolescence, 35*, 827-837.



- Caselles, C., & Milner, J. S. (2000). Evaluations of child transgressions, disciplinary choices, and child compliance in physically abusive and comparison mothers. *Child Abuse & Neglect*, 24, 477-491.
- Casey, B., Jones, R. M. and Hare, T. A. (2008), The adolescent brain. *Annals of the New York Academy of Sciences*, 1124, 111–126.
- Caughy, M. O., Huang, K., Huang, K.Y., Lima, J. (2009). Patterns of conflict interaction in mother- toddler dyads: Differences between depressed and non-depressed mothers. *Journal of Child and Family Studies*, 18(1), 10-20.
- Centers for Disease Control and Prevention Task Force on Community Preventive Services (2003). First reports evaluating the effectiveness of strategies for preventing violence: Early childhood home visitation. *Morbidity and Mortality Weekly Report*, RR-14, Retrieved from: [www.cdc.gov/mmwr/](http://www.cdc.gov/mmwr/).
- Chang, Y., & Fine, M. A. (2007). Modeling parenting stress trajectories among low-income young mothers across the child's second and third years: Factors accounting for stability and change. *Journal of Family Psychology*, 21(4), 584–594.
- Chang, Y., Fine, M. A., Ispa, J. M., Thornburg, K. R., Sharp, E. A., & Wolfenstein, M. (2004). Understanding parenting stress among young, low-income, African-American, first-time mothers. *Early Education and Development*, 15, 265–282.
- Chen, X.K., Wen, S.W., Fleming, N., Demissie, K., Rhoads, G., & Walker, M. (2007). Teenage pregnancy and adverse birth outcomes: a large population-based retrospective cohort study. *International Journal of Epidemiology*, 36(2), 368-373.

- Choi, H., Yamashita, T., Wada, Y., Narumoto, J., Nanri, H., Fujimori, A., et al. (2010). Factors associated with postpartum depression and abusive behavior in mothers with infants. *Psychiatry and Clinical Neurosciences*, *64*, 120–127.
- Chung, C.K. & Pennebaker, J.W. (2007). The psychological function of function words. In K. Fiedler (Ed.), *Social communication: Frontiers of social psychology* (pp 343-359). New York: Psychology Press.
- Chung, E. K., McCollum, K. F., Elo, I. T., Lee, H. J., & Culhane, J. F. (2010). Maternal depressive symptoms and infant health practices among low-income women. *Pediatrics*, *45*(1-2), 17-35.
- Civic, D., & Holt, V. L. (2000). Maternal depressive symptoms and child behavior problems in a nationally representative normal birthweight sample. *Maternal & Child Health Journal*, *4*, 215-221.
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin*, *127*, 87–127.
- Compas, B.E. (2009). Coping, regulation and development during childhood and adolescence. In E. Skinner & M. J. Zimmer-Gembeck (Eds.). *Coping and the development of regulation*. A volume for the series, R. W. Larson & L. A. Jensen (Eds.-in-Chief), *New Directions in Child and Adolescent Development*, *124* (pp. 87–99). San Francisco: Jossey-Bass.
- Connelly, C.D., & Straus, M.A. (1992). Mother's age and risk for physical abuse. *Child Abuse & Neglect*, *16*(5), 709-718.

- Conroy, S., Marks, M. N., Schacht, R., Davies, H. A., & Moran, P. (2010). The impact of maternal depression and personality disorder on early infant care. *Social Psychiatry & Psychiatric Epidemiology, 45*, 285-292.
- Copeland, E. P., & Hess, R. S. (1995). Differences in young adolescents' coping strategies based on gender and ethnicity. *Journal of Early Adolescence, 15*, 203-219.
- Cornish, A. M., McMahon, C. A., & Ungerer, J. A. (2006). Maternal depression and the experience of parenting in the second postnatal year. *Journal of reproductive and Infant Psychology, 24*, 121-132.
- Coyne, J.C., & Racioppo, M.W. (2000). Never the twain shall meet? Closing the gap between coping research and clinical intervention research. *American Psychologist, 55*(6), 655-664.
- Creasey, G., & Jarvis, P. (1994). Relationships between parenting stress and developmental functioning among 2-year-olds. *Infant Behavior and Development, 17*, 423 - 429.
- Crnic, K, Gaze, C., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behavior at age five. *Infant and Child Development, 14*, 117-132.
- Crnic, K. A., & Low, C. (2002). Everyday stresses and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting* (pp. 243–267). Mahwah, NJ: Erlbaum.
- Crouch, J. L., & Behl, L. E. (2001). Relationships among parental beliefs in corporal punishment, reported stress, and physical child abuse potential. *Child Abuse & Neglect, 25*, 413–419.
- Davidson, R. J. (1998). Anterior electrophysiological asymmetries, emotion, and depression: conceptual and methodological conundrums, *Psychophysiology, 35*, 607–614.

- Davidson, R. J. (2004). What does the prefrontal cortex "do" in affect: Perspectives in frontal EEG asymmetry research. *Biological Psychology*, *67*, 219-234.
- Davidson, R. J., Ekman, P., Saron, C. D., Senulis, J. A., & Friesen, W. V. (1990). Approach-withdrawal and cerebral asymmetry: emotional expression and brain physiology. *Journal of Personality and Social Psychology*, *58*, 330-341.
- Davidson, R. J. (2000). Affective style, psychopathology, and resilience: Brain mechanisms and plasticity. *American Psychologist*, *55*, 1196-1214.
- De Anda, D., Darroch, P., Davidson, M. & Gilly, J. (1992). Stress and coping among pregnant adolescents. *Journal of Adolescent Research*, *7*(1), 94-109.
- De Paúl, J., & Domenech, L. (2000). Childhood history of abuse and child abuse potential in adolescent mothers: A longitudinal study. *Child Abuse & Neglect*, *24*(5), 701-713.
- Deater-Deckard, K. & Scarr, S. (1996). Parenting stress among dual-earner mothers and fathers: are there gender differences? *Journal of Family Psychology* *10*, 45–59.
- Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice*, *5*, 314–332.
- Demers, I., Bernier, A., Tarabulsy, G.M., & Provost, M.A. (2010). Mind-mindedness in adult and adolescent mothers: Relations to maternal sensitivity and infant attachment. *International Journal of Behavioral Development*, *34*, 529-537.
- DePanfilis, D. (2006). *Child neglect: A guide for prevention, assessment, and intervention*. Washington, DC: U.S. Department of Health and Human Services, Administration on Children and Families, Administration for Children, Youth, and Families, Children's Bureau, Office on Child Abuse and Neglect.

- DeVito, J. (2007). Self-perceptions of parenting among adolescent mothers. *Journal of Perinatal Education, 16*(1), 16–23.
- Diaz, J., Oshana, D., & Harding, K. (2004). *Healthy Families America: 2003 annual profile of program sites*. Chicago: Prevent Child Abuse America.
- Dix, T. (1991). The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin, 120*, 3-25.
- Dix, T., Cheng, N., & Day, W. H. (2008). Connecting with parents: Mothers' depressive symptoms and responsive behaviors in the regulation of social contact by one- and young two-year-olds. *Social Development, 8*, 25-50.
- Donelan-McCall, N., Eckenrode, J., & Olds, D.L. (2009). Home visiting for the prevention of child maltreatment: lessons learned during the past 20 years. *Pediatrics Clinics of North America, 56*(2), 389-403.
- Downey, G., & Coyne, J.C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108*, 50-76.
- Dozier, M., Stoval, K. C., Albus, K. E., & Bates, B. (2001). Attachment for infants in foster care: The role of caregiver state of mind. *Child Development, 72*, 1467 – 1477.
- Dunn, B.D., Billotti, D, Murphy, M. & Dalgleish, T. (2009) The consequences of effortful emotion regulation when processing distressing material: A comparison of suppression and acceptance. *Behaviour Research and Therapy, 47*, 761 - 773.
- Dunst, C. J. & Leet, H. E. (1987). *Family resource scale*. Cambridge, MA: Brookline Books.
- Easterbrooks, M. A., Chaudhuri, J. H. & Gestsdottir, S. (2005). Patterns of emotional availability among young mothers and their infants: A dyadic, contextual analysis. *Infant Mental Health Journal, 26*, 309-326.

- Easterbrooks, M. A., Chaudhuri, J. H., Bartlett, J. D., & Copeman, A. (2011). Resilience in parenting among young mothers: Family and ecological risks and opportunities. *Children and Youth Services Review, 33*(1), 42-50.
- Eckenrode, J., Campa, M., Luckey, D.W., Henderson, C. R. Jr., Cole, R., Kitzman, H., Anson, E., Sidora-Arcoleo, K., Powers, J., & Powers, D. (2010). Long-term effects of prenatal and infancy nurse home visitation on the life course of youths: 19-year follow-up of a randomized trial. *Archives of Pediatrics and Adolescent Medicine, 164*(1), 9-15.
- Eisenberg, N., Valiente, C., & Sulik, M. J. (2009). How the study of regulation can inform the study of coping. E. Skinner & M. J. Zimmer-Gembeck (Eds.). *Coping and the development of regulation*. A volume for the series, R. W. Larson & L. A. Jensen (Eds.-in-Chief), *New directions in child and adolescent development, 124* (pp. 75–86). San Francisco: Jossey-Bass.
- Elliot, A.J. (2008). *Handbook of approach and avoidance motivation*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Field, T. (2009). Prenatal depression effects on neurobehavioral dysregulation. In B. M. Lester and J.D. Sparrow (Eds.). *Nurturing children and families: Building on the legacy of T. Berry Brazelton* (1st ed.). New York: Wiley.
- Field, T. (2010). Postpartum depression effects on early interactions, parenting, and safety practices: A review. *Infant Behavior & Development, 33*, 1–6.
- Field, T., Diego, M., & Hernandez-Reif, M. (2009). Depressed mothers' infants are less responsive to faces and voices. *Infant Behavior & Development, 32*, 239-244.

- Fuhrer, I., McMahon, C. A., & Taylor, A. J. (2009). The impact of postnatal and concurrent maternal depression on child behaviour during the early school years. *Journal of Affective Disorders, 119*, 116-123.
- Fisher, P. M., Meltzer, C. C., Price, J. C., Coleman, R. L., Ziolko, S. K., Becker, C., Moses-Kolko, E. L., Berga, S. L., Hariri, A. R. (2009). Medial prefrontal cortex 5-HT<sub>2A</sub> density is correlated with amygdala reactivity, response habituation and functional coupling, *Cerebral Cortex, 19*(11), 2499-2507.
- Folkman, S. & Moskowitz J.T. (2004). Coping: Pitfalls and promises. *Annual Review of Psychology, 55*, 745-774.
- Folkman, S. (1991). Coping across the life span: Theoretical issues. In E.M. Cummings, A.L. Greene, & K.H. Karreaker (Eds.), *Life-span developmental psychology: Perspectives on stress and coping* (pp. 3-19). Hillsdale, NJ: Lawrence Erlbaum.
- Folkman, S. (2011). Stress, health, and coping: An overview. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 3-14). New York: Oxford University Press.
- Folkman, S., & Lazarus, R. S. (1980). An analysis of coping in a middleaged community sample. *Journal of Health and Social Behavior, 21*, 219–231.
- Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization, and the development of self*. New York: Other Press.
- Forman, D. R., O'hara, M. W., Stuart, S., Gorman, L. L., Larsen, K. E., & Coy, K. C. (2007) Effective treatment for postpartum depression is not sufficient to improve the developing mother–child relationship. *Development and Psychopathology, 19*, 585-602.

- Foster, C. J., Garber, J., & Durlak, J.A. (2008). Current and past maternal depression, maternal interaction behaviors, and children's externalizing and externalizing symptoms. *Journal of Abnormal Child Psychology*, *36*, 527-537.
- Frydenberg, E. (2008). *Adolescent coping: Advances in theory. Research and applications*. London: Routledge.
- Garber, J., Braafladt, N., & Weiss, B. (1995). Affect regulation in depressed and nondepressed children and young adolescents. *Development & Psychopathology. Special Issue: Emotions in developmental psychopathology*, *7*, 93-115.
- George, C., Kaplan, N. & Main, M. (1985). *The Adult Attachment Interview*. Unpublished Manuscript, University of California at Berkeley.
- Gerstein, E. D., Crnic, K. A., Blacher, J., & Baker, B. L. (2009). Resilience and the course of daily parenting stress in families of young children with intellectual disabilities. *Journal of Intellectual Disability Research*, *53*, 981-997.
- Goldberg, J., Jacobs, F., Mistry, J., & Easterbrooks, M. A. (2009). *Massachusetts Healthy Families Evaluation-2: A Randomized Controlled Trial of a Statewide Home Visiting Program for Young Parents*. Annual Data Report to the Massachusetts Children's Trust Fund, Medford, MA: Tufts University.
- Gray, J. A. (1982). *The Neuropsychology of Anxiety: An Enquiry into the Functions of the Septo-Hippocampal System*. Oxford: Oxford University Press.
- Gray, J.A., & McNaughton, N. (2000). *The Neuropsychology of anxiety: an enquiry into the functions of the septo-hippocampal system*. Oxford: Oxford University Press.
- Gross, J.J., & Thompson, R.A. (2007). Emotion regulation: Conceptual foundations. In J.J. Gross (Ed.), *Handbook of emotion regulation* (pp. 3-24). New York, NY: Guilford Press.



- Guajardo, N. R., Snyder, G. & Petersen, R. (2009), Relationships among parenting practices, parental stress, child behaviour, and children's social-cognitive development. *Infant and Child Development*, 18(1) 37-60.
- Gunlicks-Stoessel, M. & Powers, S. I. (2009). Romantic partners' coping strategies and patterns of cortisol reactivity and recovery in response to relationship conflict. *Journal of Social and Clinical Psychology*, 18(4), 621-642.
- Hammen, C., Burge, D., & Stansbury, K. (1990). Relationship of mother and child variables to child outcomes in a high-risk sample: A causal modeling analysis. *Developmental Psychology*, 26, 24-30.
- Haskett, M. E., Smith Scott, S., Grant, R., Sabourin Ward, C., & Robinson, C. (2003). Child-related cognitions and affective functioning of physically abusive and comparison parents. *Child Abuse & Neglect*, 27, 663–686.
- Haskett, M.E., Ahern, L.S., Ward, C.S., & Allaire, J.C. (2006). Factor structure and validity of the Parenting Stress Index-Short Form. *Journal of Clinical Child and Adolescent Psychology*, 35, 302–312.
- Hess, C. R., Papas, M. A., & Black, M.M. (2002). Resilience among African American adolescent mothers: predictors of positive parenting in early infancy. *Journal of Pediatric Psychology*, 27(7), 619-629.
- Hoffman, S. (2006). *By the numbers: The public costs of teen childbearing*. Washington, DC. The National Campaign to Prevent Teen Pregnancy.
- Holton, J. K., & Harding, K. (2007). Healthy Families America: Ruminations on implementing a home visitation program to prevent child maltreatment. *Journal of Prevention & Intervention in the Community*, 34(1–2), 13–38.

- Hooley, J. M., Gruber, S. A., Parker, H., Guillaumot, J., & Rogowska, J., & Yurgelun-Todd (2009). Cortico-limbic response to personally-challenging emotional stimuli after complete recovery from major depression. *Psychiatry Research: Neuroimaging*, *171*, 106–119.
- Houshyar, H. & Kaufman, J. (2005). Resiliency in maltreated children. In S. Goldstein & R. B. Brooks. *Handbook of resilience in children* (pp. 181-202). New York: Springer.
- Hu, L. & Bentler, P.M. (1999) Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling* *6*, 1-55.
- Jacobs, F.H., Easterbrooks, M.A., Brady, A.E., & Mistry, J.M. (2005). *Healthy Families Massachusetts: Final evaluation report*. Medford, MA: Tufts University. Massachusetts Healthy Families Evaluation.
- Jaffee S. R., Caspi A., Moffitt., T. E., Belsky, J., & Silva, P. (2001). Why are children born to teen mothers at risk for adverse outcomes in young adulthood? Results from a 20-year longitudinal study. *Development and Psychopathology*, *13*, 377-397.
- Jöreskog, K. G. & Moustaki, I. (2011). Factor analysis of ordinal variables: A comparison of three approaches. *Multivariate Behavioral Research*, *36* (3), 347-387
- Jöreskog, K., & Sörbom, D. (1996). *LISREL 8: User's reference guide*. Chicago: Scientific Software International.
- Kenny, D.A. (1979). *Correlation and causality*. Wiley, New York.
- Kilmer, R.P., Cowen, E.L., & Wyman, P.A. (2001). A micro-level analysis of developmental, parenting, and family milieu variables that differentiate stress-resistant and stress-affected children, *Journal of Community Psychology*, *29* (4), 391–416.

- Kim-Cohen, J., Moffit, T. E., Taylor, A., Pawlby, S. J., & Caspi, A. (2005). Maternal depression and children's antisocial behavior: Nature and nurture effects. *Archives of general psychiatry, 62*, 173-181.
- Kisker, E.E., Paulsell, D., Love, J.M., & Raikes, H. (2002). *Pathways to quality and full implementation in Early Head Start programs*. Princeton, NJ: Mathematica Policy Research.
- Kliewer, W., Parrish, K. A., Taylor, K. W., Jackson, K., Walker, J.M., & Shivy, V. A. (2006). Socialization of coping with community violence: Influences of caregiver coaching, modeling, and family context. *Child Development, 77*, 605–623.
- Korfmacher, J., Green, B.L., Staerke, F., Peterson, C., Cook, G., Roggman, L., Faldowski, R., & Schiffman, R. (2008). Parent involvement in early childhood home visiting. *Child and Youth Care Forum, 37*, 171-196.
- Kurtz, L., & Derevensky, J. L. (1994). Adolescent motherhood: An application of the stress and coping model to child-rearing attitudes and practices. *Canadian Journal of Community Mental Health, 13*, 5-24.
- Larson, N. C. (2004). Parenting stress among adolescent mothers in the transition to adulthood. *Child and Adolescent Social Work Journal, 21*(5), 457-476.
- Lazarus R. S. (1993). Coping theory and research: past present, and future. *Psychosomatic Medicine, 55*, 234-247.
- Lazarus, R. S. (1996). Coping development and its role in the emotions. In C. Magai & S. H. Mcfadden (Eds.), *Handbook of emotion, adult development, and aging* (pp.289-306). San Diego: Academic Press.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer.

- Lazarus, R.S. (2000). Toward better research on stress and coping, *American Psychologist*, *55*, 665-673.
- Lecuyer-Maus, E. A. (2003). Stress and coping in high-risk mothers: difficult life circumstances, psychiatric mental health symptoms, education and experiences in their families of origin. *Public Health Nursing*, *20*(2), 132–145.
- Lee, Y. (2009). Early motherhood and harsh parenting: The role of human, social, and cultural capital. *Child Abuse & Neglect*, *33*(9), 625-637.
- Lester, B.M., Masten, A.S., & McEwen, B.S. (2006). Preface. *Annals of the New York Academy of Sciences*, *1094*(1), xiii–xv.
- Litt, M. D., Tennen, H., & Affleck, G. (2011). The dynamics of stress, coping and health: Assessing stress and coping processes in near real time. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 387-406). New York: Oxford University Press.
- Little, T. D., Cunningham, W. A., Shahar, G., & Widaman, K. F. (2002). To parcel or not to parcel: Exploring the question and weighing the merits. *Structural Equation Modeling*, *9*, 151-173.
- Lochman, J. E., Wells, K. C., & Murray, M. (2007). The Coping Power program: Preventive intervention at the middle school transition. In P. Tolan, J. Szapocznik, & S. Sambrano (Eds.), *Preventing youth substance abuse: Science-based programs for children and adolescents* (pp. 185-210). Washington, DC: American Psychological Association.
- Lok, S. & McMahon, C. (2006). Mothers' thoughts about their children: Links between mind-mindedness and emotional availability. *British Journal of Developmental Psychology*, *24*, 477-488.

- Losoya, S., Eisenberg, N., & Fabes, R. A. (1998). Developmental issues in the study of coping. *International Journal of Behavioral Development, 22*, 287-313.
- Lounds, J. J., Borkowski, J. G., & Whitman, T. L. (2006). The potential for child neglect: The case of adolescent mothers and their children. *Child Maltreatment, 11*(3), 281-294.
- Love, J.M., Kisker, E., Ross, C., Raikes, H., Constantine, J., Boller, K. et al. (2005). The effectiveness of Early Head Start for 3-year-old children and their parents: Lessons for policy and programs. *Developmental Psychology, 41*(6), 885-901.
- Lugo-Gil, J., & Tamis-LeMonda, C. S. (2008). Family resources and parenting quality: Links to children's cognitive development across the first three years. *Child Development, 79*(4), 1065-1085.
- Luthar, S. S., Sawyer, J. A., & Brown, P. J. (2006). Conceptual issues in studies of resilience. past, present, and future research. *Annals of the New York Academy of Sciences, 1094*(1), 105-115.
- Luthar, S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*, 543-562.
- Luthar, S.S. (Ed.) (2003). *Resilience and vulnerability: Adaptation in the context of childhood adversities*. Cambridge University Press.
- Lutoma, I., Tamminen, T., Kaukonen, P., Laippala, P., Puura, K., Salmelin, R., & Almqvist, F. (2001). Longitudinal study of maternal depressive symptoms and child well-being. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*, 1367-1374.
- Lyons-Ruth, K. & Easterbrooks, M.A. (2006). Assessing mediated models of family change in response to infant home visiting: A two-phase longitudinal analysis. *Infant Mental Health Journal, 27*(1), 55-69.

- MacKenzie, M. J., Brooks-Gunn, J., & Waldfogel, J. (2011). Who spansks infants and toddlers? Evidence from the Fragile Families and Child Well-Being Study. *Children and Youth Services Review, 33*(8), 1364-1373.
- Marsh, D.R, Schroeder, D. G., Dearden, , K. A., Sternin, J., & Sternin, M. (2004). The power of positive deviance. *British Medical Journal, 329*, 1177-1179.
- Martins, C., & Gaffan, E.A. (2000). Effects of early maternal depression on patterns of infant–mother attachment: A meta-analytic investigation. *Journal of Child Psychology and Psychiatry, 41*, 737–746.
- Masten, A.S. (2001). Ordinary magic. Resilience processes in development. *American Psychologist, 56*, 227-238.
- Matthews, S, Simmons, A, Strigo, I, Gianaros, P, Yang, & T, Paulus, M. (2009). Inhibition-related activity in subgenual cingulate is associated with symptom severity in major depression. *Psychiatry Research: Neuroimaging, 172*(1), 1-6
- Mauss, I. B., Bunge, S. A., & Gross, J. J. (2008). Culture and automatic emotion regulation. In S. Ismer, S. Jung, S. Kronast, C. van Scheve, & M. Vanderkerckhove (Eds.), *Regulating emotions: Culture, social necessity and biological inheritance* (pp. 39-60). London: Blackwell Publishing.
- McDonell, J. R., Limber, S. P., & Connor-Godbey, J. (2007). Pathways teen mother support project: Longitudinal findings. *Children and Youth Services Review, 29*, 840-855.
- McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. *Psychological Methods, 1*(1), 30-46

- McKelvey, L., Fitzgerald, H., Schiffman, R., & von Eye, A. (2002). Family stress and parent-infant interaction: The mediating role of coping. *Infant Mental Health Journal, 23*, 164-181.
- McLoyd, V. (1990). The impact of economic hardship on black families and children: Psychological distress, parenting, and socio-emotional development. *Child Development, 61*, 311-346.
- McLoyd, V. (1998). Socioeconomic disadvantage and child development. *American Psychologist, 53*, 185-204.
- McPherson, A.V., Lewis, K.M., Lynn, A.E., Haskett, M.E., & Behrend, T.S. (2009). Predictors of parenting stress for abusive and nonabusive mothers. *Journal of Child and Family Studies, 18*, 61-69.
- Meade, C. S., Kershaw, T. S., & Ickovics, J.R. (2008). The intergenerational cycle of teenage motherhood: an ecological approach. *Health Psychology, 27*(4), 419-429.
- Miller, P. A., Kliwer, W., & Partch, J. (2010). Socialization of children's recall and use of strategies for coping with interparental conflict. *Journal of Child and Family Studies, 19*(4), 429-443.
- Mollborn, S. & Morningstar, E. (2009). Investigating the relationship between teenage childbearing and psychological distress using longitudinal evidence. *Journal of Health and Social Behavior, 50*(3), 310-326.
- Moore, M. R., & Brooks-Gunn, J. (2002). Adolescent parenthood. In M. H. Bornstein (Ed.), *Handbook of parenting: Being and becoming a parent* (Vol. 3, pp. 173-214). Mahwah, NJ: Lawrence Erlbaum.

- Murray, L., Fiori-Cowley, A., Hooper, R., & Cooper, P. (1996). The impact of postnatal depression and associated adversity on early mother-infant interactions and later infant outcome. *Child Development, 67*, 2512-2626.
- Myors, K., Johnson, M., & Langdon, R. (2001). Coping styles of pregnant adolescents. *Public Health Nursing, 18*(1), 24-32.
- Newman, M.L., Pennebaker, J.W., Berry, D.S., & Richards, J.M. (2003). Lying words: Predicting deception from linguistic style. *Personality and Social Psychology Bulletin, 29*, 665-675.
- NICHD Early Child Care Research Network. (1999). Chronicity of maternal depression symptoms, maternal sensitivity, and child functioning at 36 months. *Developmental Psychology, 35*, 1297-1310.
- Noel, M., Peterson, C., & Jesso, B. (2008). The relationship of parenting stress and child temperament to language development among economically disadvantaged preschoolers. *Journal of Child Language, 35*, 823-843.
- Noria, C. W., Weed, K., & Keogh, D. A. (2007). The fate of adolescent mothers. In J. G. Borkowski, J. R. Farris, T. L. Whitman, S. S. Carothers, K. Weed, & D. A. Keogh (Eds.), *Risk and resilience: Adolescent mothers and their children grow up* (pp.35-68). Mahway, NJ: Lawrence Erlbaum.
- Olds, D., Kitzman, H., Cole, R., & Robinson, J. (1997). Theoretical and empirical foundations of a program of home visitation for pregnant women and parents of young children. *Journal of Community Psychology, 25*, 9-25.



- Olds, D.L., Kitzman, H., Cole, R., Robinson, J., Sidora, K., Luckey, D.W. et al. (2004). Effects of nurse home-visiting on maternal life course and child development: Age 6 follow-up results of a randomized trial. *Pediatrics*, *114*(6), 1550-1559.
- Osofsky, J. D., Hann, D. M. & Peebles, C. (1993). Adolescent parenthood: Risk and opportunities for parents and infants. In C. H. Zeanah (Ed.), *Handbook of infant mental health* (pp.106-119). New York: Guilford.
- Panzarine, S., Slater, E., & Sharps, P. (1995). Coping, social support, and depressive symptoms in adolescent mothers. *Journal of Adolescent Health*, *17*(2), 113-119.
- Paris, R., Bolton, R. E., & Weinberg, M. K. (2009). Postpartum depression, suicidality, and mother-infant interactions. *Archive of Women's Mental Health*, *12*, 309-321.
- Passino, A. W., Whitman, T. L., Borkowski, J. G., Schellenbach, C. J., Maxwell, S., Keogh, D., & Rellinger, E. (1993). Personal adjustment during pregnancy and adolescent parenting. *Adolescence*, *28*, 97 -122.
- Patterson, J. M., & McCubbin, H. I. (1987). A-Cope: Adolescent coping orientation for problem experiences. In H. I. McCubbin, & A. I. Thompson (Eds.), *Family assessment inventories for research and practice* (pp. 225-243.) Madison, WI: The University of Wisconsin-Madison.
- Paulsell, D., Avellar, S., Sama Martin, E., & Del Grosso, P. (2010). *Home Visiting Evidence of Effectiveness Review: Executive Summary*. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. Washington, DC. Retrieved from [http://homvee.acf.hhs.gov/HomVEE\\_Executive\\_Summary.pdf](http://homvee.acf.hhs.gov/HomVEE_Executive_Summary.pdf)

- Pinderhughes, E. E., Dodge, K. A., Bates, J. E., Pettit, G. S., & Zelli, A. (2000). Discipline responses: Influences of parents' socioeconomic status, ethnicity, beliefs about parenting, stress, and cognitive emotional processes. *Journal of Family Psychology, 14*, 380-400.
- Pottie, C., & Ingram, K. (2008). Daily stress, coping, and well-being in parents of children with autism: A multilevel modeling approach. *Journal of Family Psychology, 22*(6), 855-864.
- Powers, S.I., Battle, C. L., Dorta, K., & Welsh, D. P. (2010). Adolescents' submission and conflict behaviors with mothers predicts current and future internalizing problems. *Research in Human Development, 7*(4), 257–273.
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Radloff, L. S., & Locke, B. Z. (1986). The Community Mental Health Assessment Survey and the CES-D scale. In M. Weissman, J. Myers, & C. Ross (Eds.), *Community surveys*. New Brunswick, NJ: Rutgers University Press.
- Radloff, L.S. (1991). The use of the Center for Epidemiologic Studies Depression Scale in adolescents and young adults. *Journal of Youth and Adolescence, 20*(2), 149–166.
- Raikes, H. A., & Thompson, R. A. (2005). Efficacy and social support as predictors of parenting stress among families in poverty. *Infant Mental Health Journal, 26*, 177-190.
- Reid, S.C, Kauer, S.D., Dudgeon, P., Sanci, L.A., Shrier, L.A. and Patton, G.C. (2009) A mobile phone program to track young people's experiences of mood, stress and coping: Development and testing of the mobiletype program, *Social Psychiatry and Psychiatric Epidemiology, 44*(6), 501-507.

- Reitman, D., Currier, R.O., Hupp, S.D.A, Rhode, P.C., Murphy, M.A., O'Callaghan, P.M. (2001) Psychometric characteristics of the parenting scale in a head start population. *Journal of Clinical Child Psychology, 30*, 514–524.
- Reitman, D.R., Currier, R.O., & Stickle, T.R. (2002). A critical evaluation of the Parenting Stress Index-Short Form (PSI-SF) in a Head Start population. *Journal of Clinical Child and Adolescent Psychology, 31*, 384–392.
- Richards, J., Papworth, M., Corbett, S., & Good, J. (2007). Adolescent motherhood: A Q-methodological re-evaluation of psychological and social outcomes. *Journal of Community & Applied Social Psychology, 17*(5) 347-362.
- Roesch, S.C., Aldridge, A.A., Stocking, S.N., Villodas, F., Leung, Q., Bartley, C.E., & Black, L.J. (2010). Multilevel factor analysis and structural equation modeling of daily diary coping data: Modeling trait and state variation. *Multivariate Behavioral Research, 5*, 767-789.
- Rutherford, H.J., & Lindell, A.K. (2011). More than evaluation: Lateralization of the neural substrates supporting approach and avoidance motivational systems. *Emotion Review, 3* (3), 347-348.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences, 1094*(1), 1-12.
- Rutter, M. (2007). Resilience, competence and coping. *Child Abuse and Neglect, 31*(3), 205-209.
- Savio Beers, L.A., Hollo, R.E. (2009). Approaching the adolescent-headed family: a review of teen parenting. *Current Problems in Pediatric & Adolescent Health Care, 39*(9), 216-233.

- Schneider, M.L., Moore, C.F., Kraemer, G.W., Roberts, A.D., & DeJesus, O.T. (2002). The impact of prenatal stress, fetal alcohol exposure, or both on development: perspectives from a primate model. *Psychoneuroendocrinology*, 27, 285-298.
- Schoon, I. (2006). *Risk and Resilience. Adaptations in changing times*. Cambridge University Press.
- Schwarzer, R., & Schwarzer, C. (1996). A critical survey of coping instruments. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: Theory, research and applications* (pp. 107-132). New York: Wiley.
- Secco M, Atech C, Woodgate R, & Moffatt M. (2002). Perceived and performed infant care competence of younger and older adolescent mothers. *Issues in Comprehensive Pediatric Nursing*, 25, 97–112
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. New York: Guilford Press.
- Seiffge-Krenke, I. (1995). *Stress, Coping and Relationships in Adolescence*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Sepa, A., Frodi, A., & Ludvigsson, J. (2004). Psychosocial correlates of parenting stress, lack of support and lack of confidence - A study of all babies in Southeast Sweden (ABIS). *Scandinavian Journal of Psychology*, 45, 167-177.
- Sharp, C., & Fonagy, P. (2008). The parent's capacity to treat the child as a psychological agent: Constructs, measures and implications for developmental psychopathology. *Social Development*, 17(3), 737-754.

- Sharp, C., Fonagy, P., & Goodyer, I. M. (2006). Imagining your child's mind: Psychosocial adjustment and mothers' ability to predict their children's attributional response styles. *British Journal of Developmental Psychology, 24*, 197–214.
- Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual Review of Clinical Psychology, 4*, 1–32.
- Sidebotham, P., & Golding, J. (2001). Child maltreatment in the “children of the nineties”: A longitudinal study of parental risk factors. *Child Abuse & Neglect, 25*, 1177-1200.
- Sidebotham, P., & Heron, J. (2006). Child maltreatment in the "children of the nineties": A cohort study of risk factors. *Child Abuse and Neglect, 30*(5), 497-522.
- Silver, E. J., Heneghan, A. H., Bauman, L. J., & Stein, R. E. K. (2006). The relationship of depressive symptoms to parenting competence and social support in inner-city mothers of young children. *Maternal and Child Health Journal, 10*, 105-112.
- Skinner, E. A., & Edge, K. (1998). Reflections on coping and development across the lifespan. *International Journal of Behavioral Development, 22*, 357-366.
- Skinner, E. A., & Zimmer-Gembeck M. J. (2009). Introduction. In E. A. Skinner & M. J. Zimmer-Gembeck (Eds.), *Coping and the development of regulation*. A volume for the series, R. W. Larson & L. A. Jensen (Eds.-in-Chief), *New Directions for Child and Adolescent Development, 124* (pp. 1–4). San Francisco: Jossey-Bass.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2007). The development of coping. *Annual Review of Psychology, 58*, 119-144.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2009). Challenges to the developmental study of coping. In E. Skinner & M. Zimmer-Gembeck (Eds.). *Coping and the development of*

- regulation*. A volume for the series, R. W. Larson & L. A. Jensen (Eds.-in-Chief), *New directions in child and adolescent development* (pp. 5-17). San Francisco: Jossey-Bass.
- Skinner, E. A., & Zimmer-Gembeck, M. J. (2011). Perceived control and the development of coping. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 35-63). New York: Oxford University Press.
- Skinner, E., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin*, 129, 216-269.
- Slade, A., Grienenberger, J., Bernbach, E., Levy, D., & Locker, A. (2005) Maternal reflective functioning and attachment: Considering the transmission gap. *Attachment and Human Development*, 7, 283-292.
- Somerfield, M., & McCrae, R. (2000). Stress and coping research: Methodological challenges, theoretical advances, and clinical applications. *American Psychologist*, 55(6), 620-625.
- Sowell, E.R., Thompson, P.M., Holmes, C.J., Jernigan, T.L., & Toga, A.W. (1999). In vivo evidence for post-adolescent brain maturation in frontal and striatal regions. *Nature Neuroscience*, 2(10), 859-861.
- Stanton, A. L. (2011). Regulating emotions during stressful experiences: The adaptive utility of coping through emotional approach. In S. Folkman (Ed.), *The Oxford handbook of stress, health, and coping* (pp. 369-386). New York: Oxford University Press.
- Stanton, A. L., Parsa, A., & Austenfeld, J. L. (2002). The adaptive potential of coping through emotional approach. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 148-158). New York: Oxford University Press.

- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences*, 9, 69-74.
- Stern, M. & Aracelly, A. (1992). Pregnant and parenting adolescents: A comparative analysis of coping response and psychosocial adjustment. *Journal of Adolescent Research*, 7(4), 469-493.
- Stier, D. M., Leventhal, J. M., Berg, A. T., Johnson, L., & Mezger, J. (1993). Are children born to young mothers at increased risk of maltreatment? *Pediatrics*, 91(3), 642-648.
- Stone, A.A., & Neale, J.M. (1984). A new measure of daily coping: Development and preliminary results. *Journal of Personality and Social Psychology*, 46, 892-906.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Grounded theory, procedures and techniques*. Newbury Park, CA: Sage.
- Tamis-Lamonda, C. S., Shannon, J., & Spellman, M. (2002). Low-income adolescent mothers' knowledge about domains of child development. *Infant Mental Health Journal*, 23(1-2), 88-103.
- Teasdale, J. D., Moore, R. G., Hayhurst, H., Pope, M., Williams, S., & Segal, Z. V. (2002). Metacognitive awareness and prevention of relapse in depression: Empirical evidence. *Journal of Consulting and Clinical Psychology*, 70, 275-287.
- Tennen, H., Affleck, G., Armeli, S., & Carney, M.A. (2000). A daily process approach to coping: Linking theory, research and practice. *American Psychologist*, 55, 626-636.
- Ungar, M. (2004). *Nurturing hidden resilience in troubled youth*. Toronto: University of Toronto Press.

- Urry, H. L., Nitschke, J. B., Dolski, I., Jackson, D. C., Dalton, K. M., Mueller, C. J., Rosenkranz, M. A., Ryff, C. D., Singer, B. H., & Davidson, R. J. (2004). Making a life worth living: Neural correlates of well-being. *Psychological Science, 15*, 367-372.
- Urry, H.L. (2009). Using reappraisal to regulate unpleasant emotional episodes: Goals and timing matter. *Emotion, 9*, 782-797.
- Urry, H.L., van Reekum, C.M., Johnstone, T., Kalin, N.H., Thurow, M.E., Schaefer, H.S., Jackson, C.A., Frye, C.J., Greischar, L.L., Alexander, A.L., & Davidson, R.J. (2006). Amygdala and ventromedial prefrontal cortex are inversely coupled during regulation of negative affect and predict the diurnal pattern of cortisol secretion among older adults. *Journal of Neuroscience, 26*, 4415-4425.
- van Doesum, K. T. M., Hosman, C. M. H., Riksen-Walraven, J. M. A., & Hoefnagels, C. (2007). Correlates of depressed mothers' sensitivity towards their infants: the role of maternal, child, and contextual characteristics *Journal of the American Academy of Child & Adolescent Psychiatry, 46*, 747 - 756.
- Van Horn, M.L., Bellis, J.M., Snyder, S.W. (2001). Family resource scale—Revised: Psychometrics and validation of a measure of family resources in a sample of low-income families. *Journal of Psychoeducational Assessment, 19*, 54–68.
- Vashchenko, M., Lambidoni, E., & Brody, L.R. (2007). Late adolescents' coping styles in narratives of interpersonal conflict and intrapersonal stressors. *Clinical Social Work Journal, 35*(4), 245-255.
- Vasquez, E., Pitts, K. (2006). Red flags during home visitation: Infants and toddlers. *Journal of Community Health Nursing, 23*(2), 123-131.



- Wadsworth, M. E., Santiago, C. D., Einhorn, L., Moran, E. G., Rienks, S., & Markman, H. J. (2011). Preliminary efficacy of an intervention to reduce psychosocial stress and improve coping in low-income families. *American Journal of Community Psychology, 48*(3-4), 257-271.
- Weinberg, M. K., Tronick, E. Z., Beeghly, M., Olson, K. L., Kernan, H., & Riley, J. A.. (2001). Subsyndromal depressive symptoms and major depression in postpartum women. *American Journal of Orthopsychiatry, 71*, 87-97.
- Weissman, M. M., Feder, A., Pilowsky, D. J., Olfson, M., Fuentes, M., Blanco, C., Lantigua, R., Gameroff, M. J., & Shea, S. (2004). Depressed mothers coming to primary care: maternal reports of problems with their children. *Journal of Affective Disorder, 78*, 93–100.
- Whitman, T. L., Borkowski, J. G., Keogh, D. A., & Weed, K. (Eds.) (2001). *Interwoven lives: Adolescent mothers and their children*. Mahwah, NJ: Lawrence Erlbaum.
- Whittle, S., Yap, M. B., Yucel, M., Fornito, A., Simmons, J. G., Barrett, A. et al. (2008). Prefrontal and amygdala volumes are related to adolescents' affective behaviors during parent-adolescent interactions. *Proceedings of the National Academy of Sciences of the United States of America, 105*, 3652-3657.
- Wolchik, S.A. & Sandler, I.N. (1997). *Handbook of children's coping: Linking theory and intervention*. New York: Plenum Press.
- Wulczyn, F. (2009). Epidemiological perspectives on maltreatment prevention. *Future of Children Journal, 19*(2), 39-66.
- Yates, T.M., Egeland, B., Sroufe, L.A. (2003). Rethinking resilience: A developmental process perspective. In: Luthar S.S. (Ed.) *Resilience and vulnerability: Adaptation in the context of childhood adversities*. New York, NY: Cambridge University Press; 243-266.

- Zalewski, M., Lengua, L. J., Wilson, A. C., Trancik, A. and Bazinet, A. (2011), Emotion regulation profiles, temperament, and adjustment problems in preadolescents. *Child Development, 82*, 951–966.
- Zelenko MA, Huffman L, Lock J, Kennedy Q, Steiner H. (2001). Poor adolescent expectant mothers: can we assess their potential for child abuse? *Journal of Adolescent Health, 29*(4), 271-278.
- Zuckerman, B., Bauchner, H., Parker, S., & Cabral, H. (1990). Maternal depressive symptoms during pregnancy, and newborn irritability. *Journal of Developmental and Behavioral Pediatrics, 11*, 190-194.
- Zuravin, S. J., & DiBlasio, F. A. (1992). Child-neglecting adolescent mothers: How do they differ from their nonmaltreating counterparts? *Journal of Interpersonal Violence, 7*(4), 471-489.

Table 1

*Demographic Characteristics of the Participants*

	MHFE Category (%)/Sample Mean (Standard Deviation; Range)	HVS Category (%)/Sample Mean (Standard Deviation)	RIO Category (%)/Sample Mean (Standard Deviation)	$\chi^2/t\text{-value (df)}$
Age at birth of the child	18.80 (1.30) range 15.83-21.33	18.85 (1.30)	18.74 (1.32)	$t(157)=0.57, p=.569$
Age at T2 interview	19.79 (1.37) range 16.75-22.75	19.91 (1.40)	19.66 (1.35)	$t(158)=1.19, p=.236$
Baby age at T2 Intake (months)	10.94 (5.26) range 1.35-27.48	11.61 (5.33)	10.28 (5.13)	$t(158)=1.61, p=.109$
Baby age at T2 RI (months)	11.84 (5.48) range 1.81-27.94	12.53 (5.62)	11.14 (5.28)	$t(158)=1.62, p=.109$
Baby Sex				$\chi^2(1)=2.68, p=.102$
Boy	47%	40%	54%	
Girl	53%	60%	46%	
Race (Census categories)				$\chi^2(8)=5.92, p=.656$
Hispanic White	3.8%	3.8%	3.8%	
Hispanic Black	1.9%	1.3%	2.5%	
Hispanic Amer Indian/Alask Native	1.3%	1.3%	1.3%	
Hispanic Multiracial/Multiethnic	1.3%	1.3%	1.3%	
Non-Hispanic White	36.9%	32.5%	41.3%	
Non-Hispanic Black	20.0%	21.3%	18.8%	
Non-Hispanic Asian	3.1%	2.5%	3.8%	
Non-Hisp. Multiracial/Multiethnic	7.5%	5.0%	10.0%	
Hispanic Only	24.4%	31.3%	17.5%	

Place of birth				$\chi^2(2)=8.10, p=.017$
Massachusetts				
US/Not Massachusetts	71.9%	75.0%	69.6%	
Outside the United States, including Puerto Rico	13.1%	6.3%	20.3%	
	14.4%	18.8%	10.1%	
Preferred Language				$\chi^2(3)=2.23, p=.526$
English	80.0%	77.2%	84.8%	
Spanish	1.9%	2.5%	1.3%	
English and other language(s)	16.3%	19.0%	13.9%	
Other Language(s)	0.6%	1.3%	0%	
Living Arrangements				$\chi^2(6)=8.57, p=.200$
Alone	11.9%	14.1%	10.5%	
With Partner	10.0%	7.7%	13.2%	
With Adult Relative/Guardian	43.8%	44.9%	46.1%	
With Partner and Adult Relative	20.6%	20.5%	22.4%	
Institution	2.5%	5.1%	.0%	
With Partner and Peers	3.1%	1.3%	5.3%	
Other	4.4%	6.4%	2.6%	
Last grade completed				$\chi^2(2)=0.61, p=.739$
below 12th Grade	39.0%	41.3%	38.7%	
12th Grade/GED	48.8%	49.3%	54.7%	
Any Year of College	7.6%	9.3%	6.7%	
Occupation				$\chi^2(3)=1.13, p=.770$
Not employed, not in school	36.3%	41.0%	34.2%	
Not employed, in school	37.5%	37.2%	40.8%	
Employed, in school	8.1%	9.0%	7.9%	
Employed, not in school	14.4%	12.8%	17.1%	
Relationship Status				$\chi^2(2)=0.23, p=.892$
Single	34.4%	37.2%	34.2%	
Dating	23.1%	24.4%	23.7%	
Committed Relationship/Married	38.8%	38.5%	42.1%	

Table 2.

*Codes Used to Assess Dimensions of Coping and Inter-Rater Reliability Statistics.*

Codes	Definition	Inter-rater Reliability Statistic
<i>Categorical Codes</i>		Cohen's Kappa
Stressor Type	The stressful situation described by the participant pertains to 1 = Child (child's challenging behavior or concerns about child's health); 2= Parenting Task (challenges balancing the role of being a parent with personal needs); 3= Other (challenging behaviors of other people or financial challenges)	.88
Prevent	Participant describes the stressful situation as 0= Not preventable 1= Preventable	.91
<i>Continuous Codes and Ratings</i>		Intraclass Correlation Coefficients
Emotion Word Count	References to affective states (emotion-related process nouns, adjectives and verbs)	.94
Cognition Word Count	References to thought processes (nouns, adjectives and verbs describing mental processes, e.g., thinking, believing, learning, remembering, consideration, making a distinction, etc.)	.86
Self Blaming	The degree to which the interview is characterized by the following (0=not at all; 3= highly): • Blaming remarks about self; • Negative self-associations	.78
Defensiveness	The degree to which the interview is characterized by the following (0=not at all; 3= highly): • Resentful, blaming remarks about others; • Focus on own distress; lack compassion • Preoccupation with power disadvantage.	.84
Acceptance	The degree to which the interview is characterized by the following (0=not at all; 3= highly): • Appreciative, positive remarks about others; • Empathy, compassion; • Reflective perspective-taking, seeing psychological point of view of others.	.79

Help Available	The degree to which the interview is characterized by the following (0=not at all; 3=highly):	.81
	• Help/support of others is available and/or sought	
Help Not Available	The degree to which the interview is characterized by the following (0=not at all; 3= highly):	.81
	• Help/support of others is not available and not sought	
Submission	The degree to which the interview is characterized by the following (0=not at all; 3= highly):	.83
	• Giving up or avoiding the stressor	
	• Focus on lacking resources/options for coping	
	• Doubting capacity to deal with the stressor	
Engagement	The degree to which the interview is characterized by the following (0=not at all; 3= highly):	.69
	• Persisting in the face of challenge	
	• Reappraising/reinterpreting the situation as a way to continue to feel in control	
	• Confidence and perceived self-mastery	

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Table 3.

*Distribution of Ratings for Each Global Code in the Sample*

	Not at all	Somewhat	Moderately	Highly
Self Blame	61%	26%	11%	2%
Defensiveness	30%	23%	23%	24%
Acceptance	22%	33%	33%	12%
Help Available	39%	31%	20%	10%
Help Unavailable	54%	26%	13%	7%
Submission	24%	31%	26%	18%
Engagement	7%	30%	44%	19%

Table 4.

*Summary of Intercorrelations for Codes Used to Assess Dimensions of Coping*

	Self Blame	Defensive -ness	Acceptance	Help Available	Help Unavailable	Withdrawal/ Submission	Persistence/ Participation	Ratio Cognition	Ratio Emotion
Self Blame	1								
Defensiveness	.070	1							
Acceptance	.153	-.345**	1						
Help Available	-.069	-.192*	.070	1					
Help Unavailable	.122	.379**	-.089	-.032	1				
Submission	.180*	.425**	-.220**	-.014	.198*	1			
Engagement	.033	-.204**	.388**	.188*	.034	-.487**	1		
Ratio Cognition	.031	-.169*	.135	.051	-.159*	.002	.125	1	
Ratio Emotion	-.007	-.054	.042	-.111	-.176*	-.027	.020	-.091	1

Key: \*p<.05; \*\*p<.01; \*\*\*p<.001



Table 5.

*Summary of Descriptive Statistics for Levels of Risk and the Quality of Parenting*

	MHFE Category	HVS Category	RIO Category	$\chi^2$ /t-value (df)
<i>Psychological Risk</i>				
Age at T2 Research Interview				
Sample Mean (SD)	19.79 (1.37)	19.91 (1.40)	19.66(1.35)	$t(158)=1.19, p=.236$
Younger than 19	34%	29%	40%	$\chi^2(1)=2.24, p=.134$
19 or older	66%	71%	60%	
Depressive Symptomatology				
Sample Mean (SD)	14.06 (10.64)	12.71 (8.85)	15.41(12.02)	$t(158)=-1.61, p=.109$
Non-clinical Range	61%	62%	60%	$\chi^2(1)=.10, p=.746$
Clinical Range	39%	38%	40%	
Parenting Stress				
Sample Mean (SD)	74.01 (15.37)	71.60 (15.35)	76.37 (15.13)	$t(140)=-1.87, p=.064$
Non-clinical Range	84%	90%	79%	$\chi^2(1)=3.18, p=.074$
Clinical Range	16%	10%	21%	
<i>Financial Risk</i>				
Difficulties in Covering Expenses				
No Difficulties	8%	9%	8%	$\chi^2(3)=3.41, p=.333$
Very Few Difficulties	25%	24%	26%	
Some Difficulties	53%	58%	47%	
Major Difficulties	14%	9%	18%	
Receipt of Public Assistance				
None	3%	3%	4%	$\chi^2(3)=0.67, p=.879$
1-2 programs	60%	57%	62%	
3-4 programs	31%	33%	29%	
5-6 programs	6%	7%	5%	
Family Resources	112.16(17.68)	112.73(16.44)	111.59(12.08)	$t(158)=0.406, p=.685$

*Parenting Outcome*

## Sensitivity (Teaching Task)

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Sample Mean ( <i>SD</i> )	4.60(1.29)	4.48(1.26)	4.71(1.31)	$t(149)=-1.102, p=.272$
Highest risk	23%	25%	20%	$\chi^2(3)=1.20, p=.752$
Moderate risk	54%	53%	55%	
Non-risk	15%	15%	15%	
Optimal	9%	7%	10%	

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Table 6.

*Summary of Intercorrelations Among Key Study Variables*

	Age at T2 Interview	CES-D (Clinical Cutoff)	PSI (Clinical Cutoff)	FRS	Public funds	Financial Difficulties	Coping	Maternal Sensitivity (Teaching Task)
Age at T2 Interview	1							
CES-D (Clinical Cutoff)	.088	1						
PSI (Clinical Cutoff)	.073	.190*	1					
FRS	-.081	-.437**	-.109	1				
Public funds	.182*	-.093	-.008	-.090	1			
Financial Difficulties	.093	.280**	.168	-.468**	.034	1		
Coping	.032	.044	-.126	-.005	-.071	.074	1	
Maternal Sensitivity (Teaching Task)	.168*	-.032	.009	-.090	-.109	.055	.060	1

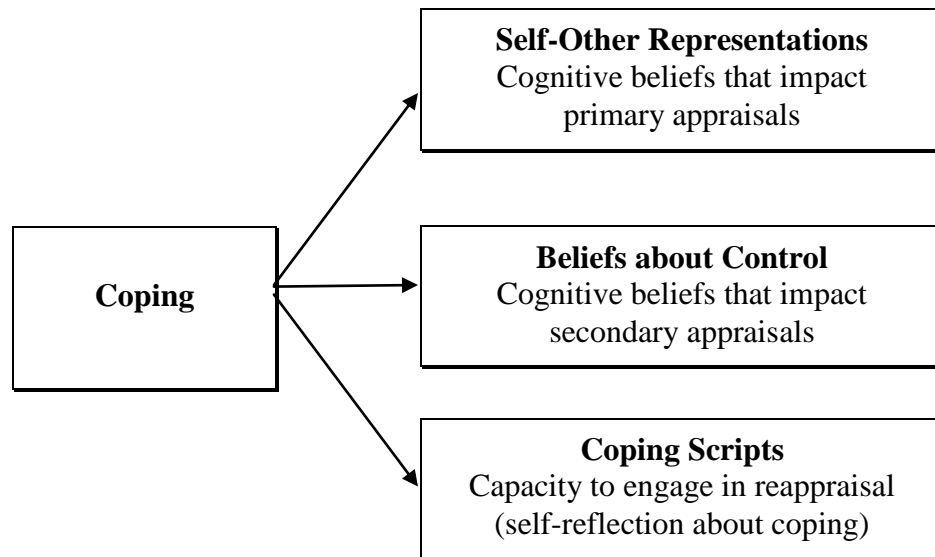
Key: \*p<.05; \*\*p<.01; \*\*\*p<.001

Table 7.

*Parameter Estimates, p-values, and Goodness-of-fit Tests for a Nested Taxonomy of Regression Models that Describe the Relationship between Maternal Sensitivity and Predictor and Moderator Variables (n=125).*

	Models			
	M1	M2	M3	M4
Intercept	3.01		4.21*	4.09*
Program vs. Control	0.33			
Age at T2 Interview	0.21**		0.18**	0.15*
CES-D (Clinical Cutoff)	-0.58*		-0.63*	-0.53*
PSI (Clinical Cutoff)	-0.09			
FRS	-0.01*		-0.02*	-0.02*
Public funds	-0.19*		-0.15	
Financial Difficulties	0.12			
Coping		0.09	-4.16	-2.37**
Coping X Age at T2 Interview			0.05	
Coping X CES-D (Clinical Cutoff)			0.34	
Coping X FRS			0.03**	0.02**
Coping X Public funds			-0.01	
R <sup>2</sup>	.132*	.004	.198**	.165***
df(Residual)	117	123	115	115
ΔR <sup>2</sup>		.004	.194***	-.034

Key: \*p<.05; \*\*p<.01; \*\*\*p<.001



*Figure 1.* Conceptual model of the structure of coping.

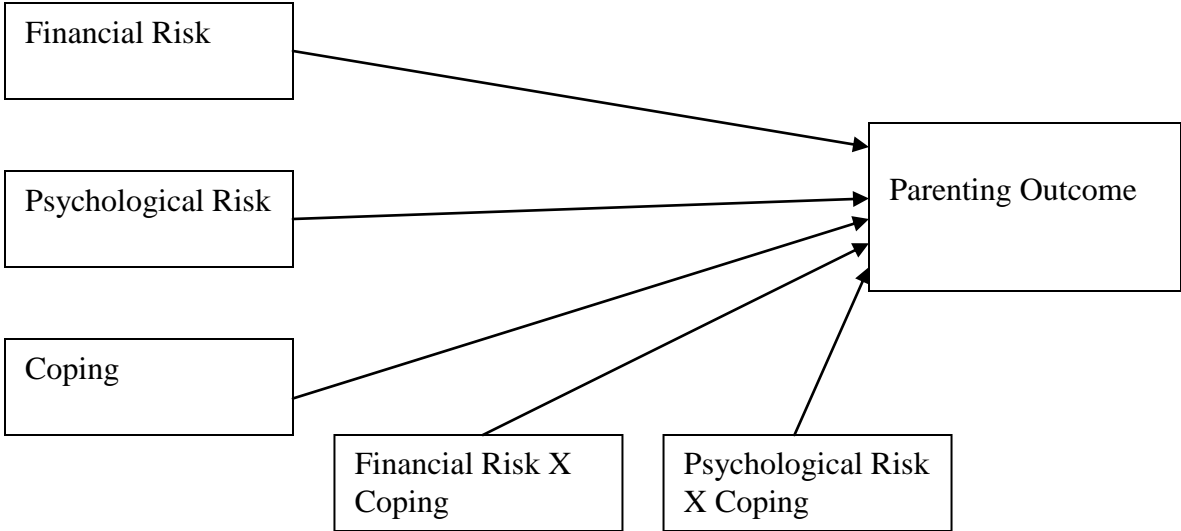


Figure 2. Conceptual model of the direct effects of risk factors and moderating effect of coping on parenting outcomes of young mothers.

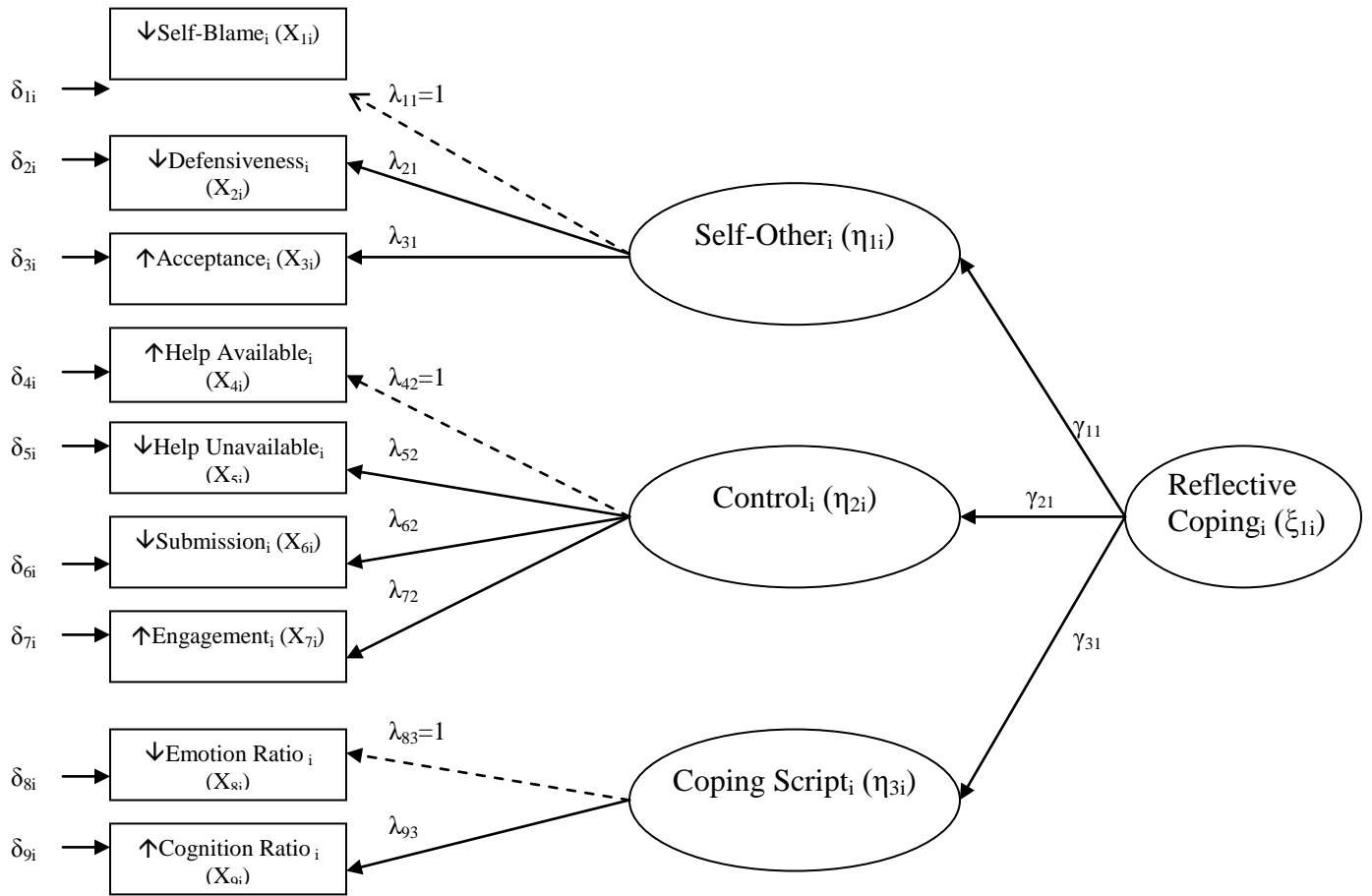


Figure 3. The initially hypothesized second-order model of factorial structure of the reflective coping instrument.

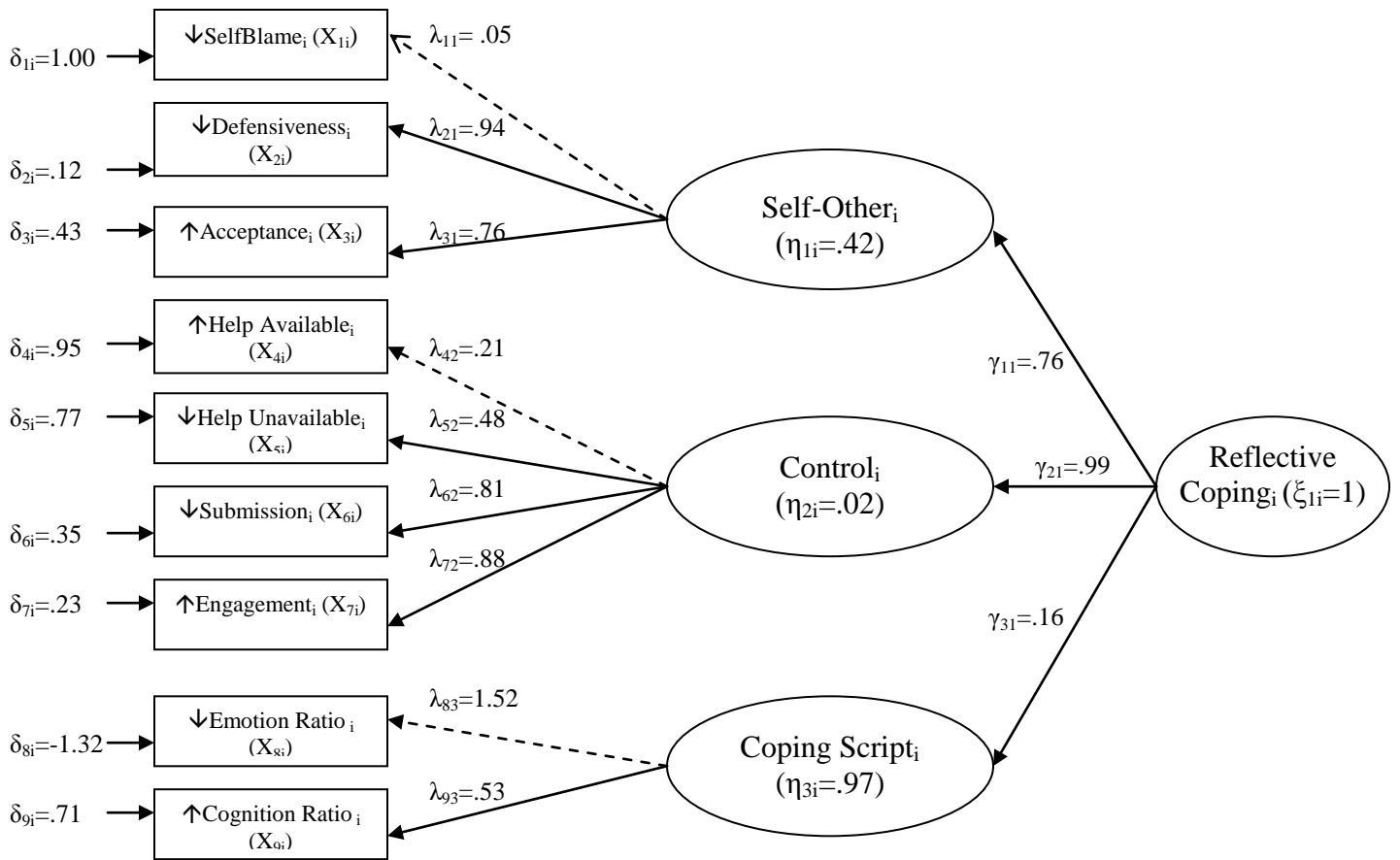


Figure 4. Completely standardized solution for the initially hypothesized second-order model of Coping.



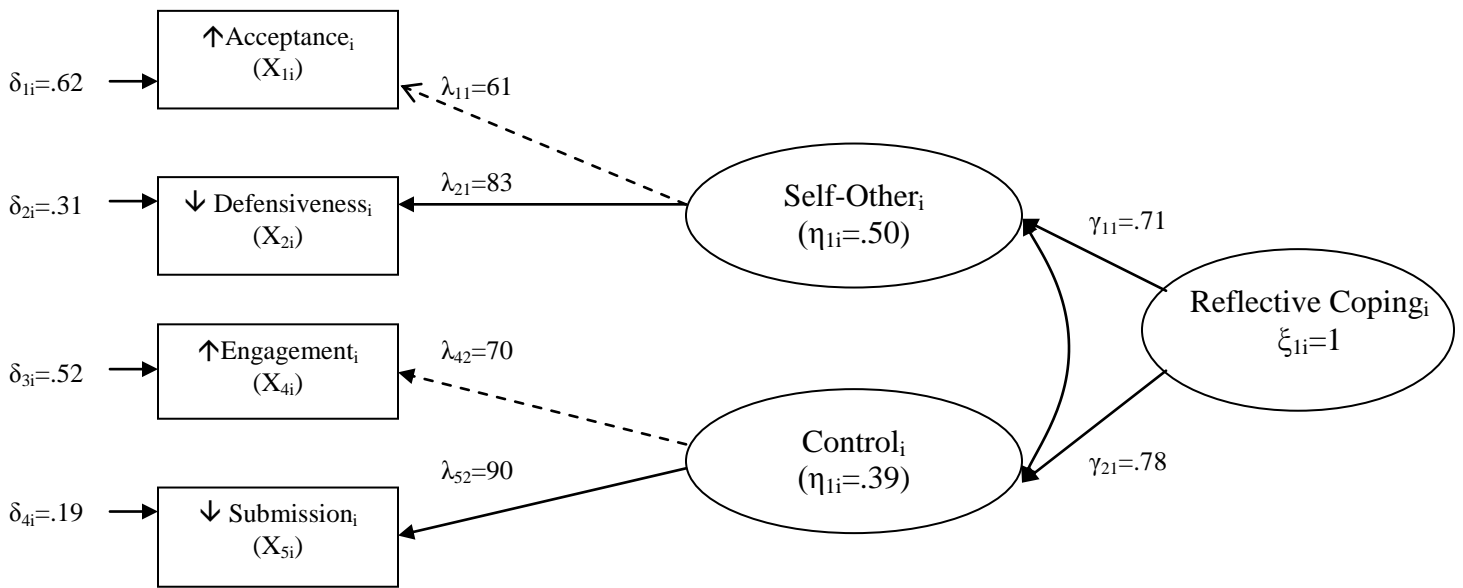


Figure 5. Completely standardized solution for the re-specified second-order model of coping.

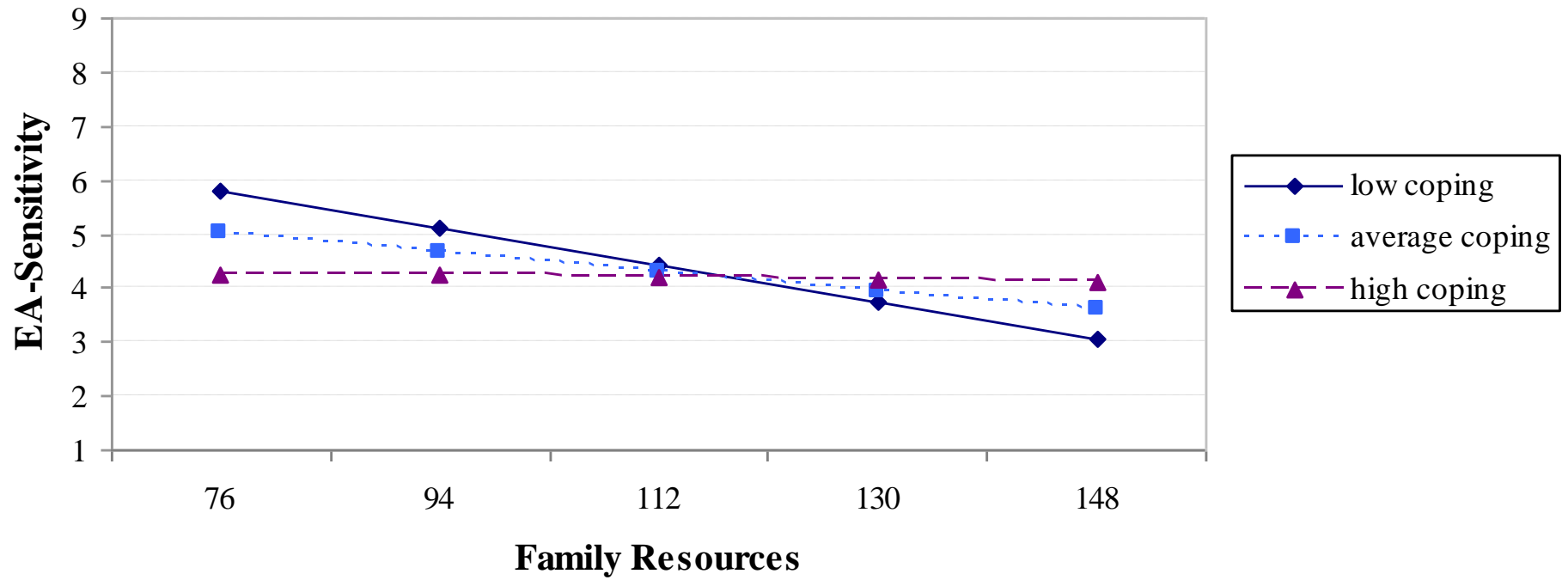


Figure 6. Prototypical plot of maternal sensitivity given differing levels of coping and family resources, controlling for the impact of maternal age and depressive symptoms (n=125).

Appendix A

*Standardized Questionnaires Psychometric Information*

Measure	Description of Measure	Subscales	Administration	Reliability	Validity	Standardized
Center for Epidemiological Studies Depression Scale (“Feelings Questionnaire”) (Radloff, 1977)	Developed to be appropriate for use in epidemiological studies of symptoms of depression in the general population.	None.	20 items on a 4-point scale: 1= rarely or none of the time; 4= most or all of the time. Respondents were asked “how often they felt this way during the past week”.	The coefficient alpha has been reported as .85.	Excellent concurrent validity.	Norms established with 3574 white respondents of both sexes from the general population and a sample of 105 psychiatric patients.
Family Resources Scale (Dunst & Leet, 1987)	Measures an individual’s perception of resource adequacy for their household, across specific areas. Created to assess the adequacy of resources in households with young children.	6 subscales: Growth & Support; Necessities & Health; Physical Necessities & Shelter; Intrafamily support; Child Care; Personal Resources	30 items on a 5-point scale: 1 = not at all adequate; 5 = almost always adequate.	Established with initial sample of 45 mothers of preschool age children. Cronbach’s alpha coefficient (from average correlation with items) of .92	Initial validity established with correlational analysis predicting well-being (r= .57, p< 001) and maternal commitment (r = .63, p<.001).	No.
Parenting Stress Index/Short Form (Abidin, 1995)	Designed to measure stress in the parent-child system; can be administered in less than 10 minutes	Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child	36-items on a 5-point scale: 1 = strongly disagree; 5 = strongly agree. Respondents were asked “For each statement, please circle the response that best represents your opinion”.	PSI-SF correlates very strongly with the full PSI. Internal test-retest reliability established. Reitman et al., 2002 confirmed the reliability and validity of this scale in a low socioeconomic group of African-American mothers.	Validity indicator derived from the full-length PSI	Yes. Normal ranges for Total Stress and for the three subscales.

## Appendix B

*Standardized Measures Used in the Study*

## Family Resources Scale

This scale is designed to assess whether or not you or your family have enough resources (time, money, energy, and so on) to meet the needs of the family as a whole as well as the needs of individual family members. For each item, please circle the response that best describes how well the needs are met on a consistent basis in your family (that is, month-in and month-out). The answers you give to this survey will be kept private. Only our research staff will know what you write. Please try your best to answer every question. If you are uncomfortable answering a question, you may skip it and go on to the next question.

	<b>Does not Appl y</b>	<b>Not at all Enough</b>	<b>Seldom Enough</b>	<b>Sometim es Enough</b>	<b>Usually Enough</b>	<b>Almost Always Enough</b>
1. Food for 2 meals a day	NA	1	2	3	4	5
2. House or apartment	NA	1	2	3	4	5
3. Money to buy necessities	NA	1	2	3	4	5
4. Enough clothes for your family	NA	1	2	3	4	5
5. Heat for your house or apartment	NA	1	2	3	4	5
6. Indoor plumbing/water	NA	1	2	3	4	5
7. Money to pay monthly bills	NA	1	2	3	4	5
8. Good job for yourself or your spouse/partner	NA	1	2	3	4	5
9. Medical for your family	NA	1	2	3	4	5
10. Public Assistance (SSI, WIC, Mass Health, TANF, etc)	NA	1	2	3	4	5
11. Dependable transportation (own car or provided by others)	NA	1	2	3	4	5
12. Time to get enough sleep/rest	NA	1	2	3	4	5
13. Furniture for your home or apartment	NA	1	2	3	4	5
14. Time to be by yourself	NA	1	2	3	4	5
15. Time for the family to be together	NA	1	2	3	4	5

	<b>Does not Apply</b>	<b>Not at all Enough</b>	<b>Seldom Enough</b>	<b>Sometimes Enough</b>	<b>Usually Enough</b>	<b>Almost Always Enough</b>
16. Time to be with your child(ren)	NA	1	2	3	4	5
17. Time to be with your spouse or partner	NA	1	2	3	4	5
18. Time to be with your close friends	NA	1	2	3	4	5
19. Telephone or access to a phone	NA	1	2	3	4	5
20. Baby sitting for you child(ren)	NA	1	2	3	4	5
21. Child care/day care for you child(ren)	NA	1	2	3	4	5
22. Money to buy special equipment/supplies for child(ren)	NA	1	2	3	4	5
23. Dental care for your family	NA	1	2	3	4	5
24. Someone to talk to	NA	1	2	3	4	5
25. Time to socialize	NA	1	2	3	4	5
26. Time to keep in shape and look nice	NA	1	2	3	4	5
27. Toys for your children	NA	1	2	3	4	5
28. Money to buy things for yourself	NA	1	2	3	4	5
29. Money for family entertainment	NA	1	2	3	4	5
30. Money to save	NA	1	2	3	4	5
31. Time and money for travel and vacation	NA	1	2	3	4	5

## CES-D Feelings Questionnaire

What kinds of feelings have you had in the past week?

	<i>Not at all</i>	<i>Little (1 or 2 days)</i>	<i>Occasion- ally (3-4 days)</i>	<i>A lot (5-7 days)</i>
1. I was bothered by things that usually don't bother me.	A	B	C	D
2. I did not feel like eating; my appetite was poor.	A	B	C	D
3. I felt that I could not shake off the blues even with help from my family or friends.	A	B	C	D
4. I felt that I was just as good as other people.	A	B	C	D
5. I had trouble keeping my mind on what I was doing.	A	B	C	D
6. I felt depressed.	A	B	C	D
7. I felt that everything I did was an effort.	A	B	C	D
8. I felt hopeful about the future.	A	B	C	D
9. I thought my life had been a failure.	A	B	C	D
10. I felt fearful.	A	B	C	D
11. My sleep was restless.	A	B	C	D
12. I was happy.	A	B	C	D
13. I talked less than usual.	A	B	C	D
14. I felt lonely.	A	B	C	D
15. People were unfriendly.	A	B	C	D
16. I enjoyed my life.	A	B	C	D
17. I had crying spells.	A	B	C	D
18. I felt sad.	A	B	C	D
19. I felt that people dislike me.	A	B	C	D
20. I could not "get going."	A	B	C	D

## Parenting Stress Index

This questionnaire contains 36 statements. Read each statement carefully. For each statement, please circle the response that best represents your opinion.

Circle SA if you strongly agree

Circle A if you agree

Circle NS if you are not sure.

Circle D if you disagree

Circle SD if you strongly disagree

While you may not find a response that exactly states your feelings, please circle one that comes closest. YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER.

**SA = Strongly Agree, A = Agree, NS = Not Sure, D = Disagree, SD = Strongly Disagree**

- |  |    |   |    |   |    |
|--|----|---|----|---|----|
| 1. I often have the feeling that I cannot handle things very well.                             | SA | A | NS | D | SD |
| 2. I find myself giving up more of my life to meet my child's needs than I ever expected.      | SA | A | NS | D | SD |
| 3. I feel trapped by my responsibilities as a parent.  | SA | A | NS | D | SD |
| 4. Since having this child, I have been unable to do new and different things.                 | SA | A | NS | D | SD |
| 5. Since having a child, I feel that I am almost never able to do things that I like to do.    | SA | A | NS | D | SD |
| 6. I am unhappy with the last purchase of clothing I made for myself.                          | SA | A | NS | D | SD |
| 7. There are quite a few things that bother me about my life.                                  | SA | A | NS | D | SD |
| 8. Having a child has caused more problems than I expected in my relationship with my partner. | SA | A | NS | D | SD |
| 9. I feel alone and without friends.   | SA | A | NS | D | SD |
| 10. When I go to a party, I usually expect not to enjoy myself.                                | SA | A | NS | D | SD |
| 11. I am not as interested in people as I used to be.  | SA | A | NS | D | SD |
| 12. I don't enjoy things as I used to.   | SA | A | NS | D | SD |
| 13. My child rarely does things for me that make me feel good.                                 | SA | A | NS | D | SD |

**SA = Strongly Agree, A = Agree, NS = Not Sure, D = Disagree, SD = Strongly Disagree**

- |   |    |   |    |   |    |
|---|----|---|----|---|----|
| 14. Most times I feel that my child does not like me and does not want to be close to me.                     | SA | A | NS | D | SD |
| 15. My child smiles at me much less than I expected. (Do not answer for infants less than 6 weeks old.)       | SA | A | NS | D | SD |
| 16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.           | SA | A | NS | D | SD |
| 17. When playing, my child doesn't often giggle or laugh. (Do not answer for infants less than 4 months old.) | SA | A | NS | D | SD |
| 18. My child doesn't seem to learn as quickly as most children.   | SA | A | NS | D | SD |
| 19. My child doesn't seem to smile as much as most children. (Do not answer for infants less than 6 weeks.)   | SA | A | NS | D | SD |
| 20. My child is not able to do as much as I expected.   | SA | A | NS | D | SD |
| 21. It takes a long time and it is very hard for my child to get used to new things.                          | SA | A | NS | D | SD |

*For the next statement, choose your response from the choices* "1" to "5" below.

- |   |    |   |    |   |    |
|---|----|---|----|---|----|
| 22. I feel that I am:   |    |   |    |   |    |
| 1. not very good at being a parent.   |    |   |    |   |    |
| 2. a person who has some trouble being a parent   |    |   |    |   |    |
| 3. an average parent  |    |   |    |   |    |
| 4. a better than average parent   |    |   |    |   |    |
| 5. a very good parent   |    |   |    |   |    |
| 23. I expected to have closer and warmer feelings for my child than I do and this bothers me. | SA | A | NS | D | SD |
| 24. Sometimes my child does things that bother me just to be mean.                            | SA | A | NS | D | SD |
| 25. My child seems to cry or fuss more often than most children.                              | SA | A | NS | D | SD |
| 26. My child generally wakes up in a bad mood.  | SA | A | NS | D | SD |
| 27. I feel that my child is very moody and easily upset.                                      | SA | A | NS | D | SD |
| 28. My child does a few things which bother me a great deal.                                  | SA | A | NS | D | SD |
| 29. My child reacts very strongly when something happens that my child doesn't like.          | SA | A | NS | D | SD |
| 30. My child gets upset easily over the smallest thing.                                       | SA | A | NS | D | SD |
| 31. My child's sleeping or eating schedule was much harder to establish than I expected.      | SA | A | NS | D | SD |



*For the next statement, choose your response from the choices "1" to "5" below.*

32. I have found that getting my child to do something or stop doing something is:                    1      2      3      4      5
1. much harder than I expected
  2. somewhat harder than I expected
  3. about as hard as I expected
  4. somewhat easier than I expected
  5. much easier than I expected

*For the next statement, choose your response from the choices "10+" to "1-3."*

33. Think carefully and count the number of things which your child does that bother you. For example: cries, is hard to put to bed, has feeding problems, overactive, whines, etc. (circle the number of things)                    10+    8-9    6-7    4-5    1-3
34. There are some things my child does that really bother me a lot.                    SA    A    NS    D    SD
35. My child turned out to be more of a problem than I had expected.                    SA    A    NS    D    SD
36. My child makes more demands on me than most children.                    SA    A    NS    D    SD

Appendix C  
*The Reflective Coping Interview Protocol*

Introduction

So we all know that parenting can be really stressful sometimes. Think about the past couple of weeks. What was the most stressful or difficult situation related to your child you have experienced? Could you describe what happened?

*If the mom asks for clarification*

→ “Can you remember a situation related to your child when you felt stressed? Usually people talk about difficult situations, daily hassles or pressures related to caring for their children. Others have talked about specific needs or behaviors of their children they found stressful to deal with.”

*If the mom is unable to come up with a situation related to her child*

- “What about a time when your baby wouldn’t stop crying, or wouldn’t go to sleep? Has that happened?”
- If mom says no it’s never happened, ask her to *imagine* how she would handle a situation in which she had to get up early the next morning for work, and her baby just would not stop crying and go to sleep.
- Okay, so let’s talk more about that situation:
  - Why was it stressful?
  - What did you feel at that moment?
  - At the time, did you feel like there was anything you could have done to prevent the stressful thing from happening?
  - So, how did you deal with the situation? What did you do? Did it help?
  - Is it typical for you to deal with stressful situations this way?
  - If you could go back to that situation would respond to it differently? Why or why not?

## Appendix D

*Original 27 Codes Used in Line-by-Line Coding*

## Description of Stress

## Preventable

1. Preventable: Yes
2. Preventable: No

## Type of Stress

1. Type: Child: ChallBeh
2. Type: Child: Devel
3. Type: Child: Health
4. Type: Child: Other
5. Type: Parenting task
6. Type: Other: People: FOB:
7. Type: Other: People: Family:
8. Type: Other: People: Peers:
9. Type: Other: People: Strangers:
10. Type: Other: Financial
11. Type: Other: Other

## Self-Other Representations

1. Attit: Self: Blame
2. Attit: Self: Acceptance
3. Attit: Others: Acceptance
4. Attit: Others: Defensive

## Resources

1. Control: Yes
2. Control: No
3. Help: Available
4. Help: Not available
5. Coping: Withdrawal/ Submission
6. Coping: Persistence/Participation

## Coping Scripts

1. Reflect
2. Not reflect
3. Cogn
4. Emot

Appendix E  
The Coding Manual

Interview ID \_\_\_\_\_ Coder \_\_\_\_\_

Code	Check if yes	Criteria
<b>SA: Prevent: Yes</b>		Does the mom’s response to the question: “Did you feel like you could have prevented the stressful thing from happening?” suggest that she could have prevented the stress? This code is specific only to this particular question of the interview, so please code “yes” if the answer is positive, even if later responses indicate otherwise.
<b>SA: Type</b>		1. Is the stressor about difficult behaviors of the child (crying, fussing, not eating, not sleeping, not listening to mom), the child’s health or some other issue related to the child ( <b>Child</b> )?
		2. Is the stressor about the fact that mom’s personal needs and responsibilities as a parent are incompatible (e.g., mom not getting sleep, not studying, not having a social life) ( <b>Parenting task</b> )?
		3. Is the stressor about other challenges, not better accounted by the previous codes (e.g., difficult behaviors of partner, family, peers, strangers; financial difficulties) ( <b>Other</b> )?

<b>Global Ratings</b>		
<p><i>Rate the degree to which each of the following codes describes the participant. The questions below will help you determine the rating. Consider</i></p> <p><i>a) how many criteria are met</i></p> <p><i>b) how many times the criteria were met within the entire interview,</i></p> <p><i>c) the overall quality of the examples from the text that meet the criteria.</i></p> <p><i>Then, assign a global rating, based on the following criteria:</i></p> <p>0 “not at all”: You didn’t answer any of the questions “yes”, so the code does not describe the participant.</p> <p>1 “somewhat”: You can not rule out this code, but in general, it does not characterize the participant.</p> <p>2 “moderately”: This code clearly characterizes the participant; she exhibits an average degree of the characteristic.</p> <p>3 “highly”: The participant exhibits an exceptionally high, well above average degree of the characteristic.</p>		
<b>Self Blame</b>		Does the mom do any of the following? 1. explicitly or implicitly recognizes that she is responsible for the experiences of others? Themes of guilt, regret, shame, self-criticism, descriptions of flaws and mistakes.
		2. communicates perceived failure or inadequacy, lack of self-acceptance, rigid expectations of oneself, low self-worth and self-esteem, negative bias in self-associations.
<b>Defensiveness</b> Although examples focus on the child, this code applies to others as well		1. Does mom say she was angry, mad, aggravated, irritated, offended, furious, or any other synonyms of the word “angry” (no matter how nicely she says it)? Does she seem resentful? As a measure of the degree of hostility, note how many times she expresses these emotions and in how many different ways.
		2. Does mom focus on her own distress only and fails to express compassion or consider why others may have behaved this way at least once within the entire interview (e.g., imagine a mom who is stressed by the child’s crying, but fails to show concern/compassion for the baby being in pain)?
		3. Is there a focus on power disadvantage or a theme of a power-struggle, i.e. a belief that a) the other has the upper hand in the situation (e.g., mom believes that a challenging behavior as willfully controlled by the child). b) mom is doing something against her will; she falls victim to the more dominant needs/wishes of the other (e.g., “I want to catch that little bit of sleep, but no, she was

	<p>awake” or “...she didn’t sleep for the first three months at all... Right, ha-ha, I slept when she slept.”)</p> <p>The theme of power struggle is often accompanied by a focus on defensive power repair (i.e., hostility, punishing the other) or on blaming the other.</p>
	<p>4. Does mother make sarcastic, dismissive, teasing jokes/inappropriate comments/disparaging remarks about the person (e.g., “It isn’t stressful that she bangs her head, I just think she is going to knock all her teeth out” or “oh my God. He was like the most colicky baby”). Remember that covert resentment could “sound” nice, but mean something inappropriate. Also, if the mom exaggerates/emphasizes the behavior that bothered her, it is also an example of hostility (e.g., “And he just used to scream and scream and scream and scream”)</p>
	<p>5. Does mom express the notions described in 1-4 about more than one person?</p>
<p><b>Acceptance</b> Although examples focus on the child, this code applies to others as well</p>	<p>1. Does mom say positive things about the person? (note that being grateful for help is also being positive).</p>
	<p>2. Does she see the psychological point of view of others (why they did what they did, how they think/view what happened)?</p>
	<p>3. Does she express concern, sympathy, or feels bad for others’ pain/struggles?</p>
	<p>4. Does she make developmentally sensitive comments or shows that she understands limitations of others? This applies primarily to what she says about the child, but could also be about others, like “my mom gets really tired at work so she can’t help me with the baby”.</p>
	<p>5. Does mom express the notions described in 1-4 about more than one person?</p>
<p><b>Help Available</b> Application of this code means that mom accepted (did not reject) the helpful actions of others. The theme of help not being available is captured by a different code.</p>	<p>Does the mom mention that somebody helped her, supported her emotionally, or simply “was there”? She may or may not use the word “help” or even be aware that the person was “helpful”, however it is clear that she considers the presence of this individual or his/her actions helpful/supportive.</p>
	<p>Does the theme of help/support seem salient/important to this mom <u>and does she assume it is/will be available to her?</u> Salience is communicated by:</p> <ul style="list-style-type: none"> <li>• Bringing up the theme of help without being prompted by the interviewer</li> </ul>
	<ul style="list-style-type: none"> <li>• Mentioning help several times or talking about several people who helped or several helpful occasions</li> </ul>
	<ul style="list-style-type: none"> <li>• Talking about help/support of others as an important resource, including in a hypothetical sense (e.g., “I wish I had called my doctor”; “I will ask for help in the future”)</li> </ul>
<p><b>Help Unavailable</b> The primary purpose of this code is to capture the theme of lack of help. If rejection of help is the only theme, the rating should not be higher than 2.</p>	<p>Does the mom explicitly say that the help was not available, that she was alone, or that wishes somebody was there to help her?</p>
	<p>Does the mom reject or resent the help she received, downplays its importance or meaningfulness?</p>
	<p>Does the theme of <u>not</u> having help/support seem salient/important to this mom Salience of this theme is communicated by:</p> <ul style="list-style-type: none"> <li>• Bringing up the theme of help without being prompted by the interviewer</li> </ul>
	<ul style="list-style-type: none"> <li>• Mentioning unavailability of help several times or talking about several people who didn’t help/were unhelpful or several occasions on which help was not available</li> </ul>
	<ul style="list-style-type: none"> <li>• Communicating that getting help is not important, i.e. mom says that she could have asked for help but did not.</li> </ul>
<p><b>Submission</b></p>	<p>1. Does mom describe doing/thinking about doing any of the following</p>
	<ul style="list-style-type: none"> <li>• Avoiding dealing with the stressor by giving in to the demands of the situation, or withdrawing from it (e.g., leaving it physically or mentally)</li> </ul>
	<ul style="list-style-type: none"> <li>• Distracting herself from the stressor by focusing on something else or engaging in other activities, such as going shopping, taking a nap, smoking, wishful thinking, relaxing etc.</li> </ul>

	<ul style="list-style-type: none"> <li>• Being disengaged, passive, doing nothing, ignoring, giving up.</li> </ul>
	<ul style="list-style-type: none"> <li>• Admitting powerlessness, lack of control or options e.g., crying, blaming others?</li> </ul>
	2. Does mom conclude that nothing worked <u>without listing</u> what she actually did or mentioning a couple of things she did (a few “unimpressive” strategies or the same strategy multiple times), but with a powerless, pessimistic “tone”?
	3. Does the answer project lack of confidence, self- doubt, predisposition that any strategy will fail.
	4. Does the mom avoid conflict/misbehavior by giving in to the demands of others (e.g., lets her child sleep with her) right away?
	5. Does the mom worry about others judging her actions or the entire situation (e.g., being stressed out about what others thought of her when she couldn’t soothe her baby)?
<b>Engagement</b>	1. Does the mom describe doing/thinking about doing any of the following
	<ul style="list-style-type: none"> <li>• Persistently trying to address the stressor (insisting on getting the result she wants; be sure that it is actually clear what she wants, i.e. the goal of her coping behavior is mentioned or is otherwise obvious).</li> </ul>
	<ul style="list-style-type: none"> <li>• Trying various strategies (instead of trying too few or the same strategy multiple times).</li> </ul>
	<ul style="list-style-type: none"> <li>• If the stressor is something she can’t control (e.g., bad weather), does the mother reframe/reinterpret the stressor in a way that shows control and changes the emotional significance of the situation (“I can’t control the fact that he is teething, but I can make sure I am here for him”).</li> </ul>
	2. Does mom conclude that nothing worked only after she has listed the various things she tried doing? In order for it to be P/P, and not W/S, the narrative should have a take-charge, “I’m in control” tone and the repertoire of strategies should be impressive. Example of an impressive repertoire “I just go through everything, we go through all the toys, we go through the swing, we walk outside, I can give her a teething biscuit, give her some water, give her a bath, I can nurse her, you know, I do everything”
	3. Does the answer project recognition of own strength/skills, self-confidence, and feeling of mastery?
	4. Does the mom say what she could have been more persistent, giving the benefit of hindsight?
	5. Does the mom capitalize on resources she has (asks for help, drinks coffee to stay awake after a sleepless night)?
6. If the mom’s strategy is to give in to the demands of others, does she present it as a compromise/cognitive restructuring (“I played with him in the moment, and did my homework later”)? In other words, does she maintain control over what happens? This is the only condition under which this strategy can be coded as P/P.	
7. If the mom’s strategy is to ignore misbehavior, does she clearly state that this is done for the purpose of disciplining and remaining in control? This is the only condition under which this strategy can be coded as P/P. The focus is on mom’s taking control versus giving up/submitting to demands.	

**CS:Cogn**

Flag and count all references to thought processes (words describing cognitive processes). Refer to the list below for examples. These words need not pertain to participant’s own cognitive processes only, but could describe thinking processes of others. If the same word is used multiple times, flag all instances.

*NOTE 1: CS:Cogn can be applied when participant is representing thinking processes by quoting her own thoughts (e.g., I was like, “Wow, this is hard”). However, when the answer contains direct speech (e.g., I said “Wow, this is hard”), don’t code CS: Cogn unless there is a reference to cognitive processing in the answer.*

*NOTE 2: Filler phrases like: “I don’t know, I guess I just did it, you know?” etc. should not be coded as CS:Cogn, unless they describe an actual process of thinking. Situations will differ, use your judgment do*

decide. As a general rule, if you can substitute the phrase with *er*, *um*, or other interjection that represents a pause, uncertainty, etc., then it is a filler phrase and should not be coded.

NOTE 3: Because we can't differentiate when "want", "wish", "dream" means "like" and when they mean "intend", we don't code them as neither **CS:Emot** nor **CS: Cogn**.

**CS:Emot**

Flag all references to affective states, i.e., words describing emotional states or processes (refer to the list at the end of this document). These words (emotion-related process nouns, adjectives and verbs) need not pertain to participant's own affective states only, but could describe affective states of others. If the same word is used multiple times, flag all instances.

NOTE 1: All types of emotions (positive, neutral and negative) apply here.

NOTE 2: Filler phrases like: "I feel that..." should not be coded as **CS:Emot**, unless they describe an actual process of feeling. As a general rule, if you can substitute the phrase with *er*, *um*, or other interjection, then it is a filler phrase and should not be coded.

<b>Examples of CS: Cogn (The list is not exclusive):</b>			
absorb	credence	get an idea	plan for
accept	credit	grasp	ponder
acceptance	deduce	guess	presume
acknowledge	deduction	have in mind	project
analyze	deem	hold	rationalize
anticipate	deliberate	ignore	realize
appraise	determine	imagine	reason
appreciate	digest	inattention	recall
assent	disagree	infer	reckon
assume	disbelieve	intellectualize	recognize
assumption	discover	intuition	recollect
assurance	disregard	knowing	reflect
attend	divination	judge	regard
attention	envisage	know	remember
be convinced	envision	logical	reminisce
believe	estimate	meditate	resolve
brood	evaluate	mind	see
call to mind	examine	mindful	sort out
catch	expect	misinterpret	speculate
cerebrate	expectation	mistake	stop to consider
cogitate	fancy	misunderstand	study
comprehend	fathom	mull	suppose
conceive	feature	mull over	surmise
concentrate on	figure out	muse	suspect
conclude	find out	note	take under consideration
conclusion	follow	notice	think
confidence	foresee	observe	understand
consider	forget	occur	vision
contemplate	gather	perceive	visualize
conviction	get	pick up	watch
			weigh
<b>Examples of CS:Emot (the list is not exclusive)</b>			
DIGNITY/ SELF-WORTH	HURT/SAD/ DEPRESSED/ HELPLESS	Unimportant	Sensitive
Ashamed	Abandoned	Uninformed	Tender
Beaten down	Abused	Unknown	Devoted
Criticized	Aching	Unloved	Attracted
Dehumanized	Afflicted	Unsupported	Passionate
Disrespected	Agonized	Unsure	Admiration
Embarrassed	Alienated	Unwanted	Warm
Humiliated		Victimized	Touched
		Vulnerable	Sympathy

Inferior	Alone	Woeful	Close
Insulted	Anguish	Wronged	Loved
Invalidated	Appalled	HAPPY/ALIVE/	Comforted
Offended	Brushed off	CALM	Drawn toward
Put down	Confused	Animated	NERVOUS/AFRAID
Resentful	Crushed	At ease	Afraid
Ridiculed	Dejected	Blessed	Alarmed
Shy	Deprived	Bright	Anxious
Stereotyped	Desolate	Calm	Attacked
Teased	Despair	Cheerful	Cowardly
Underestimated	Desperate	Comfortable	Defensive
Worthless	Disapproved of	Confident	Fearful
ANGRY/UPSET	Discouraged	Content	Frightened
Aggressive	Disillusioned	Courageous	Insecure
Annoyed	Dismayed	Delighted	Intimidated
Bitter	Distressed	Ecstatic	Menaced
Boiling	Empty	Elated	Nervous
Cross	Fatigued	Encouraged	Over-protected
Enraged	Grief	Energetic	Panic
Fuming	Grieved	Festive	Quaking
Hateful	Heartbroken	Fine	Restless
Hostile	Ignored	Fortunate	Scared
Incensed	Inferior	Free	Shaky
Indignant	Injured	Free and easy	Suspicious
Inflamed	Insignificant	Funny	Terrified
Infuriated	Invisible	Glad	Threatened
Insulting	Left out	Gleeful	Threatened
Irritated	Lonely	Great	Timid
Offensive	Lost	Good	Under-protected
Provoked	Misunderstood	Happy	Unsafe
Resentful	Mournful	Hopeful	Violated
Sore	Neglected	Joyous	Wary
Unpleasant	Offended	Jubilant	Worried
Upset	Pained	Liberated	INDIFFERENT/CYNICAL
Worked up	Paralyzed	Lucky	Bored
IMPATIENT/	Pathetic	Merry	Cold
IMPULSIVE	Pessimistic	Optimistic	Cynical
Anxious	Powerless	Optimistic	Disinterested
Bold	Pressured	Overjoyed	Distrustful
Brave	Rejected	Peaceful	Dull
Challenged	Rejected	Playful	Guarded
Daring	Restricted	Pleased	Insensitive
Determined	Shy	Re-enforced	Lifeless
Eager	Sorrowful	Relaxed	Misgiving
Earnest	Suffocated	Satisfied	Neutral
Enthusiastic	Tearful	Secure	Nonchalant
Excited	Tense	Serene	Preoccupied
Frisky	Tormented	Spirited	Reserved
Impulsive	Tortured	Sunny	Skeptical
Inspired	Tragic	Thankful	Suspicious
Keen	Trapped	Thrilled	Untrusted
Provocative	Uncared about	Wonderful	Untrusting
	Uneasy	LOVE	Weary
	Unhappy	Loving	
	Unheard	Affectionate	