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Promoting Postpartum Resilience in the Face of Childhood Trauma:

The Roles of Individual and Social Traits

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Abstract

Various internal and external characteristics appear to influence how adults “bounce back” from trauma in childhood. The present study investigated the impact of internal and external factors of resilience on the relationship between aversive childhood experiences and adult psychopathology (depression and PTSD) in a unique sample of postpartum mothers. Results supported our hypotheses regarding the independent and collaborative impact of factors of resilience on depression and PTSD during the postpartum period. Level of trauma exposure was positively related to pathological symptoms and negatively related to internal and external resiliency factors. Participants who utilized problem-solving coping and social support had fewer symptoms of psychopathology, yet these characteristics were also less represented with more severe abuse. Hierarchical linear regression analyses confirmed that social support and income moderated the relationship between childhood trauma and adult psychopathology. This study is the first to demonstrate the interactive effect of income and social support on resilience to postpartum psychopathology in childhood trauma-surviving women. For clinicians this implies that supportive relationships during potentially vulnerable periods are protective against psychopathology, and that the level of risk ameliorated is dependent on economic level as well.

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An extensive body of literature exists on childhood trauma and its developmental impact on mental health, and findings generally confirm that aversive experiences early in life are likely to affect psychological wellbeing in the future (Widom, DuMont, & Czaja, 2007). Various internal and external characteristics appear to influence how individuals “bounce back” from trauma in childhood. Several research studies have explored factors that can be helpful in coping with childhood trauma, such as interpersonal relationships and positive coping styles (Hyman & Williams, 2001; Runtz & Schallow, 1997). However, past research has not focused on the comparison between individual and social characteristics that shape coping after traumatic events. Assessing an individual’s resiliency after trauma is of particular interest in the present research, since past studies have emphasized maladaptive rather than healthy outcomes. When the general phenomenon of “resiliency” is deconstructed into individual, family, and social domains, more features of resiliency may be identified. The purpose of this study is to investigate lifestyle factors that promote resilience to childhood trauma for mothers in the postpartum period. As the birth of a child may cause memories of trauma to resurface, the perinatal time can be especially vulnerable to new mothers and can cause psychopathology to be triggered or heightened. Therefore, maternal resiliency in the face of past childhood trauma may be predicted by distinct internal or external qualities that differ from qualities shaping resiliency for adult trauma. In this paper we explore the roles of cognitive coping styles, spirituality, and supportive relationships on postpartum coping in new mothers with histories of childhood trauma.

Several forms of trauma during childhood can be explored with a focus on resiliency in adulthood. Adult male and female survivors of childhood sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect are the primary populations that researchers have sampled in testing resiliency (DuMont et al., 2005). The present study is unique in that we explore what has been helpful to postpartum mothers who are coping with their own childhood trauma experience(s). Furthermore, the characteristics of resilience, such as feeling in control and having strong social support, may be different in this sample from the adaptive factors studied for child, adolescent, and older adult populations (O'Dougherty Wright, Fopma-Loy, & Fischer, 2005).

Childhood Abuse and Vulnerability to Psychopathology

The trajectory of mental illness and mental health from childhood to adulthood can be affected by several individual and contextual factors, such as personality traits and exposure to stressors (Jaffe, Caspi, Moffitt, Polo-Tomás, & Taylor, 2007; Sameroff, 2000). Women with a history of child sexual abuse, for example, have also reported more physical abuse, emotional abuse, and parental conflict taking place in the home during childhood, and in adulthood are more likely to become depressed (Gladstone, Parker, Mitchell, Malhi, Wilhelm, & Austin, 2004). Childhood influences, such as parental substance abuse and lack of parental monitoring, also have the potential to shape development into adulthood and lead to antisocial behavior and depressive outcomes (Schulenberg, Sameroff, & Cicchetti, 2004). In turn, individuals who were abused or neglected during childhood are at a greater risk of developing mental health issues into adulthood (Widom et al., 2007).

A study by Collinshaw and colleagues (2007) found that rates of major depressive disorder (MDD) and posttraumatic stress disorder (PTSD) in adolescent and middle-aged

participants were highest among those with histories of childhood sexual or physical abuse. In comparison to MDD, PTSD has been shown to be the most recurrent form of psychopathology tied to childhood abuse among adult male and female abuse survivors (Collinshaw et al., 2007; Widom et al., 2007). It was found that of the adult participants who had been abused in childhood, 57% had either a diagnosis of MDD or recurrent episodes of MDD, whereas only 24% of the control participants (those without childhood physical or sexual abuse) had a diagnosis or episodes of MDD (Collinshaw et al., 2007). In addition, 19% of the abused adult participants had been diagnosed with PTSD compared with 2% of the control participants (Collinshaw et al., 2007).

Regarding individuals with childhood abuse or neglect, a recent study found that 25% of these victims met the criteria for lifetime MDD, and most often developed it after having suffered PTSD (Widom et al., 2007). This study also found that of their participants with lifetime MDD, significantly more who were abused and neglected as children (96.4%) also met the criteria for at least one other lifetime diagnosis, including PTSD, than controls (83.4%) (Widom et al., 2007). Literature supports the frequency of depression being paired with anxiety conditions in children and adults, and discusses that dual internal disorders often manifest in children growing up in adverse environments, such as in poverty or with substance-abuse in the home (Sameroff, 2000). As these studies demonstrate, childhood abuse and neglect have the potential to lead to co-occurring forms of psychopathology in adulthood.

Link to Postpartum Psychopathology

While there is abundant research on the impact of childhood abuse on subsequent adult psychopathology, there is less research on adult vulnerability during distinct life stages, for example the childbearing period. A study by Lang, Rodgers, and Lebeck (2004) found higher

rates of depression and anxiety in pregnant and postpartum mothers who had been emotionally neglected and physically abused during childhood. Another research group investigated females' experiences of sexual threats, abuse-related guilt, and family substance abuse and found links to higher prevalence of PTSD in adulthood (Katerndahl, Burge, & Kellogg, 2005). This study found that childhood sexual abuse presented the greatest risk for adult females to develop PTSD (Katerndahl et al., 2005). Although less research has been devoted to physical abuse and the risk of PTSD, it would be a valuable contribution to existing literature to examine the impact of childhood physical abuse on females, especially mothers. New mothers often display high levels of resilience to childhood physical abuse, however, it may not be until their child reaches the age of their own abuse that symptoms of PTSD will surface (Herman, 1997).

Resilience in the Face of Childhood Trauma

The definition of resilience has been debated amongst scholars as to whether it should be considered a personality trait or a specific response based on circumstances (Agaibi & Wilson, 2005; Campbell-Sills, Cohan, & Stein, 2006; Cicchetti & Rogosch, 1997; DuMont, Widom, & Czaja, 2005). According to Rutter (2007), resilience refers to individual differences in response to stress or adversity. Masten (2004) proposed a more complex definition, viewing resilience as a good outcome in spite of high risk, competence under stress, and recovery from trauma (as cited in McGloin & Widom, 2001). Bearing these definitions in mind, "resilience" can be described as an individual's ability, based on both internal and external characteristics, to be highly functioning and mentally healthy despite having experienced trauma. Luthar, Cicchetti, and Becker (2000) identified protective factors for children exposed to severe adversity, including close relationships with supportive and prosocial adults. However, other studies have focused on children's more internally-based reactions to stress, such as social behavior and

maintaining self-esteem (Cicchetti & Rogosch, 1997; Jaffe et al., 2007). Research on resilience in adults has mirrored findings on resilient traits in children, but has also looked into coping styles and secure interpersonal relationships (Campbell-Sills et al., 2006; Collinshaw et al., 2007). These past studies provide the framework by which the present study de-constructs resilience into more specific traits that foster adaptive outcomes to adversity.

Factors of Resilience

What literature commonly fails to discuss are characteristics of resilience among individuals at certain developmental stages, and the present study will contribute to this interest through our sample of women in the postpartum period. We will examine specific factors that lead to resilience in the face of childhood trauma, based on both internal and external traits, for postpartum mothers.

Coping Styles. Strategies and styles of coping have been compared in their effectiveness to reverse psychological distress and promote resilience in the aftermath of trauma. From DiPalma's (1994) exploratory study of coping and adaptation in adult female incest survivors emerged the common themes of inner strength, ability to project into the future, achievement orientation, and the capacity to take advantage of opportunities, as traits of highly functioning survivors. These themes are similar to those of "problem-solving" coping, which include conscious efforts to manage stress and feel in control after having experienced past trauma (Campbell-Sills et al., 2006; O'Dougherty Wright, Crawford, & Sebastian, 2007; Thoits, 1995). In addition, cognitive coping through meaning-making has been found to be positively associated with resilience after childhood sexual abuse (Himelein & McElrath, 1996; O'Dougherty Wright et al., 2007). This suggests that reframing the experience from a new perspective, disclosure and discussion of CSA, and refusal to ruminate on past trauma lead to

resiliency in adulthood (Himelein & McElrath, 1996; Runtz & Schallow, 1997). Cognitive coping has been described as expressive in that it emphasizes trying to understand what happened, taking action to make positive changes, and reflecting on things that were helpful in getting through the experience (Thoits, 1995). In turn, problem-solving coping and meaning-making can be categorized together as cognitive coping because they involve actively approaching issues and thinking through negative experiences (Runtz & Schallow, 1997; Thoits, 1995). Cognitive coping is also linked with resilient personality traits, such as competence and adjustment (Himelein & McElrath, 1996; Rutter, 2007). Though a debate remains regarding individual differences and the role of personality in determining ways of coping, these styles will guide the present study in how resilience is conceptualized (Campbell-Sills et al., 2006; DuMont et al., 2007).

Campbell-Sills and colleagues (2006) looked at the link between resilience and coping, with resilience referring to the adaptive outcomes in the face of adversity, and coping as the cognitive and behavioral strategies that an individual uses to manage stress. Problem-solving coping explained the positive association between conscientiousness and resilience (Campbell-Sills et al., 2006). This result may not be surprising in that the competent nature of problem-solving coping is included as a subdomain in resiliency models (Connor & Davidson, 2003; DiPalma, 1994). Therefore, as conscientious individuals tend to be hard-working and task-oriented, they may be more resilient to stressful and traumatic situations.

It has been suggested that coping strategies and social support jointly promote adult adjustment and wellbeing in the aftermath of childhood trauma (Runtz & Schallow, 1997; Rutter, 2007; Thoits, 1995). In turn, having a strong social support system may be considered a coping strategy in itself. Cognitive coping, through its nature of sharing feelings with friends or talking

with others about one's problems, includes aspects of social support (Himelein & McElrath, 1996; Runtz & Schallow, 1997; Thoits, 1995). In a study of adult male and female survivors of childhood sexual and physical maltreatment, measures of coping and social support were administered to determine mediators in the relationship between childhood maltreatment and current psychological adjustment (Runtz & Schallow, 1997). The authors found that childhood physical abuse (CPA) had a negative correlation with social support ($r=-.20$) and that social support and cognitive coping strategies both mediated the relationship between maltreatment and later adjustment (Runtz & Schallow, 1997). This confirms that childhood sexual and physical abuse play a role in having a diminished sense of support from family and friends, and agrees with the notion that social support and coping strategies have the potential to reduce the negative impacts of childhood maltreatment on adult adjustment.

Spirituality/Religiosity. Spiritual coping strategies have been studied with trauma survivors and were found to have both positive and negative relationships with mental health outcomes (Harris, Erbes, Engdahl, Olson, Winskowski, & McMahill; O'Dougherty Wright et al., 2007). Empirical studies have shown that some trauma survivors find religious functioning helpful in coping with trauma, while others reduce religious involvement after experiencing trauma (Connor, Davidson, & Lee, 2003; Pargament, Smith, Koenig, & Perez 1998; Harris et al., 2008). In addition, negative life events may result in strengthening spiritual beliefs, which can help to promote wellbeing and reduce distress in adulthood (Connor et al., 2003). The constructs of spirituality and religiosity, however, should be distinguished in order to interpret such findings. As a form of coping, spirituality refers to a sense of inner strength in daily life (Underwood & Teresi, 2001 as cited in Fowler & Hill, 2004). Religiosity generally refers to an affiliation with a religious institution where beliefs, rituals, and behaviors are shared. The

present study will measure spiritual coping due to its more subjective nature. More specifically, the aspects of personal strength from God, the role of religion in understanding stress, and trust in others will be examined.

It has been suggested that a strong sense of spirituality can lead to a greater sense of control and meaning (Connor et al., 2003; Fallot, 1997; Harris et al., 2008). As survivors of abuse may begin to question their safety and purpose in the world, spirituality, for some, serves to define the search for meaning in life events, especially after negative experiences (Connor et al., 2003; Decker, 1993; Fowler & Hill, 2004). Through possessing a sense of spirituality, trauma survivors are provided with discussions of healing, recovery, and growth either through religious participation or personal reflection (Fallot, 1997). After trauma, spiritual growth may occur as a coping strategy to aid in support and recovery, and has been found to reduce PTSD symptoms among male and female survivors of trauma in adulthood (Connor et al., 2003; Decker, 1993). While spirituality is regarded as a potential source of adaptive coping, further exploration into how it is related to overall resiliency is needed to determine helpful factors in coping.

Spiritual coping has also been linked with social support, as supportive relationships may be fostered through spirituality and religious involvement (Fowler & Hill, 2004; Harris et al., 2008). Past research has found that religious individuals have more access to social support and experience less depression, although its positive impact on mental health is disputed (Harris et al., 2008). Seeking spiritual support from others, especially people sharing one's faith, and seeking support from God are considered the positive aspects of religious participation after trauma (Harris et al., 2008). These aspects will be examined in the present research, as social support and spirituality may be linked in our sample of mothers.

Social Support. Social support has been highly regarded as having a positive impact on coping with trauma, and it encompasses interpersonal relationships with family, friends, and romantic partners. Considering that adults with a history of child abuse have a greater risk of experiencing difficulties in interpersonal functioning (i.e. problems with adult friendships and love relationships), social support is of particular interest in this study since it may be associated with resilient outcomes (Campbell-Sills et al., 2006; Collinshaw et al., 2007). A number of scholars have suggested that social support acts as a buffer against the negative effects of stress, particularly of child abuse-related stress (Campbell-Sills et al., 2006; Pepin & Banyard, 2004; Runtz & Schallow, 1997; Thoits, 1995). Moreover, it has been found that in predicting developmental achievement, the level of perceived social support from adults is comparatively more important than the quantity of support, as measured by Erikson's psychosocial stages (Pepin & Banyard, 2005). While research on social support and resilience will be discussed in more detail, it can be concluded that interpersonal relationships across the life period from childhood to middle age are positively associated with resilience (Rutter, 1997).

It is important to define social support within the context of resilience. In female survivors of abuse, it may be that resilient young females are more likely to reach out for support, thus promoting more adaptive outcomes in adulthood. With this possibility in mind, various forms of interpersonal relationships are examined to pinpoint helpful forms of social support. Interpersonal relationships have been suggested to promote resiliency for women especially when a strong and secure relationship(s) exists (DuMont et al., 2007; Hyman & Williams, 2001; Pepin & Banyard, 2006; Runtz & Schallow, 1997). Several studies of female survivors of child sexual abuse looked at these spheres of interpersonal relationships in order to link them with resilience: relationships with partners, relationships with female friends, and

participation in social activities (Berliner & Conte, 1995; DuMont et al., 2007; Hyman & Williams, 2001; McGloin & Widom, 2001; Mullen, Martin, Anderson, Romans, & Herbison 1996). Using this criterion, Hyman and Williams (2001) found that 72% of the resilient (operationalized by several domains, including psychological well-being, physical health, and interpersonal relationships) women in their sample met these spheres as opposed to only 36% of the designated non-resilient women. Furthermore, it has been found that receiving support from a special person at some point during life is associated with being highly resilient (operationalized by the same domains) (DuMont et al., 2007; Hyman & Williams, 2001).

In examining the negative predictors of psychopathology, researchers in a recent study looked at interpersonal relationships throughout development (Collinshaw et al., 2007). Using longitudinal data from adolescence to midlife in participants with childhood sexual or physical abuse, it was found that peer relationships in adolescence, the quality of adult friendships, and the stability of love relationships were strongly related to resilience when it was defined by fewer pathological symptoms (Collinshaw et al., 2007). Similar studies have found that stable relationships, a strong sense of community, and participation in social activities from adolescence to adulthood are markers of resilience (DuMont et al., 2007; Hyman & Williams, 2001; McGloin & Widom, 2001). These past studies raise interest in developmental perceptions of social support and how it promotes resilience through mental health and adaptive traits in adulthood. Therefore, perceived social support may mediate or moderate the relationship between maltreatment and psychopathology, thus implying resilience (Bonanno, 2006; Collinshaw et al., 2007; DuMont et al., 2007; Pepin & Banyard, 2006).

Study Aims

Prior studies have explored the unique and synergistic contributions of various characteristics in relation to the concept of resiliency; however, generally one or two domains were taken into consideration (e.g. social support and cognitive coping, or social support and spirituality). It appears that a comprehensive and simultaneous exploration of multiple aspects underlying resiliency is missing, yet could provide important insight into unique characteristics of resiliency. This project offers the opportunity to measure such multiple aspects of resiliency simultaneously, and to deconstruct the broad term “resiliency” into cognitive coping strategies and interpersonal relatedness. Furthermore, our sample of mothers in the postpartum period is unique in that existing literature has overwhelmingly examined male and female survivors of abuse more closely to the time of the abuse (either in childhood or adulthood), without regard to the impact that life stages may have on coping abilities. As resilience has been conceptualized both in terms of internal personality traits and external situational traits, resilience in this study is designed to encompass both internal and external adaptive outcomes. Factors of resilience will be measured separately in order to serve our aim of identifying specific helpful attributes and relationships in the face of trauma. These factors include internal cognitive coping styles (problem-solving and meaning-making), spiritual coping, and external social support. With a focus on both mental health and factors of resilience in the childbearing year, this study will initiate research on adaptive coping during a particular life period.

It is expected that higher levels of the aforementioned resiliency factors will be associated with improved mental health in our sample of postpartum mothers. Thus, we hypothesize (1) that childhood trauma will have a positive relationship with postpartum depression and PTSD, while resiliency will have an inverse relationship with psychopathology and level of trauma exposure. Following prior research (Fowler & Hill, 2004; Harris et al., 2008;

Runtz & Schallow, 1997) we further hypothesize (2) that the various factors (i.e. cognitive coping strategies, spirituality, social support) tapping into the concept of resiliency will be intercorrelated. Finally, following prior research (Runtz & Schallow, 1997) (3) we will explore whether resiliency is mediating or moderating the link between childhood adversity and postpartum psychopathology. Findings from this study may inform which specific factors, either internal or external, are most important in explaining who develops postpartum psychopathology when exposed to childhood adversity (Luthar et al., 2000).

Method

General Study Overview

The MACY (Maternal Anxiety during the Childbearing Year) project is a longitudinal study that examines how childhood traumatic experiences affect women who have just entered motherhood. MACY follows participants' progress through the first postpartum year and investigates multiple domains of adaptation to motherhood and the experience of past trauma. These domains include mothers' mental health, their coping with the demands of being a new parent, and their developing relationship with the infant. We also collect data on mothers' cognitive coping during this challenging time, satisfaction with their social support, and their involvement with spirituality; these are the domains used for the present paper. Participants complete self-report measures and interviews throughout the study. In addition, both structured and unstructured interactions between mothers and infants are recorded to identify bonding patterns. Data being used for this paper are from the four and six-month postpartum assessments, however, MACY participants are involved in the study from six weeks to 18 months postpartum.

Participants

Participants in this study ($N=182$) were a sample of women who had given birth within 6 weeks of entering the study. Women responded to fliers posted in the community or were recruited from an affiliated study called the STACY project, which studies PTSD and its effects during pregnancy. The MACY project aims to recruit a total of 240 women, 160 with childhood trauma history and 80 healthy controls; in the present paper we report on the first 182 women for whom we have collected data ($n=109$ or 60% with childhood abuse). Table 1 provides a detailed description of the demographic characteristics of the MACY population. The sample represents an economically and racially diverse community cohort with a large representation of minority women (38.7%) and a bimodal income distribution. While 64.6% of participants earn less than \$50,000 per year and 28.6% earn less than \$25,000 per year, there is also a substantial group of participants (18.7%) with an annual income greater than \$100,000 per year. Mean age of the participants was 28.62 years old ($SD = 5.32$). Slightly more participants had obtained at least a bachelor's degree (57.4%) and the majority of participants (79.1%) identified as married or living with a partner.

Procedure

Interested women recruited from the STACY project and from the community are screened at six weeks postpartum to determine eligibility for the study during a short telephone interview. Screening criteria are childhood abuse or neglect before the age of 16, free of psychosis or substance abuse, or having a baby who is older than four months. An additional set of women who do not endorse childhood abuse but do meet the other inclusion criteria are included as healthy controls.

If the participant is eligible for the study, she is contacted again at four months postpartum for a telephone interview. During this interview, verbal consent for participation is

obtained and a description of the study protocol is given, as well as several maternal behavior and parenting questionnaires. Two home visits are conducted at around six months postpartum and written consent is obtained. The mother is given a series of questionnaires, and the mother and baby then complete a series of interaction tasks that are videotaped. If the participant did experience childhood trauma, an interview about this traumatic experience is conducted. The participants are contacted once again between 12 and 18 months postpartum over the telephone, in which they complete questionnaires similar to those given during the telephone interview at 4 months postpartum. At 15 months a laboratory visit is conducted which includes an interview about parenting and a series of interaction and separation tasks with the participant and her baby. All participants receive \$60 at the end of the second 6-month home visit, as well as \$10 for each of the phone surveys and \$40 for the 15-month laboratory visit (\$20 if the visit must be conducted at the participant's home). In total, participants may earn up to \$120 for their involvement in the MACY study.

Measures

Childhood Trauma. The Childhood Trauma Questionnaire (CTQ) is a 28-item self-report questionnaire, with each item being rated on a five-point Likert scale ranging from “Never True” to “Very Often True” (Bernstein & Fink, 1998; Bernstein, Stein, Newcomb, Walker, Pogge, Ahluvia, Stokes, Handelsman, Medrano, Desmon, & Zule, 2003). The questionnaire measures presence and severity of childhood abuse and neglect and contains five scales with five items each, including Emotional Abuse, Physical Abuse, Sexual Abuse, Physical Neglect, and Emotional Neglect, as well as a three-item Minimization/Denial scale (Bernstein & Fink, 1998). The CTQ has been demonstrated to be highly reliable and valid (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997). From this measure levels of abuse exposure may be identified based on

scoring from the five scales. This study accounts for any abuse exposure and severe abuse exposure as potential levels that impact postpartum resiliency. Sample items include: “When I was growing up I knew that there was someone to take care of me and protect me” and “I believe that I was sexually abused”. The questionnaire was administered over the telephone at four months postpartum.

Psychopathology. Maternal psychopathology was measured on two scales. The Postpartum Depression Screening Scale (PPDS) was used to measure symptoms of depression (Beck & Gable, 2002). The PPDS is a 35-item questionnaire that is rated on a five-point Likert scale, ranging from “Strongly Disagree” to “Strongly Agree”, yielding both presence of symptoms and diagnosis. The National Women’s Study Posttraumatic Stress Disorder Module was used to measure symptoms of PTSD (NWS-PTSD; Kilpatrick, Resnick, Saunders, & Best 1989). The NWS-PTSD Module is a 21-item questionnaire that describes symptoms of PTSD and then asks whether the respondent has ever experienced these symptoms, and more specifically whether these symptoms were related to the birth of her child, about a new traumatic event, the trauma experienced in childhood, or something unrelated (Kilpatrick et al., 1989). These questionnaires were administered over the telephone at four months postpartum.

Measuring Resiliency and its Factors

Resiliency is conceptualized as the individual’s ability to maintain emotional wellbeing despite adversity (Rutter, 2007). This ability appears to depend on internal factors, such as the individual’s ability to use cognitive strategies (problem-solving and meaning-making) and spirituality to cope with trauma. However, equally important appears to be the individual’s access to a network of social support, which is an external factor. We thus conceptualized resiliency along these factors: internal markers of resiliency such as cognitive and spiritual

coping styles, and external markers of resiliency such as the ability to elicit satisfying social support from family and friends. In the following section we will define how we operationalized the internal and external resiliency factors.

Internal Resiliency

Overall Internal Resiliency. The Connor-Davidson Resiliency Scale (CD-RISC) provides a quantitative measure of resiliency after trauma and enables researchers to identify specific characteristics of resilient individuals (Connor & Davidson, 2001; Connor et al., 2003). The CD-RISC is a 25-item self-report questionnaire; each item is rated on a five-point Likert scale, ranging from “Not true at all” to “True nearly all of the time”. The instrument yields a total score and five dimensions of resiliency. Questionnaire responses are totaled with a possible range of 0 to 100, with higher scores indicating greater resilience. Sample items include: “I think of myself as a strong person when dealing with life’s challenges and difficulties” and “I am able to adapt when changes occur”. Further research on this measure has defined subgroups of items that have emerged as resiliency factors in the aftermath of trauma (Connor & Davidson, 2003; Campbell-Sills & Stein, 2007). The factors have been defined as follows (Connor & Davidson, 2003): (1) Competence: notion of personal competence, high standards, and tenacity, (2) Instincts: trust in one’s instincts, tolerance of negative affect, and strengthening effects of stress, (3) Change: positive acceptance of change and secure relationships, (4) Control: feeling in control, and (5) Spirituality: spiritual influences. The CD-RISC is administered over the telephone at four months postpartum.

In addition to using the CD-RISC scale as the total internal resiliency measure, we explored other measures that tapped into cognitive and spiritual coping. Guided by literature on cognitive coping we derived two factors, problem-solving and meaning-making, as particularly

relevant cognitive coping strategies and used them in analyses (Campbell-Sills et al., 2006; O'Dougherty Wright et al., 2007). Problem-solving coping entails efforts to manage stress and feel in control (Campbell-Sills et al., 2006). The construct of meaning-making is based on literature describing how adults are able to reflect on their past trauma experience, taking both coherence and elaboration into account (O'Dougherty Wright et al., 2007; Thoits, 1995). This provides a marker of their ability to have worked through and cope with the trauma. In the following sections we discuss further how we derived these two factors of cognitive coping.

Cognitive Coping: Problem-Solving Coping. To create the conceptually-driven construct of problem-solving coping we selected several items from the CD-RISC questionnaire that included an active approach to problem solving. We combined the seven items in the Instincts subscale, one item from the Competence subscale, and one item from the Change subscale to create a cumulative nine-item measure of problem-solving coping (see Appendix A). Each item is rated on a five-point Likert scale, ranging from “Not true at all” to “True nearly all of the time”. Sample items include: “I prefer to take the lead in problem-solving, rather than letting others make all the decisions” and “In dealing with life’s problems, sometimes you have to act on a hunch, without knowing why”. This subgroup of items ranges in scores from 0 to 36, with higher scores indicating higher problem-solving coping skills.

Cognitive Coping: Meaning Making. To examine the quality of the mothers’ narratives while discussing events surrounding the abuse experiences, we have chosen to use individual narrative discourse and content to code for mothers’ responses to interview questions. The interview questions were from the Trauma Meaning-Making Interview (TMMI), which asks women to reflect on their trauma experience (Simon, Kobielski, & Feiring, 2006). The TMMI is a semi-structured interview that assesses differences in individuals’ approach and success with

the meaning-making process. This interview asks participants to describe their experiences of maltreatment during childhood and how they currently understand these experiences. The interview, which takes approximately 20-30 minutes, is recorded on audio files and responses are transcribed verbatim. In this study the TMMI was evaluated using several different qualitative coding systems (content and discourse), tapping into the quality of the mother's narrative with a particular focus on her coherence and meaning-making while discussing the childhood trauma events. For this paper we selected three questions out of the total interview that addressed how participants remembered the trauma experience and how their feelings toward it have evolved over time. The three selected questions were: (1) "During the time the abuse was happening, what was that like for you?", (2) "Have your thoughts and feelings about these matters changed over time – either why the abuse happened or why people reacted the way that they did?", and (3) "Has there been anything or anyone that's been particularly helpful for you in dealing with these experiences?". These questions were selected based on their prompting to view the trauma from an adult perspective and to reflect on it with regard to the self and others, both major components of cognitive coping (Runtz & Schallow, 1997). Two independent research assistants used a self-developed coding system and coded participants' answers to these three questions. Coding was based on level of reflective elaboration on the topic as well as coherency of discourse, but not necessarily on narrative length. Responses were rated on a four-point scale ranging from 0 to 4, with 0 indicating no response to the question and 4 indicating a very articulate and pointed response. For example, responses that were phrased with "I think that...", "I see...", "I now...", "As time has passed..." were generally given higher scores. A sample response is provided and was given a score of 3 based on its strength in describing how the

participant's views on the abuse have evolved yet its slight lack of detail on her perspective in childhood:

“I think that as time passes and I gain more distance from it, I gain more understanding. You know, the fact that it was such a small town and people did love to talk and everyone knew everything. Like, the fact that I never knew as a kid, that everyone else knew, that's kind of surprising to me now. I would say that the thing that has popped up for me in the past couple of years that had never occurred to me before was my mom's role in the whole thing. And that, you know, she wasn't just a bystander, she condoned it on some level. I don't care if it's because she was insecure or felt powerless. Doesn't matter.”

The following response was given a score of 1, for example, based on its initial addressing of the question but its lack of reflection on her current feelings toward the abuse: “Um, it was, it was hurtful and you always had to be on guard of what you said and how you acted.”

Inter-rater reliability was established for 27 of the total 44 available interviews and was 88.9% total agreement. Total scores across all three questions yielded a composite score for cognitive coping that ranged from 0 to 12, with higher scores indicating meaning-making characterized by more justified and coherent responses. As meaning-making is meant to be a trait-marker, the time-point of assessment is irrelevant. In this study the TMMI was conducted in-person at six months postpartum.

Spiritual Coping. Finally, we explored the domain of spirituality as another aspect of internal coping. The Brief Multidimensional Measure of Religiosity/Spirituality (BMMRS) is a 40-item questionnaire focusing on various dimensions of religion and spirituality that contribute to mental health outcomes (A Report of the Fetzer Institute, 2003). The dimension of Religious and Spiritual Coping consists of seven items that pertain to religion and spirituality being both positive and negative means of coping. Responses were based on the extent to which the items were involved in coping and ranged from “A great deal” to “Not at all”. Sample items included: “I look to God for strength, support, and guidance” and “To what extent is your religion involved

in understanding or dealing with stressful situations in any way?” Scores on this dimension ranged from 13 to 28, with higher scores indicating a greater involvement of religion and spirituality in coping. Like meaning-making, spiritual coping is a trait-marker and thus the time-point at which it is measured is irrelevant. In this study the BMMRS was administered as a self-report questionnaire at six months postpartum.

External Resiliency

Social Support. Current level of social support was measured with a five-item scale called the Family APGAR and two items from the Quality of Life Inventory (FAPGAR; Smilkstein, 1978; QOLI; Frisch, Cornell, Villanueva, & Retzlaff, 1992) (see Appendix B). The FAPGAR measures an individual’s satisfaction with family as an available support system and the QOLI taps into satisfaction with general lifestyle factors, such as friendships and love relationships. Items on the FAPGAR are rated on a four-point Likert scale, with responses ranging from “Never” to “Always”. FAPGAR scores ranged from 0 to 20, with higher scores indicating a higher level of current social support. The FAPGAR has also been used in other studies examining women’s ability to adjust after stressful experiences (McLean, Harvey, Pallant, Bartlett, & Mutimer, 2004). Sample items from the FAPGAR include: “You are satisfied that your family accepts and supports your wishes to take on new activities or directions” and “You are satisfied with the way you and your family share time together”. The two selected items from the QOLI were combined with FAPGAR scores to incorporate satisfaction with friendships and a love relationship (Frisch et al., 1992). The QOLI is based on a validated model of overall life satisfaction that sums an individual’s satisfactions with particular areas of life (Frisch, 1989). An adapted nine-item version of the original 17-item QOLI is used in the MACY study and targets satisfaction with relationships and lifestyle factors

(Frisch et al., 1992). The adapted QOLI used in this study rates items on a five-point Likert scale ranging from “Very dissatisfied” to “Very satisfied”, with higher scores indicating higher satisfaction with social support from friends and a love relationship. Samples items from the QOLI include: “How satisfied are you with your love relationship” and “How satisfied are you with your friendships”. Scores from the FAPGAR and two QOLI items were summed to create this study’s social support factor providing a cumulative measure of satisfaction with family, friends, and a romantic partner. Total social support scores ranged from 0 to 30, with higher scores indicating higher satisfaction with social support. In this study the FAPGAR and QOLI scales were administered over the telephone at four months postpartum.

Results

Overview of Data Analyses

Descriptive and inferential analyses were conducted for the present study’s sample of postpartum mothers and demonstrated the impact of childhood abuse on mental health in this period. Our sample size was affected by participants either not completing all measures or not continuing with the MACY study through the time points assessed in our analyses. Thus, the sample sizes varied for measures of psychopathology and factors of resiliency. Initially, associations between demographic characteristics and symptoms of psychopathology, associations between maternal resiliency factors and symptoms of psychopathology, and associations of demographics and maternal resiliency factors with level of trauma exposure were calculated through bivariate Pearson’s r correlations. These relationships provided a framework for interpreting our sample’s characteristics and to verify the contrast between resiliency and psychopathology. Three independent samples t -tests were then run to test for differences in diagnoses of MDD, PTSD, and co-morbidity based on maternal characteristics. Two additional

t-tests were run to test for differences in exposure to any abuse and in exposure to severe abuse based on maternal characteristics.

Based on bivariate correlations between resiliency and childhood trauma and psychopathology we wanted to explore unique associations of each individual resiliency factor when controlling for the contribution of the others. For this set of analyses we conducted multiple hierarchical regression analyses predicting to MDD and to PTSD symptoms with the associated resiliency factors entered hierarchically into the model. We tested whether resiliency mediated the association between childhood trauma and adult psychopathology. In order to test for mediation, several conditions must first be met. Baron and Kenny (1986) suggest that mediation occurs if the proposed mediator reduces the previously significant relation between the predictor and criterion variables once it is added to the model. Two additional criteria must be met to test for mediation: (1) the independent variable must be significant related to the mediating variables, and (2) the mediating variables must be significantly related to the outcomes (Baron & Kenny, 1986). Thus, for each of the regression models designed to test mediational pathways, only those individual resiliency factors that satisfy the above criteria were used in the regression model.

Finally, based on the literature, annual income and resiliency (specifically social support as the only significant predictor within resiliency) were explored further to test for their possible moderating effects on the relationship between childhood trauma and psychopathology. Regression analyses were run separately for MDD and PTSD scores as dependent variables; in the first step, the total trauma score was entered, and in the next steps, the variables of interest (social support, problem-solving coping, annual income) were entered. In the final step the interaction terms (social support and annual income multiplied with abuse) were entered.

Subsequently, using the median split on the continuous income variable we created a high and low-income group. Finally, trauma (high/low; median split) and social support (high/low; median split) risk groups were cross-matched yielding four distinct categories: (a) low trauma/high social support, (b) high trauma/high social support, (c) low trauma/low social support, and (d) high trauma/high social support. Lastly, to test for the interactive effects of income and social support status on trauma effects to depression or PTSD, we contrasted depression and PTSD scores for the four risk categories in relation to income level (i.e. for the high and low-income risk level) using one-way analyses of variance (ANOVA).

Frequency of Trauma and Psychopathology

As expected, due to our participant recruitment we found high levels of childhood trauma in our sample. A total of 59.4% of participants reported having experienced some kind of abuse in childhood (including sexual, physical, and emotional abuse or neglect) and 25.8% experienced abuse levels that would qualify as severe maltreatment (see Table 2). Rates of postpartum psychopathology were also high in that 16.9% of women met a diagnosis for depression, 15.3% with a diagnosis of PTSD, and 9.3% with co-morbid depression and PTSD diagnoses (see Table 2).

Associations between Psychopathology, Resiliency, and Trauma

To test our first hypothesis that childhood trauma will have a positive relationship with postpartum psychopathology and that overall internal resiliency as well as specific internal and external resiliency factors will be inversely related with depression and PTSD symptoms, we conducted Pearson's r correlation analyses between childhood trauma, overall internal resiliency, resiliency factors, and psychopathology symptoms (see Table 3). Childhood trauma exposure was positively correlated with symptoms of depression: $r(155) = .49, p < .01$ and symptoms of

PTSD: $r(155) = .56, p < .01$. Overall internal resiliency was negatively correlated with symptoms of depression: $r(152) = -.42, p < .01$ and negatively correlated with symptoms of PTSD: $r(152) = -.34, p < .01$. This demonstrated that internal resiliency and psychopathology are contrasting traits in mental health, which formed the premise for our study. The resiliency factors of problem-solving coping and social support were negatively correlated with symptoms of MDD and PTSD at a significance level of .01, which supported our hypothesis. In addition, level of trauma was positively correlated with both depression: $r(155) = .49, p < .01$ and PTSD: $r(155) = .56, p < .01$, confirming that abuse exposure is related to psychopathology in our sample. Meaning-making produced trend-level positive correlations only. Spiritual coping with symptoms of both depression and PTSD produced nonsignificant negative correlations, which did not support our hypothesis.

Correlations between overall internal resiliency and specific internal and external resiliency factors were conducted to test our prediction that they will be negatively related to level of trauma exposure. Our prediction was supported by the inverse relationships found for problem-solving coping and social support with trauma level, but not supported due to a positive relationship found between meaning-making and trauma level and a nonsignificant correlation for spiritual coping (see Table 4). Level of trauma exposure was negatively correlated with overall internal resiliency: $r(152) = -.31, p < .05$, which supports our prediction that more severe trauma exposure is related to lower internal resiliency.

Intercorrelations between Overall Internal Resiliency and Resiliency Factors

In testing our second hypothesis that overall internal resiliency and specific internal and external resiliency factors will be intercorrelated, correlation analyses partially supported this hypothesis (see Table 5). Overall internal resiliency was positively related to spiritual coping:

$r(67) = .37, p < .01$ and social support: $r(152) = .32, p < .01$. Furthermore, the internal resiliency factors of problem-solving coping and spiritual coping were positively correlated: $r(67) = .30, p < .05$ and problem-solving coping was positively correlated with the external factor of social support: $r(152) = .28, p < .05$, which supported our hypothesis. Our hypothesis was not supported, however, for intercorrelations with meaning-making since overall internal resiliency nor any internal or external resiliency factors were significantly correlated with it. Lastly, spiritual coping was not significantly correlated with social support, which did not support our hypothesis.

Levels of Resiliency in Relation to Postpartum Diagnoses

Independent samples t-tests were run to compare the effects of overall internal resiliency and specific internal and external resiliency factors on diagnoses of either depression or PTSD. Analyses supported our hypothesis that participants with a diagnosis of psychopathology will have lower overall internal resiliency, problem-solving coping, and social support. The factors that emerged as significant in the t-tests for depression diagnosis were overall internal resiliency: $t(150) = -4.75, p = .000$, problem-solving coping: $t(150) = -4.05, p = .000$, and social support: $t(180) = -3.23, p = .001$, indicating that depression diagnosis is met with significant lower overall internal resiliency and these internal and external resiliency factors. A similar effect was found for PTSD diagnosis and overall internal resiliency and internal and external factors: overall internal resiliency $t(150) = -3.56, p = .000$, problem-solving coping: $t(150) = -3.09, p = .002$, and social support: $t(180) = -2.87, p = .005$. In contrast, our hypothesis was not supported for the factors of meaning-making or spiritual coping in that these forms of internal resiliency were not significantly decreased for participants with a diagnosis of depression or PTSD. The same trends held true for co-morbid MDD and PTSD diagnoses, as a final t-test was conducted for co-

morbidity. Like the t-tests for diagnoses of these disorders independently, overall internal resiliency: $t(150) = -3.15, p = .002$, problem-solving coping: $t(150) = -2.63, p = .009$, and social support: $t(180) = -2.91, p = .004$ were all found to be significantly lower for participants with co-morbid psychopathology.

Two additional t-tests were conducted to test the effect of trauma exposure on overall internal resiliency and resiliency factors. The first t-test indicated that those with any level of abuse exposure had significantly lower rates of overall internal resiliency: $t(148) = -2.99, p = .003$, problem-solving coping: $t(148) = -2.44, p = .016$, and social support: $t(153) = -2.12, p = .035$. The second t-test indicated that those with severe abuse exposure had significantly lower rates of overall internal resiliency: $t(148) = -2.59, p = .011$, problem-solving coping: $t(148) = -2.31, p = .022$, and meaning-making: $t(41) = 2.03, p = .049$. The analysis of severe trauma exposure differentiated from that of any level of trauma exposure in that severe abuse and meaning-making were significantly related. Therefore, meaning-making ability was higher for participants with severe abuse exposure.

Hierarchical Multiple Regressions Predicting to Psychopathology

The first model was computed predicting to postpartum depression. Bivariate correlations between social support, problem-solving coping, and household income were all significantly related to childhood trauma exposure and depression; thus, we entered all resiliency predictors into a hierarchical linear regression model to test which of the predictors remain significant when simultaneously controlling for the others (see Table 6). In step 1, trauma exposure was entered; in steps 2 and 3, social support and problem-solving coping were added; and in step 4 maternal income was added. Although maternal level of education was also related to depression symptoms, we decided to include income as the demographic variable in the model

because it was highly correlated with education ($r(115) = .70, p = .000$). None of the resiliency factors, nor income, reduced the bivariate correlation between childhood trauma and depression to non-significance; thus mediation through resiliency was not confirmed. Finally, interaction terms between level of trauma exposure and social support, problem-solving coping, and household income were entered at steps 5, 6, and 7 to test for moderation. As shown in Table 6, the final step of the regression model explained 39% of the variance in depression symptoms and the interaction terms of trauma exposure by social support and trauma exposure by income emerged as significant predictors for postpartum depression.

A second multiple hierarchical regression model was re-run predicting to PTSD; again we entered all predictors into the model that had initially shown significant bivariate correlations with PTSD symptoms (see Table 7). Household income was included in the model, although not correlated with PTSD symptoms, to test for a moderating effect. Similar to depression, we did not find that resiliency mediated the link between childhood trauma and PTSD symptoms. Testing for moderation, we entered interaction terms (trauma x social support, trauma x problem-solving coping, and trauma x income) into the model, and trauma exposure x social support and trauma exposure x income emerged as significant predictors to postpartum PTSD. The overall model accounted for 40% of the variance in PTSD symptoms.

Effects of Variables on Psychopathology

Given the significance of the interaction terms in our regression models, we continued to explore the impact of high or low social support in the context of high or low income on the link between trauma and psychopathology. Thus in the next step of analysis we explored how social support and income may interact in modifying the association between trauma and psychopathology. The participants were divided into high and low-income risk groups using the

median split on the continuous income variable. The high-income risk group consisted of all participants who had an annual income greater than \$55,000 per year, and the low-income risk group was all participants who had an annual income less than \$55,000 per year. Based on a median split of the continuous trauma exposure variable (CTQ) and social support variable (FAPGAR plus QOLI), four groups were subsequently created taking into account level of trauma exposure and social support: high trauma/low social support, low trauma low/social support, high trauma/high social support, and low trauma/high social support. We computed depression and PTSD scores for the four groups using analysis of variance (ANOVA) techniques. Tables 8 and 9 show the mean scores and standard deviations of depression and PTSD by trauma/social support group status. In the high-income group, analyses revealed a significant main effect of social support and trauma level, $F(3, 55) = 2.88, p < .05$, on depression scores (see Figure 1); whereas in the low-income group there was also a significant interaction effect in such that high social support had more protective power to decrease depression scores, particularly in the high trauma context (see Figure 3). For PTSD, we found a reversed pattern. It was in the high-income group that social support had more protective power in the context of high childhood trauma (see Figures 2 and 4).

Discussion

Resilience to childhood trauma appears to be influenced by several internal and external factors in adult life such as cognitive coping, spirituality, and social support (Berliner & Conte, 1995; Connor et al., 2003; Pepin & Banyard, 2006). Mothers abused during childhood are often reminded of their own abuse through the birth of their children, and this is particularly marked in the postpartum period (Lang et al., 2006). After giving birth, the risk of developing major depressive disorder (MDD) and posttraumatic stress disorder (PTSD) is higher for mothers who

have experienced trauma in childhood (McGloin & Widom, 2001; Widom et al., 2007). However, research suggests that a person's habitual stress coping style may mediate the effects of child abuse on later mental health functioning, and thus underlie the capacity for resilience (Collinshaw et al., 2007; Runtz & Schallow, 1997). In examining the impact of this study's resiliency factors on the relationship between childhood trauma and psychopathology, we have found that certain individual and lifestyle characteristics are indeed salient predictors of mental health for mothers during the postpartum period.

It should be noted that the rate of trauma and PTSD in our sample of postpartum mothers was particularly high compared to national studies that have examined PTSD in women. It has been estimated that 10% to 25% of women adult women report a history of childhood physical abuse, whereas 16% to 28% of women report childhood sexual assault (Resnick, 1993). The prevalence of lifetime PTSD among women in the United States has been estimated at 12.3% with 3% to 7% of mothers in the perinatal period suffering from PTSD (Kessler, 2000; Cook, Guerrerto, & Slater, 2004). In our sample, 59.4% of postpartum mothers reported being exposed to childhood trauma and 15.3% qualified for a diagnosis of lifetime PTSD, much higher than the national prevalence but explainable by the method of participant recruitment.

Study Findings and Interpretations

Trauma exposure in our sample was related to postpartum depression and PTSD. Our first hypothesis that trauma exposure would have a positive relationship with symptoms of psychopathology was therefore supported, as the degree of trauma was positively associated with depression and PTSD symptoms. This finding is consistent with past research that indicates childhood sexual and physical abuse and neglect result in a greater likelihood of developing depression later in life (Lang et al., 2006; Mullen et al., 1996; Widom et al., 2007). Posttraumatic

stress was also examined in a prior study of adult female survivors of childhood sexual abuse and it was found that one-third of its sample of CSA survivors qualified as having PTSD (Katerndahl et al., 2005). Therefore, the results from our sample add confirmatory validity to existing literature on psychopathology in adulthood.

Our analyses partially confirmed the expectation that overall internal resiliency, its specific factors of cognitive coping styles (problem-solving coping and meaning-making) and spirituality, and the external factor of social support would be inversely related to psychopathology among postpartum mothers. This hypothesis was supported for overall internal resiliency, internal problem-solving coping, and external social support but not for meaning-making or spiritual coping. The negative relationship that we found between problem-solving coping and symptoms of psychopathology mirrors past findings. An active, problem-solving approach to working through challenges has also been associated with mental health in literature that suggests control over one's life and high self-esteem can buffer the effects of stress (Campbell-Sills et al., 2006, Thoits, 1995). Furthermore, social support and a supportive partner have been regarded by previous studies as promoters of positive coping and adjustment with childhood abuse and neglect (DuMont et al., 2005; O'Dougherty Wright, Popma-Loy, & Fischer, 2005; Pepin & Banyard, 2006; Runtz & Schallow, 1997; Thoits, 1995). Our findings, therefore, are reflective of prevailing studies through the negative associations found between these resiliency characteristics and depression and PTSD.

On the other hand, our results also indicated that certain internal factors, such as the ability to communicate past aversive events and coping through spirituality do not have a strong relationship with psychopathology for postpartum women. The lack of a significant relationship between meaning-making and psychopathology is consistent with limited past research that has

found mixed results on the helpfulness of cognitive coping (Burt & Katz, 1987 as cited in Runtz & Schallow, 1997). Coping strategies that emphasize expression of emotion related to a traumatic past event (i.e. meaning-making) have been associated with better adjustment and psychological functioning, especially among child sexual abuse survivors (Himelein & McElrath, 1996; Runtz & Schallow, 1997). Conversely, they have also been associated with greater distress in victims of sexual assault (Burt & Katz, 1987 as cited in Runtz & Schallow, 1997). In addition, the nonsignificant impact of spirituality on mental health following trauma may be explained by research that illustrates the conflicting impact of religiosity on coping as it can either increase, decrease, or even be depleted in the aftermath of trauma (Connor et al., 2003; Decker, 1993; Harris et al., 2008). In summary, preliminary tests demonstrated that in this sample of mothers in the postpartum period, higher levels of childhood abuse exposure were associated with greater symptoms of depression and PTSD, yet social support and utilizing a problem-solving coping style were related to fewer pathological symptoms.

We also expected adult overall internal resiliency and resiliency factors to be inversely related to participants' levels of childhood trauma. This was supported by negative relationships for overall internal resiliency, problem-solving coping, and social support but not for meaning-making or spiritual coping. In this study, overall internal resiliency was operationalized by a cumulative measure of an individual's adaptive and proactive qualities, thus its negative relationship with trauma exposure indicated that these combined internal characteristics are reduced with the experience of severe trauma. Level of trauma exposure was related to cognitive coping styles, but in an unexpected way—it was negatively correlated with problem-solving coping (as hypothesized) yet positively correlated with meaning-making. Considering that childhood trauma may have a detrimental impact on self-esteem throughout development, it is

not surprising that the assertive and active characteristics of problem-solving coping were less represented among mothers with higher levels of abuse (Cicchetti & Rogosch, 1997; Jaffe et al., 2007).

The surprising positive relationship found between trauma level and meaning-making suggests that as the severity of childhood trauma increases, our sample's ability to reflect on and describe their experiences improves. We did not expect meaning-making to be more prevalent among mothers who qualified as having severe abuse exposure, however, this finding may be explained by the fact that a severe history of abuse can prompt more reflection and is more vivid in the memories of its survivors. Prior research on cognitive coping has overwhelmingly examined its effectiveness among both male and female adults, thus the postpartum period may be unique in that childhood trauma is expressed at this particular time with different levels of detail depending on the abuse severity (Himelein & McElrath, 1996; O'Dougherty Wright et al., 2007).

Another strong association was found between trauma exposure and social support such that participants with more severe childhood trauma reported much lower levels of social support in their adult lives. This could be attributed to feeling less able to turn to one's family or friends for support since a family member or friend may have perpetrated the abuse. Past research has also discussed how social support in adulthood can be impacted by feelings of distrust and fear in the world that follow childhood abuse (Collinshaw et al., 2007; DuMont et al., 2007; Hyman & Williams, 2001).

Our second hypothesis that overall internal resiliency and factors of resiliency would be intercorrelated was supported for each factor except meaning-making. The strong relationships that overall internal resiliency had with spiritual coping and social support demonstrated that

resiliency as a personal trait was met with increased spirituality and secure relationships among women in our sample. In contrast, spiritual coping was not significantly correlated with social support, which was surprising because literature has discussed how religiosity and participation in faith-based activities facilitates social support networks (Fowler & Hill, 2004; Harris et al, 2007). Since our approach was to examine spiritual coping in a more subjective and general manner, its trend-level link with social support may be explained by the fact that we did not look specifically at level of organized religious involvement.

As for the remaining internal and external resiliency factors, problem-solving coping was positively related to spiritual coping and social support, suggesting that in our sample the internal attribute of assertiveness is related to both resilient individual and social traits. The strong positive relationship between problem-solving coping and spirituality suggests that religiosity among mothers in the postpartum period is linked with strength and confidence in personality. Literature that discusses trauma survivors' turn to faith or spirituality for strength in coping supports this finding that spirituality facilitates trust and control for trauma survivors (Connor et al., 2003; Decker, 1993; Fallot, 1997; Fowler & Hill, 2004). Similarly, having secure relationships was related to problem-solving coping characteristics, implying that in the face of trauma perhaps the initiative required in maintaining relationships can carry through to being part of an individual's personality as well.

With internal and external resiliency factors being related to each other, it appears that helpful attitudes and relationships while coping may be available in conjunction for resilient maternal survivors of childhood abuse. Of particular interest is the role of social support in the aftermath of trauma, because problem-solving coping, spiritual coping, and trauma exposure were all significantly correlated with this style of coping. Having strong and secure relationships

with family, friends, and a romantic partner in postpartum women appears to often co-exist with internal strength-based traits that are protective against psychopathology.

The final analyses included both internal and external characteristics of resilience, which enabled us to simultaneously relate specific helpful personality and lifestyle traits with psychopathology. Our third hypothesis that both internal and external resiliency factors (i.e. cognitive coping styles, spirituality, and social support) would have either mediating or moderating effects on the relationship between childhood adversity and postpartum psychopathology was only partially supported. In contrast to prior work, we did not find any mediating effect of resiliency to the link of childhood trauma to psychopathology (Runtz & Schallow, 1997).

Runtz and Schallow (1997) found social support to be the strongest mediator between childhood sexual and physical abuse and adult psychological adjustment. The present study, however, found social support to be a moderator between childhood trauma and both depression and PTSD in adulthood. A few potential reasons may account for this difference and are valuable to consider when placing this paper within the context of prevailing literature. Runtz and Schallow (1997) used a sample that consisted of about two-thirds women and all participants were university students, thus a more gender-diverse sample and younger cohort. Furthermore, while we predicted resiliency factors to depression and PTSD, their study predicted to psychological adjustment, measured by a symptom inventory of psychiatric distresses and a self-esteem inventory (Runtz & Schallow, 1997). Overall, their results suggested that how one copes with trauma as an adult through social support might actually be more relevant to adjustment than the severity of the maltreatment itself. Our study, rather, suggests that social support

weakens the relationship between abuse and psychopathology, and thus is protective against depression for postpartum women with aversive histories.

The moderation we found from social support in the link from trauma to psychopathology existed both for depression and PTSD. Additionally, we found that the income level influenced this moderating effect of social support. For low-income mothers, social support in the face of past trauma exposure protected them from depression; while this social support-derived protection was evident for PTSD symptoms only among the high-income mothers. For all mothers recovered from childhood trauma, the postpartum period may induce more negative feelings and memories of their past experiences. In this study we demonstrate that adjusted for severity of trauma, the income level and the amount of social support an individual has access to will translate into one's ability to be highly functioning and stay mentally healthy despite past abuse.

Study Limitations

The limitations of the present study should be taken into consideration when interpreting our results on the psychological outcomes of childhood trauma. Due to the differences in our sample sizes for each factor of resiliency, our results may have been influenced by the lower sample sizes for meaning-making and spirituality. These factors may have produced stronger outcomes in our data analyses had their numbers of participants been greater and more proportionate to our sample sizes for overall internal resiliency, problem-solving coping, and social support. Furthermore, their relationships with level of trauma exposure may have coincided better with our hypotheses had their sample sizes been larger.

Another limitation is that this study's measure of problem-solving coping was conceptually driven and drew from items in our measure of overall internal resiliency. Since

items were shared for both problem-solving coping and overall internal resiliency, we could not report analyses with them together because results would have been redundant. Our conceptually-driven measure of meaning-making could also have contributed to the few conclusions drawn from this style of coping. Meaning-making was examined from qualitative data and the questions that had been coded may not have accurately addressed our interest or been coded based on the strongest criteria for this form of cognitive coping.

Lastly, the demographic characteristics of our sample may not be generalizable to all women or mothers, since our participants were predominately Caucasian, middle-class, and partnered women. Although our sample also represented a fair percentage of minority and low-income women, the contrasts between demographic characteristics in our sample may have influenced our results, especially those including social support (since this included romantic relationships) and income level. It should also be noted that we did not include assessments of mental illness or environmental stressors unrelated to abuse or neglect in the participants' childhoods. Though the nature of the study was to examine severity of childhood trauma and outcomes in adulthood, our measures did not include items directly related to household substance abuse, behavior, or psychological wellbeing in childhood. Had our measures included items that examined such histories, we would have been able to draw conclusions on the trajectory of psychopathology and resilience from childhood to postpartum, thus ensuring that our results are not exclusive to the postpartum period.

Conclusion

The benefit of social support in dealing with major life stressors is profound—interpersonal relationships with family, friends, and significant others can be protective against psychological distress resulting from trauma (Campbell-Sills et al., 2006; DuMont et al., 2007).

This study's goal of de-constructing resilience through examining both internal and external strength-based traits enabled us to identify the importance of social support to postpartum mothers. While ultimately it was the external prevalence of supportive close relationships that was met with fewer depression symptoms, the internal qualities of assertiveness and feeling in control also emerged as helpful in adaptively coping with trauma. While the severity of childhood trauma experiences and current financial state are also salient in predicting adult mental health, social support is the common denominator in facilitating positive psychological outcomes. In turn, future research should examine the various definitions of resilience and make attempts to encompass positive adaptation in both the internal and external senses. Increased attention in literature should also be paid to mothers in the postpartum period, especially with regard to resiliency and helpful factors in coping with aversive histories. As advancements are made in research on the attributes of resilient trauma survivors, clinicians and survivors themselves will become better informed on traits that can facilitate "bouncing back" from trauma. With the aim of the present and future studies to identify ways to offset the risk of psychopathology among trauma survivors, it is our hope that the experience of trauma will increasingly be met with internal strength and external support.

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Appendix A

Problem-Solving Coping Items

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Appendix B

Social Support Items

“You are satisfied that you can turn to your family for help when something is troubling you.”

“You are satisfied with the way your family talks over things with you and shares problems with you.”

“You are satisfied that your family accepts and supports your wishes to take on new activities or directions.”

“You are satisfied with the way your family expressed affection and responds to your emotions, such as anger, sorrow, and love.”

“You are satisfied with the way you and your family share time together.”

“How satisfied are you with your love relationship?”

“How satisfied are you with your friendships?”

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Table 1

Demographic Characteristics of the MACY Population

Characteristics	Category	Value
Mother's Age		$M = 28.62$ ($SD = 5.32$)
	≤ 21 years old	5.2%
Race	Caucasian	62.2%
	African American	23.4%
	Latina	2.7%
	Asian	6.3%
	Bi-Racial	3.6%
Annual Household Income	< \$25,000/yr	28.6%
	\$25,000-\$49,999/yr	36.0%
	\$50,000-\$99,999/yr	11.7%
	≥ \$100,000/yr	18.7%
Educational Level	Less than Bachelor's Degree	42.6%
	More than Bachelor's Degree	57.4%
Marital Status	Partnered	79.1%
	Single	20.9%

Note: “Partnered” refers to participants who are either married, living with the birth father, or living with a partner but not the birth father. “Single” refers to participants who either are separated or never married.

Table 2

Frequencies of Childhood Trauma Exposure and Postpartum Psychopathology

Variables	Value
Trauma Exposure	59.4%
Severe Trauma Exposure	25.8%
Psychopathology	
MDD Diagnosis	16.9%
PTSD Diagnosis	15.3%
Co-morbid MDD and PTSD	9.3%

Note: *n* ranges from 155-182 due to missing data

Table 3

*Correlations Between Postpartum Psychopathology, Resiliency, and Childhood Trauma**Exposure*

Variable	<i>n</i>	MDD Symptoms	PTSD Symptoms
Demographics			
Mother's Age	115	-.10	.12
Education	115	-.26**	-.12
Household Income	112	-.28**	-.10
Overall Internal Resiliency	152	-.42**	-.34**
Cognitive Coping			
Problem-Solving Coping	152	-.36**	-.27**
Meaning-Making	44	.11	.14
Spiritual Coping	67	-.12	-.22
Social Support	182	-.30**	-.31**
Trauma Exposure	155	.49**	.56**

*Note: *p < .05, **p < .01*

Table 4

Correlations Between Resiliency and Trauma Exposure

Variables	<i>n</i>	Trauma Exposure
Demographics		
Age	115	.189
Education	115	-.23*
Annual Income	112	-.12
Overall Internal Resiliency	152	-.31**
Cognitive Coping		
Problem-Solving Coping	152	-.27**
Meaning-Making	44	.35**
Spiritual Coping	67	-.10
Social Support	182	-.30**

Note: * $p < .05$, ** $p < .01$

Table 5

Intercorrelations Between Overall Internal Resiliency and Resiliency Factors

Variables	1	2	3	4	5
1. Overall Internal Resiliency	--	-.18	.92**	.37**	.32**
2. Meaning-Making		--	-.21	-.26	.07
3. Problem-Solving Coping			--	.30*	.28**
4. Spiritual Coping				--	-.02
5. Social Support					--

Note: * $p < .05$, ** $p < .01$; The correlation between Overall Internal Resiliency and Problem-Solving Coping is strong due to overlap in items they are measured with.

Table 6

Hierarchical Linear Regression for Factors Predicting MDD

Predictors	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Step 1							
Trauma Exposure	.52**	.48**	.41**	.41**	.91**	.64	.61
Step 2							
Social Support	--	-.13	-.11	-.09	.25	.30	.39*
Step 3							
Problem-Solving Coping	--	--	-.22	-.18	-.17	-.36	-.27
Step 4							
Household Income	--	--	--	-.18*	-.18*	-.17	-.72**
Step 5							
Trauma Exposure X							
Social Support	--	--	--	--	-.54*	-.66*	-.83**
Step 6							
Trauma Exposure X							
Problem-Solving Coping	--	--	--	--	--	.36	.21
Step 7							
Trauma Exposure X							
Income	--	--	--	--	--	--	.66*
R ² Change	.27**	.02	.04*	.03*	.04*	.00	.04*

R ² Total	.26**	.27**	.30**	.33**	.36**	.35**	.39**
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Note: Numbers in matrix for Steps 1 to 7 represent standardized β coefficients.

* $p < .05$, ** $p < .01$

Table 7

Hierarchical Linear Regression for Factors Predicting PTSD

Predictors	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7
Step 1							
Trauma Exposure	.61**	.56**	.54**	.54**	.93**	.67	.64
Step 2							
Social Support	--	-.16	-.16	-.16	.10	.15	.22
Step 3							
Problem-Solving Coping	--	--	-.06	-.06	-.06	-.23	-.17
Step 4							
Household Income	--	--	--	.02	.02	.02	-.42
Step 5							
Trauma Exposure X							
Social Support	--	--	--	--	-.42	-.53	-.67*
Step 6							
Trauma Exposure X							
Problem-Solving Coping	--	--	--	--	--	.35	.23
Step 7							
Trauma Exposure X							
Income	--	--	--	--	--	--	.53*
R ² Change	.37**	.02	.00	.00	.02	.00	.03*

R ² Total	.36**	.38**	.38**	.37**	.38**	.38**	.40**
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Note: Numbers in matrix for Steps 1 to 7 represent standardized β coefficients.

* $p < .05$, ** $p < .01$

Table 8

Mean Scores (and Standard Deviations) on Depression and PTSD for the High-Income Group by Trauma/Social Support Status

Trauma/Social Support Status	Score	
	Depression	PTSD
High Trauma/Low Social Support	73.25 (25.24)	6.13 (5.14)
Low Trauma/Low Social Support	59.86 (26.13)	2.00 (2.89)
High Trauma/High Social Support	64.12 (17.11)	4.00 (3.54)
Low Trauma/High Social Support	52.08 (16.16)	1.46 (1.47)

Table 9

*Mean Scores (and Standard Deviations) on Depression and PTSD for the Low-Income Group
by Trauma/Social Support Status*

Trauma/Social Support Status	Score	
	Depression	PTSD
High Trauma/Low Social Support	84.38 (25.46)	6.31 (4.84)
Low Trauma/Low Social Support	60.09 (20.92)	2.91 (3.78)
High Trauma/High Social Support	68.36 (11.05)	3.86 (3.44)
Low Trauma/High Social Support	64.50 (16.85)	1.10 (1.29)

Figure Captions

Figure 1. Mean depression scores for high-income mothers by level of trauma exposure and social support.

Figure 2. Mean PTSD scores for high-income mothers by level of trauma exposure and social support.

Figure 3. Mean depression scores for low-income mothers by level of trauma exposure and social support.

Figure 4. Mean PTSD scores for low-income mothers by level of trauma exposure and social support.









