

Spring 5-1-2015

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Not Just For Veterans:

Posttraumatic Stress Disorder in Mothers and its Effect on Adolescents

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Undergraduate Honors Thesis

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ABSTRACT

There is a large body of research on the effects of maternal depression on child and adolescent outcomes. Although studies on depression are abundant, similar studies on maternal Posttraumatic Stress Disorder (PTSD) are lacking. In this study, I examined the role of maternal PTSD on parenting and adolescent measures, controlling for comorbid depressive symptoms, using MANCOVA analysis. Participants included 194 low-income mother-adolescent dyads involved in a larger study on the cultural context of health disparities. The following outcome domains were examined: a) adolescent mental health (e.g., depression, PTSD); b) adolescent risk behavior (e.g., sexual risk-taking, substance use); and c) adolescent-parent relationship quality (e.g., maternal warmth and hostility, maternal preoccupation and dismissiveness). Overall, there were few differences between women with and without Posttraumatic Stress Disorder after controlling for maternal depressive symptoms. The one possible exception was risky sexual behavior, with adolescents in families with a mother with PTSD reporting greater sexual risk behavior. Implications of the study and future directions for research are discussed.

Not Just For Veterans:

Posttraumatic Stress Disorder in Mothers and its Effect on Adolescents

Mental health is a serious concern for individuals of all socioeconomic and demographic areas, but low-income women are at an increased risk for a number of mental health problems, including Major Depression and Posttraumatic Stress Disorder. A 2007 study using the Kessler 6 Model for the Behavioral Risk Factor Surveillance System (BRFSS) found that of the 40% of subjects responding they had suffered from serious non-specific psychological distress, a significant proportion were women and/or lived in poverty (“Non-specific,” 2013). The impact of conditions that cause psychological distress on morbidity, mortality, and quality of life has been well documented (“Promoting Mental,” 2004). For women who are mothers, these mental health conditions may also have an intergenerational effect. Maternal depression is particularly widespread among low-income women of child-bearing age, with prevalence rates estimated between 15% to 20% of women between 25 and 45 years of age (Patten et al. 2010).

There currently exists a wide body of research documenting the various ways maternal depression may impact parenting and child development. However, much less is known about how maternal Posttraumatic Stress Disorder relates to parenting. This is potentially due to the fact that it is a much less prevalent disorder among the United States population and has been typically conceptualized as a disorder affecting primarily soldiers and veterans. Although research on this area is limited, there is growing evidence that Posttraumatic Stress Disorder symptoms can also have distinct effects on

child outcomes beyond that of other related mental health disorders like Major Depression (Leen-Feldner et al., 2011).

In addition to limited research in this area, most studies examining the impact of maternal mental health on parenting and child outcomes have focused on younger children. Parenting adolescents raises distinct challenges, and some of these challenges may be particularly difficult for women with Posttraumatic Stress Disorder. In particular, adolescence is a time of increased autonomy seeking and involvement in peer and romantic relationships. In addition, it is a period in which there are normative increases in parent-adolescent conflict. Consequently, this period may involve different challenges (e.g., negotiating independence) than mothers of younger children face. Although understudied, it seems possible that these types of challenges may be particularly difficult for women with PTSD symptoms. For example, a common symptom of PTSD is wariness of surroundings and hypervigilance. For a mother with PTSD, this may mean that she is less willing to let her adolescent child explore her environment in age appropriate ways (e.g., stay out later, go places unsupervised, etc.).

In this study, I examine the additive and unique effects of maternal PTSD symptoms on multiple measures of adolescent functioning and parent-adolescent relationships, beyond the association with comorbid depressive symptoms in a sample of low-income mother-daughter dyads. Identifying specific ways that maternal PTSD relates to adolescent and family functioning can provide important insights into targeted prevention and intervention efforts.

Maternal Depression and Parenting

According to the newest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM V), Major Depression is defined as suffering from at least five of

the following symptoms all or most days during the same two-week period (one of which must be depressed mood or loss of interest or pleasure): depressed mood; markedly diminished interest or pleasure in all, or almost all, activities; significant weight loss when not dieting or weight gain, or decrease or increase in appetite; insomnia or hypersomnia; psychomotor agitation or retardation; fatigue or loss of energy; feelings of worthlessness or excessive or inappropriate guilt; diminished ability to think or concentrate, or indecisiveness; recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt. Additionally, these symptoms cannot be due to direct physiological effects of a substance or general medical condition, and must cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (“Criteria for Major,” 2015).

Starting in early adolescence, Major Depression disproportionately affects women. According to Goodman and Tully (2008), six to seventeen percent of women will experience a single episode of Major Depression at some point in their lives, which does not include the likelihood of recurring episodes throughout adulthood. This statistic is between one and a half to three times higher than the rate among men. The high rate of depression among women is concerning in and of itself – certainly steps should be taken to decrease its prevalence for the sole reason of alleviating the individuals’ mental suffering. However, the high prevalence rate among women of this age group is additionally alarming because so many of these women are mothers. Thus, it is important to assess how maternal mental health affects that of her child.

Parents influence every aspect of that child’s development (e.g., intellectually, socially, psychologically). Thus, if the parent has a mental illness, it is highly likely that the child’s development will be impacted. In fact, this association has been well

researched and documented across various publications (for review, see Goodman et al., 2011). For example, findings demonstrate that “by middle childhood, children with depressed mothers have significantly higher rates of not only mood disorders but also of other internalizing as well as externalizing problems and other difficulties in emotional development relative to children whose mothers are not depressed” (Goodman et al., 2011, p. 1). Within this body of research, there is evidence that maternal depression impacts mother-child relationship quality (Jacob & Johnson 1997), child academic achievement, child physical health (Turney 2011), and child adjustment (e.g., mental health and risk behavior) (Foster et al., 2007; Goodman & Gotlib 1999). There are multiple mechanisms by which maternal depression may have this affect on children, including genetic, biological, parenting deficits, and shared risk factors (e.g., poverty, exposure to negative life events). Although no definitive conclusions have been made, increasing evidence has been found to support the heritability of depression through several possible genetic markers, particularly for the cyclic nucleotide response element-binding protein gene (CREB1), the serotonin transporter gene (5HTTLPR) (Goodman 2007), and dopamine receptors (Tamatam et al., 2012). Research suggests that all of these mechanisms likely come into play and often interact in the transgenerational transmission of depression.

One study has shown that the maternal behavior of depressed mothers – which is “often characterized as less responsive, more helpless, hostile, critical, alternatively disengaged or intrusive, disorganized and less active, avoidant of confrontation, and generally less competent” (Petterson & Albers 2001) – results in their children scoring significantly lower on the General Cognitive Index than children with non-depressed mothers during infancy (Petterson & Albers 2001). Patterson (1982) furthered these and

similar findings with his proposal that a child's behavior problems result not from a single individual's (i.e., the mother) pathology, but rather from the entire family's dysfunctional reactions to each other.

Maternal depression and child problems may also be mutually reinforcing over time. Self-report studies demonstrated that "depressed mothers perceived more difficulty in the parenting role than nondepressed mothers" (Lovejoy et al., 2000), even if the actual stressors are controlled for between subjects. This data is crucial in the understanding that despite the actual events that occur as a parent, depressed mothers perceive more difficulty, which implies that depressed mothers may experience their child as more difficult or parenting as more stressful. This also means that for depressed mothers, common events become stressful situations, which may not be handled positively due to the mother's depressive symptoms. This can in turn create a negative self-image of themselves as mothers (Goodman & Tully 2008), thus contributing to more depressive symptoms. Goodman and Tully (2008) also describe similar negative cognitions associated with maternal depression, including lower confidence in their positive influences over their children and even more negative, critical views of their children (Goodman & Tully 2008). These cognitions negatively influence a mother's parenting, in ways that both harm the parent-child relationship and increase the likelihood of depression or other internalizing or externalizing disorders in the child.

Maternal depression's effect on parenting can manifest itself in various ways, including inattentiveness to the child's needs, lack of appropriate involvement, high levels of irritability and anger and low levels of enthusiasm and energy (Lovejoy et al., 2000). Many researchers consider these outcomes directly correlated to the symptoms of the mother's depression. Decreased or lack of interest in activities is one of the most

common symptoms of depression, and could clearly create the mentioned parenting behaviors. Other studies have found that depressed mothers exhibit less sensitivity toward their children, use harsher punishments or coercive techniques with their children, and overall disengage from the parent-child relationship (Farmer & Lee 2011). These factors all play a huge role in the mother's emotional behavior towards her child, which in turn influences the infant's attachment style. Many studies conducted on the particular issue have found that maternal depression increases the risk of the child developing insecure attachment in infancy (Carter et al., 2001). Insecure attachment, while also influencing the child's future social skills and interpersonal relationships, has been positively correlated with depressive and anxious symptoms later in life (Jinyao et al., 2012).

Maternal depression and its subsequent effects on parenting behavior have a significant influence on the prevalence of poor mental health in their children. According to a meta-analysis conducted by Goodman and Tully (2008), the rate of depression in school-aged and adolescent children with depressed mothers ranges from 20% to 41%. The variability of that range is explained by differing factors in each study (e.g., severity of parental depression, whether paternal depression is also being examined, sociodemographic variables) (Goodman & Tully 2008). In comparison, the prevalence of depression among children and adolescents has been estimated at "1.9% to 3.4% for primary school children [and] 3.2% to 8.9% for adolescents," (Mehler-Wex & Kölch 2008).

Many studies have found that negative child outcomes resulting from maternal depression has a basis in the mother's behavior. One study in particular hypothesized that treating the mother's depression would have a "trickle-down" effect on the child's

depression, and found that “decreases in parents’ depression were associated with better child functioning” (Garber et al., 2011). There has also been a growing body of research of the genetic transmission of depressive vulnerabilities. Goodman and Gotlib (1999) posit two possible mechanisms for the transgenerational transfer of depressive symptoms: first, children born to mothers who have or have been depressed inherit DNA that is physically and crucially different than DNA of nondepressed mothers, which leads to specific biological mechanisms that increase their vulnerability to depression. Secondly, children born to depressed mothers inherit genetic vulnerabilities to personality, cognitive, and interpersonal characteristics that in turn increase the risk of developing depression. Research supporting these claims has been well documented, and one study of particular merit conducted by Weissman et al. (1987) found that “early-onset depression in a mother (i.e., before age 20) was associated with a 14-fold increase in the risk of onset of major depression before age 13 years in their children” (Goodman & Gotlib 1999).

Although not as widely studied, there is evidence to support the claim that maternal depression has a negative impact on adolescent outcomes. As children approach adulthood, depressive symptoms become more similar. Depressed adolescents exhibit problems with achievement, self-esteem, and interest in activities, as well as withdrawal, irritability, and potential suicidality (Mehler-Wex & Kölch 2008). According to a study conducted by Halligan et al. (2007), adolescents whose mother suffered from post-natal depression were three times more likely to experience depressive symptoms themselves (Halligan et al., 2007; Gelfand & Teti 1990). According to Gelfand and Teti (1990), adolescent daughters with depressed mothers were more likely to show a consistent dysphoric affect, while adolescent daughters with nondepressed

mothers more often expressed happiness. In addition to poor mental health, adolescents born from depressed mothers also suffer from increased risk for either conduct disorder or oppositional defiant disorder, as well as statistically lower IQ scores (Hay et al., 2008).

Posttraumatic Stress Disorder and Parenting

Clearly the research and literature on maternal depression and its effect on parenting is broad. In contrast, relatively few studies take into account that depression is often comorbid with other mental health symptoms. Particularly among women, depression often co-occurs with anxiety disorder and/or Posttraumatic Stress Disorder. While it is important to understand isolated depression's effect on parenting, studying the comorbidity of depression with other mental health disorders would increase generalizability and practicality of the research.

While earlier editions of the Diagnostic and Statistical Manual of Mental Disorders categorized Posttraumatic Stress Disorder (PTSD) as an anxiety disorder, the newest edition has moved it to a new chapter on trauma and stress or related disorders. The new manual defines posttraumatic stress disorder as “clinically significant distress or impairment in the individual’s social interactions, capacity to work or other important areas of functioning” triggered by an “exposure to actual or threatened death, serious injury or sexual violation” (“Posttraumatic Stress,” 2013). The new criteria for the exposure include directly experiencing the event, witnessing the traumatic event in person, learning the event occurred to a close friend or relative, or experiencing repeated or extreme exposure to the aversive details of the event. Similar to the definition of depression, the symptoms cannot be the result of another medical condition, medication, or other controlled substance.

According to this definition, a study conducted by Kilpatrick et al. documented the prevalence of Posttraumatic Stress Disorder among civilians in the United States. Participants were recruited from an online panel, and using the National Stressful Events Survey (created by Kilpatrick, Resnick, Baber, Guille, & Gros, 2011) to measure Posttraumatic Stress Disorder within the last 6 months, 12 months, and over the lifetime, the researchers found that 9.4% of the population has suffered from this diagnosis (Kilpatrick et al., 2013). Further analyses showed that the prevalence of PTSD is more than double in females than males, with rates of 12.8% and 5.7% for an occurrence within the lifetime, respectively. Some evidence to support the reason behind the differential rates of PTSD between men and women is the increased self-report of stressful or traumatic situations among women (Kilpatrick et al., 2013). These statistics are important to consider environmental and societal factors that may be influencing these occurrences, as well as regarding the effect of this diagnosis on maternal behavior.

To date, there has been very little research on how Posttraumatic Stress Disorder symptoms affect parenting. In a review of the literature four relevant studies were found. These are described below.

A study conducted by Abramovitz et al. (2010) focused on the effects of maternal Posttraumatic Stress Disorder and Major Depression together on children exposed to the World Trade Center attacks. The researchers grouped mothers according to whether they had a) neither depression nor Posttraumatic Stress Disorder; b) depression alone; or c) both depression and Posttraumatic Stress Disorder. The study found that children whose mothers had both depression and Posttraumatic Stress Disorder displayed significantly more behavioral problems (e.g., emotionally reactive, aggressive behavior) and psychological problems (e.g., anxious/depressed behavior, withdrawn behavior) than

children whose mother had depression alone or neither disorder (Abramovitz et al., 2010). It was not clear, however, if this was because of the severity of symptoms that typically comes with being comorbid, or if some of the outcomes were specifically related to PTSD symptoms.

Lambert et al. (2014) conducted a meta-analysis aimed to find the effect size of parent's Posttraumatic Stress Disorder severity and child psychological and behavioral distress. The included studies were split into two groups: one with both parents and children having experienced a traumatic event, and one with only parents having experienced a traumatic event. After an initial analysis displayed no significant difference between the groups, the rest of the analyses were conducted on the total sample of studies. The meta-analyses found that parents' Posttraumatic Stress Disorder "negatively correlates with parental functioning and positively correlates with parenting stress, degree of conflict with children, and severity of discipline," all resulting in child psychological and behavioral distress (Lambert et al., 2014).

Another interesting study by Vogel (1994) posited that females are more likely to acquire the Posttraumatic Stress Disorder symptoms of their mothers. She bases this off of Jordan et al.'s (1991) "Self-In-Relation" model. The theory states that females uniquely develop their sense of self through empathy and compassion with their mothers. The projected identification with their mothers results in the transmission of the trauma experience to the children, thus developing psychological distress (Baranowsky et al., 1998).

Researchers Leen-Feldner, Feldner, Bunaciu, and Blumenthal (2011) acknowledge the lack of research that separates the effects of parental Posttraumatic Stress Disorder from other psychological conditions regarding their effect on offspring

adjustment. Their study attempted to control for comorbidity in order to see the effects of parental Posttraumatic Stress Disorder on both parental aggression and child psychological problems. Their study found that parents with Posttraumatic Stress Disorder were significantly more likely to endorse both moderate (72.5%) and severe (4.4%) parenting aggression than parents without Posttraumatic Stress Disorder (62.5% and 2.4%, respectively). The study also found that the rates of parents with PTSD who report their child as experiencing problems with anxiety (3.1%) or depression (3.7%) was significantly higher than the rates of parents without the disorder (Leen-Feldner et al., 2011).

Current Study

It is particularly important to address comorbidity in Posttraumatic Stress Disorder and Major Depression symptoms in populations in which both might be likely, for example low-income mothers living in more dangerous communities. Because these symptoms are often comorbid, it is important to control for depressive symptoms to determine potentially distinct effects that PTSD symptoms may pose to adolescent outcomes. In this study, I examine the relation between Posttraumatic Stress Disorder and various measures of parenting and adolescent adjustment. To date, the few studies that have examined Posttraumatic Stress Disorder and parenting have focused on younger children, yet adolescents often have different developmental issues and needs that may cause specific problems for mothers with a Posttraumatic Stress Disorder diagnosis (e.g., the desire to go out independently, interest in romantic relationships).

Because of the lack of current research on PTSD symptoms and parenting, particularly among adolescent children, the goal of this paper is to better understand if Posttraumatic Stress Disorder symptoms are associated with certain parenting and

adolescent measures beyond associations with maternal depression. The following three types of outcomes will be examined in this study: a) adolescent mental health (e.g., depression, PTSD); b) adolescent risk behavior (e.g., sexual risk, substance use); and c) adolescent-parent relationship quality (e.g., maternal warmth and hostility, maternal preoccupation and dismissiveness).

Methods

Participants and Procedures

Study participants included 194 adolescent girls and their mothers (or primary female caretaker) residing in a mid-sized, low-income city in the Northeast US. In 95% of dyads, the caretaker was the biological mother. These families were participating in a larger NIH-funded study aimed at understanding the cultural and relational context of health disparities among adolescent girls. Adolescent girls entering 9th through 11th grade were eligible for participation, with the average age at 15.4 years (SD=1.05; Range = 13-17). Fifty-eight percent of participants identified as Latina (primarily Puerto Rican), 26% as African-American/Black, and 16% as non-Hispanic, White. In 27% of families, at least one parent was born outside the U.S., and another 18% were born in Puerto Rico. Of the adolescents, 8% were born outside the U.S. and 11% in Puerto Rico. Thirty percent of homes included both biological parents at the time of participation. Educationally, 22% of mothers had not completed high school, 67% had a high school degree, and 11% had a bachelor's degree. The majority of adolescents (87%) qualified for free or reduced lunch at school. Sample characteristics (e.g., racial/ethnic composition, % free lunch) are consistent with data about the demographic makeup of the city.

Participants were recruited from city schools, community centers, health centers, YWCA, local media outlets, and word-of-mouth. Interviews were conducted in English and Spanish (20%) based on participant preference. Interviews were available in Polish to accommodate one of the largest immigrant groups in the area, although no mothers chose this option. When possible, measures were selected that have been validated with Spanish-speaking populations in previous studies. All measures were translated and back-translated and then piloted with local residents in an iterative process, following recommendations by the World Health Organization. Mothers and daughters participated separately in a semi-structured interview, which was audiotaped and later transcribed verbatim, and then completed survey instruments privately using Audio Computer Assisted Survey Instruments (ACASI) programmed in their preferred language. Next, mothers and daughters participated in a videotaped dyadic interaction task. Interviews took approximately 2 hours, and participants were paid \$40 each for their time. All procedures were approved by the University of Connecticut Institutional Review Board.

Measures

Demographic. Mothers provided detailed demographic information. Maternal education, marital status, receipt of public assistance housing, receipt of free/reduced lunch, and food insecurity were used to reflect socioeconomic differences. Mothers and daughters indicated all of the racial/ethnic groups they identified with, and mother's also reported on birthplace for their daughter, themselves, and their parents. For the current purposes, the primary race/ethnicity selected by the daughter was used for analysis comparing racial/ethnic groups. However, because 12% of girls identified with more than one racial/ethnic group, all racial/ethnic comparisons were conducted using

race/ethnicity as mutually exclusive groups and then with dummy coded variables that allowed for multiple racial/ethnic identifications to ensure consistent results.

Maternal warmth and hostility. Adolescents reported on mother-daughter relationship quality using the Quality of Parental Relationships Inventory (Conger, Ge, Elder, Lorenz & Simons, 1994) as adapted for use by the NICHD Study of Early Child Care. The measure includes 17 items reflecting support/warmth (9 items, $\alpha = .92$) and hostility (8 items, $\alpha = .83$). Responses are on a 5-point scale with higher scores reflecting greater warmth or hostility.

Mother-daughter communication. Mothers and adolescents answered parallel items about the frequency of communication in seven areas, including school, college, jobs/career, friends, dating, sex, and substance use (adapted from Wills et al., 2003). Frequency items are on a 1-4 scale, with higher values reflecting more frequent communication. Mean scores for mothers ($\alpha = .75$) and adolescents were used ($\alpha = .76$) in analysis.

Parental monitoring. Mothers *and* adolescents answered parallel items from Stattin and Kerr (2000) widely used measure of parental monitoring, which assesses parental knowledge of the adolescent's whereabouts, activities, and associations from both the parent and adolescent perspective (e.g., "How much do your parents know what you do during your free time?"). Response scales range from 1 (nothing) to 5 (*everything*). In the current sample, alpha estimates for responses from mothers (6 items, $\alpha = .78$) and adolescents (6 items, $\alpha = .80$) were good.

Preoccupied and dismissive relationship style. Domains from the Behavioral Systems Questionnaire (BSQ; Furman & Wehner, 1999) were used to reflect adolescents' preoccupied and dismissive relationship style with parents. The concept of relational

styles is conceptually similar to adult attachment anxiety and avoidance in reflecting attitudes towards intimacy and closeness within close relationships. An example of a dismissing item is, “I rarely turn to my mother when upset”; an example of a preoccupied item is, “I get too wrapped up in my mother’s worries”. In previous studies, these domains relate to mother and child reports of relationship characteristics in ways consistent with attachment theory (e.g., Branstetter, Fuman & Cottrell, 2009), with higher scores increasing the risk for psychopathology (e.g., Milan, Zona & Snow, 2013). Adolescents responded separately for maternal preoccupation (5 items, $\alpha = .69$), paternal preoccupation (5 items, $\alpha = .72$), maternal dismissiveness (5 items, $\alpha = .68$), and paternal dismissiveness (5 items, $\alpha = .74$). Higher scores reflect more preoccupation and dismissiveness.

Negative life events. Adolescents were asked to indicate whether they had experienced ten events (e.g., witnessing an assault, being in a serious accident) selected from several PTSD Criterion A events list (e.g. Foa et al., 2001; Ford et a., 2000). Events deemed very uncommon in this population (e.g., exposure to war) were eliminated. For each item, adolescents reported whether the event had ever occurred to them and, if so, if it happened in the last year. A total count of events in the last year was used to reflect recent exposure to negative life events.

Individual risky behavior. Adolescents were asked five questions about sexual activity from the Student Health Questionnaire (Coyle et al., 2004) and six questions about sexual activity and substance use from the CDC Youth Risk Behavior Surveillance System (YRBS; Eaton et al., 2011). Sexual items asked whether the adolescent had yet engaged in specific acts (e.g. vaginal sex) and about sexual history (e.g., number of partners). For the current purposes, a count of nine potentially risky sexual activities

(e.g., performed oral sex, sex without protection, sex with more than one partner) was computed, with higher scores reflecting more sexual activity. One item from the YRBS, drinking alcohol in the last 30 days, was used as an indicator of recent substance use.

Mental health. Adolescents completed the 17-item Child Posttraumatic Stress Symptoms (PTSS; Foa, Johnson, Feeny & Treadwell, 2001) and the Adolescent Psychopathology Scale-Short Form Major Depression subscale (APS; Reynolds, 2000). The PTSS is a widely used measure that includes all Posttraumatic Stress Disorder symptoms based on the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994). Responses are on a 5 point likert scale, with higher scores reflecting more frequent symptoms. Chronbach alpha for this sample was high ($\alpha=.85$). On the APS, the Major Depression subscale includes twelve items that evaluate depressive symptoms based on DSM IV. The measure uses a 3-point Likert scale with scores ranging from (1) “almost never” to (3) “nearly every day” over the last two weeks. Chronbach alpha was high ($\alpha=.89$).

Maternal Depression. The 9-item Patient Health Questionnaire (PHQ; Spitzer et al., 200) was used to assess depressive symptoms in the participants. The PHQ is a widely used measure that incorporates diagnostic criteria from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV; American Psychiatric Association, 1994) with other leading depressive symptoms. Responses are on a 4-point Likert scale with scores ranging from (0) “not at all” to (3) “nearly every day” over the last two weeks. A total of five or more responses coded in the shaded area of the form that arrive at the final symptom count are needed for diagnosis.

Maternal Posttraumatic Stress Disorder. The 20-item Posttraumatic Checklist-Civilian (PCL-C; Ruggiero, Del Ben, Scotti, & Rabalais, 2003) was used to assess PTSD

symptoms in the participants. The PCL is a widely used measure that reflects PTSD symptoms according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V; American Psychiatric Association, 2013). Responses are on a 5-point Likert scale with scores ranging from (0) “not at all” to (4) “extremely” over the past month. The PCL can be scored either with a totally symptom severity score (range = 0-80) in which the sum of the responses are totaled and placed on a spectrum, or with a cut-point approach where the sum of the responses are totaled and the cut-point determines whether or not the individual meets diagnostic criteria.

Data Analytic Plan. Data were first checked for normality using graphical and univariate approaches. Correlation analyses were used to examine bivariate associations between all outcome variables. Then, MANCOVA was used to look at differences in outcome measures in women with and without a Posttraumatic Stress Disorder diagnosis, controlling for socioeconomic status factors and symptoms of Major Depression. Effect sizes were computed to determine the size of group differences.

Results

As shown in Table 1, the sample studied included diverse participants from lower income families, with 58% percent of participants identifying as Latina, 26% as African-American/Black, and 16% as non-Hispanic, White. The girls were in the middle of adolescence, averaging fourteen to fifteen years old. The mothers were on average 42 years old. The mean score for maternal depression according to the PHQ was 6.02 (SD=5.34, possible measure range = 0-26) The mean score for maternal Posttraumatic Stress Disorder according to the PLC was 31.18 (SD=25.71, measure range = 17-79) . The percentage of mothers scoring above the clinical cut-off for Depression and

Posttraumatic Stress Disorder was 22% and 12%, respectively. These numbers are consistent with other studies of similar populations.

Table 2 presents the relationship between elevated Posttraumatic Stress Disorder symptoms (i.e., scores above clinical cutoff) and various demographic factors. As demonstrated in the table, a maternal PTSD had a significant relationship with level of maternal education and status of lunch price. Mothers with a high school degree or less, and who qualified for reduced or free lunch were more likely to be above clinical cutoffs on the PTSD measure. Table 3 shows the diagnostic co-occurring rates of maternal elevated Depression and Posttraumatic Stress Disorder symptoms. 83% of the women with elevated PTSD also reported elevated depressive symptoms, with 19 women (10% of the sample) meeting criteria for both. There was a strong relationship between elevated PTSD and Depressive symptoms based on chi-square analysis $\chi^2 = 57.2, p < .001$.

The next set of analyses computed the Pearson correlations to determine the bivariate relationship between the outcome variables. As demonstrated in Table 4, all of the mother-daughter relationship variables were significantly correlated with each other. Adolescent self-report of depression was significantly correlated with all mother-daughter relationship variables, while adolescent PTSD was significantly correlated with all mother-daughter relationship variables except for maternal dismissal. Adolescent recent drinking had a significant relationship with adolescent sexual risk-taking, maternal warmth, maternal hostility, and parental monitoring. Lastly, adolescent depression and adolescent PTSD were significantly correlated, which mirrors maternal comorbidity.

Table 5 displays the examination of whether maternal Posttraumatic Stress Disorder was associated with the various outcomes of interest, controlling for maternal depression. Three MANCOVAs were conducted: one for adolescent mental health, one

for adolescent risk behavior, and one for mother-daughter relationship variables. There were no group differences for adolescent mental health or mother-daughter relationship variables. The MANCOVA for adolescent risk behavior approached standard $p < .05$ criteria ($F = 2.82, p = .06$). This multivariate F value for adolescent risk behavior was driven by group differences in one variable, adolescent sexual risk ($F = 4.01, p = .05$). Girls in families whose mother suffered from Posttraumatic Stress Disorder reported on average 2.35 risky sexual acts, whereas girls in families without mothers with Posttraumatic Stress Disorder reported only 1.34 risky sexual acts.

PTSD and Depression symptoms usually exist on a continuum in community populations rather than as a specific dichotomy (i.e., yes/no to “having” the disorder). Examining relationships as continuous may therefore result in a different picture than treating symptoms dichotomously as was done in the MANCOVA analysis. Because of this, I also ran a partial correlations analysis to look at the relationships between maternal Posttraumatic Stress Disorder symptoms on a continuum with the dependent variables, again controlling for maternal depression symptoms. There were no significant correlations.

Discussion

The goal of this study was to examine whether maternal PTSD symptoms may have distinct relationships with mother-adolescent relationship variables and adolescent functioning measures, after controlling for comorbid depressive symptoms. Given that PTSD disproportionately affects low-income women, it is important to understand whether these symptoms have unique or additive impact on family functioning or child development beyond the impact of more common and more widely studied depressive symptoms.

When looking at the multivariate analyses, sexual activity seems to be the only outcome that differed significantly based on maternal PTSD status. This relationship was not evident when variables were treated as continuous. This discrepancy may mean that maternal Posttraumatic Stress Disorder symptoms only related to adolescent sexual activity when maternal symptoms exist on the extreme ends of the continuum. Maternal PTSD may have an influence on adolescent sexual risk due to the symptoms related to the disorder. For example, PTSD symptoms include impaired social interactions and avoidance of emotionally charged situations, which could influence the mother's ability to communicate with her child about sexual health and activity. Additionally, the mother's previous exposure to a life-threatening event may influence parental monitoring and hypervigilance, resulting in adolescent attempts to hide sexual activity and thus engaging in riskier behaviors.

Maternal Posttraumatic Stress Disorder also may be specifically related to adolescent sexual risk beyond the effects of maternal depression due to the causes of PTSD symptoms. In our sample, 37% of the women reported having experienced a sexual assault at some point in their lifetime as one of their potentially traumatizing events. This experience, if the cause of their symptomology, may result in certain parenting habits that specifically influence adolescent sexual behavior. For example, because of their sexual history, these mothers may feel some avoidance of talking about sexual topics with their children or they may be hypervigilant about adolescent behavior related to normative sexual development. As a result, in these families there may be less open to communicate about important topics regarding adolescent sexual health (e.g., birth control, sexually transmitted diseases).

Despite this one difference, overall the research did not suggest any further relationships between maternal Posttraumatic Stress Disorder and adolescent outcome variables. We expected to find more significant differences between groups, due to the unique ways that Posttraumatic Stress Disorder symptoms may impact parenting differently than depressive symptoms. There are many possibilities for the lack of differences found in this study. First, as shown in Table 3, 46% of the women in our sample with PTSD also had elevated depression symptoms, displaying the extremely high rates of comorbidity. Thus, after controlling for depressive symptoms, there may be less unique statistical relationships between PTSD symptoms and outcomes. Second, it is also possible that although many mothers experiencing mental health symptoms like depression perceive themselves as worse at parenting, their parenting skills may not actually be affected as has been found in observational studies (Kelley & Jennings, 2003). In this case, the lack of effects may be because the outcomes we examined were primarily from the adolescent's perspective rather than the mothers. As another reason for the lack of effects, previous studies conducted that displayed significant correlations between maternal Posttraumatic Stress Disorder and child adjustment (Lambert et al., 2014; Leen-Feldner et al., 2011) were based on younger children. The way PTSD symptoms interfere with parenting may be less evident during adolescence due to their increased autonomy and better understanding or coping skills. For example, adolescents may be more understanding of their mother's symptoms and thus have other ways to understand her behaviors (e.g. not blaming themselves for a mother's withdrawal). Similarly, adolescents may have more friends and a larger social context in which to seek outside support. Finally, one last reason for the lack of relationships may be because this

study included a continuous screening measure in a community sample. Studies using diagnostic interviews and clinical samples may have different results.

There were several limitations of the current study. As aforementioned, we used a community-based sample whose symptomologies may be less severe than a clinical sample. The specific community sample also creates the problem of generalizability, as well as a limit on how much this sample is reflective of a clinical sample with confirmed PTSD diagnosis based on DSM V criteria. Also, the study was cross-sectional in design, which did not allow us to see how relationships may unfold over time. Our data solely came from self-report measures, and not all measures may translate exactly between the original English and Spanish participants.

Based on these limitations, there are many potential options for future research. Similar studies could be conducted using a clinical sample, whose participants would have more severe symptomology. Other study designs such as longitudinal or observational research would offer more extensive information that cross-sectional and self-report measures cannot. Furthermore, this study was based on the DSM-IV diagnostic criteria, but the conceptualization of Posttraumatic Stress Disorder has changed with the release of the DSM-5, which may influence the rates of symptoms or diagnoses in further studies. Additionally, there has been surprisingly little research conducted on paternal posttraumatic stress disorder and its effects on either the parent-child relationship or the child's psychological and behavioral development.

It is also important for future research to follow up on the sexual risk outcome to determine consistency across other studies. If maternal PTSD continues to demonstrate a relationship with adolescent sexual risk behavior, several interventions should be implemented to decrease risky sexual activity. For example, family-based sexual health

programs would encourage open dialogue among family members to increase knowledge of sexual health and promote healthier sexual activity among adolescents. Additionally, individual therapy for mothers having experienced a sexual assault, beyond the necessary alleviation of mental suffering, should focus on more effective mechanisms of parenting and communication with adolescent daughters.

In conclusion, the purpose of this study was to see if Posttraumatic Stress Disorder symptoms in mothers added a risk to adolescent outcomes beyond the potential effects of maternal depressive symptoms. Somewhat surprisingly, Posttraumatic Stress Disorder symptoms were generally not predictive of variables of interest, with the possible exception of adolescent sexual risk behavior. Despite the lack of findings here, given the high prevalence of Posttraumatic Stress Disorder among lower-income women, it is important to continue including maternal mental health, apart from depression, as an area of study.

References

- Abramovitz, R. et al. (2010). Impact of maternal posttraumatic stress disorder and depression following exposure to the September 11 attacks on preschool children's behavior. *Child Development*, 81(4), 1129-1141.
- Baranowsky, A. et al. (1998). PTSD transmission: A review of secondary traumatization in Holocaust survivor families. *Canadian Psychology*, 39(4), 247-256.
- Carter, A. et al. (2001). Maternal depression and comorbidity: Predicting early parenting, attachment security, and toddler social-emotional problems and competencies. *Child Adolescent Psychiatry*, 40(1), 18-26.
- Criteria for Major Depressive Episode: DSM-5. (2015). Retrieved February 20, 2015, from http://www2.nami.org/Content/NavigationMenu/Intranet/Homefront/Criteria_Major_D_Episode.pdf.
- Farmer, A. & Lee, S. K. (2011) The Effects of Parenting Stress, Perceived Mastery, and Maternal Depression on Parent–Child Interaction. *Journal of Social Service Research*, 37(5), 516-525.
- Foster, C. et al. (2007). Course and Severity of Maternal Depression: Associations with Family Functioning and Child Adjustment. *Journal of Youth and Adolescence*, 37(8), 906-916. Retrieved April 13, 2015.
- Garber, J. et al. (2011). Remission of Depression in Parents: Links to Healthy Functioning in their Children. *Child Development*, 82(1), 226-243.
- Gelfand, D. & Teti, D. (1990). The effects of maternal depression on children. *Clinical Psychology Review*, 10, 329-353.

- Goodman, S. (2007). Depression in mothers. *Annual Review of Clinical Psychology, 3*, 107-113.
- Goodman, S. et al. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical Child Family Psychology Review, 14*(1), 1-27.
- Goodman, S. & Gotlib, I. (1999). Risk for Psychopathology in the Children of Depressed Mothers: A Developmental Model for Understanding Mechanisms of Transmission. *Psychological Review, 106*(3), 458-490. Retrieved March 14, 2015.
- Goodman, S. & Tully, E. (2008). Children of depressed mothers: Implications for the etiology, treatment, and prevention of depression in children and adolescents. *Handbook of Depression in Children and Adolescents* (pp. 415-440). New York, NY: A Division of Guilford Publications.
- Halligan, S. et al. (2007). Maternal depression and psychiatric outcomes in adolescent offspring: A 13-year longitudinal study. *Journal of Affective Disorders, 97*, 145-154. Retrieved April 1, 2015.
- Hay, D. et al. (2008). Antepartum and postpartum exposure to maternal depression: Different effects on different adolescent outcomes. *Journal of Child Psychology and Psychiatry, 49*(10), 1079-1088. Retrieved April 3, 2015.
- Jacob, T. & Johnson, S. (1997). Parent-child interaction among depressed fathers and mothers: Impact on child functioning. *Journal of Family Psychology, 11*(4), 391-409.
- Jinyao, Y. et al. (2012). Insecure attachment as a predictor of depressive and anxious symptomology. *Depression and Anxiety, 29*, 789-796.

- Kelley, S. & Jennings, K. D. (2003). Putting the pieces together: Maternal depression, maternal behavior and toddler helplessness. *Infant Mental Health Journal, 24*, 74-90.
- Kilpatrick, D. et al. (2013). National estimates of exposure to traumatic events and PTSD prevalence using DSM-IV and DSM-5 criteria. *Journal of Traumatic Stress, 26*, 537-547.
- Lambert, J., Holzer, J., & Hasbun, A. (2014). Association between parents' PTSD severity and children's psychological distress: A meta-analysis. *Journal of Traumatic Stress, 27*, 9-17.
- Leen-Feldner, E., Feldner, M., Bunaciu, L., & Blumenthal, H. (2011). Associations between parental posttraumatic stress disorder and both offspring internalizing problems and parental aggression within the National Comorbidity Survey-Replication. *Journal of Anxiety Disorders, 25*, 169-175.
- Lovejoy, M., Graczyk, P., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20*(5), 561-592.
- Mehler-Wex, C. & Kölch, M. (2008). Depression in Children and Adolescents. *Deutsches Ärzteblatt International, 105*(9), 144-155. Retrieved February 10, 2015.
- Non-specific Psychological Distress. (2013, October 4). Retrieved March 17, 2015, from http://www.cdc.gov/mentalhealth/data_stats/nspd.html.
- Patten, S., Gordon-Brown, L., & Meadows, G. (2010). Simulation studies of age-specific lifetime major depression prevalence. *BMC Psychiatry, 10*(85), 1-16. Retrieved April 21, 2015.

Petterson, S., & Albers, A. (2001). Effects of poverty and maternal depression on early child development. *Child Development*, 72(6), 1794-1813.

Posttraumatic Stress Disorder. (2013). Retrieved January 27, 2015, from [http://www.dsm5.org/Documents/PTSD Fact Sheet.pdf](http://www.dsm5.org/Documents/PTSD_Fact_Sheet.pdf).

Promoting Mental Health: Concepts, Emerging Evidence, Practice. (2004). *A Report of the World Health Organization*. Retrieved March 23, 2015, from http://www.who.int/mental_health/evidence/en/promoting_mhh.pdf.

Tamatam, A. et al. (2012). Genetic biomarkers of depression. *Indian Journal of Human Genetics*, 18(1), 20-33. Retrieved April 1, 2015.

Turney, K. (2011). Maternal depression and childhood health inequalities. *Journal of Health and Social Behavior*, 52(3), 314-332.

Table 1. *Description of the sample.*

Characteristic	Mean (SD) or %	Min. – Max.
Race/Ethnicity		
Black/A.A.	22.2%	
White	19.6%	
Latino	58.2%	
Age		
Mother	41.57 (8.03)	20.83 – 66.42
Adolescent	15.40 (1.05)	13.08 – 17.83
Marital Status		
Single	26.8%	
Married bio	20.9%	
Divorced/ separated bio	23.2%	
Married/living with partner (non-bio)	20.1%	
Maternal education		
Less than HS	21.1%	
HS degree	30.4%	
Some college	37.1%	
College degree	11.3%	
Lunch status		
Full price	12.9%	
Reduced	20.6%	
Free	62.4%	
Biological father in the home		
No	63.4%	
Yes	35.1%	
PHQ Maternal Depression	6.02 (5.34)	0.00 – 26.00
PLC Maternal PTSD	31.18 (15.71)	17.00 – 79.90

Table 2. Description of the sample by PTSD diagnosis

Characteristic	Maternal PTSD Diagnosis Count (%)	No Maternal PTSD diagnosis Count (%)	Test of Difference
Race/Ethnicity			
Black/A.A.	5 (12.2%)	36 (87.8%)	$\chi^2 = .87, p = .64$
White	3 (7.9%)	35 (92.1%)	
Latino	15 (13.6%)	95 (86.4%)	
Maternal education			
Less than HS	9 (23.1%)	30 (76.9%)	$\chi^2 = 5.95, p = .05$
HS degree	13 (10.1%)	116 (89.9%)	
College degree	1 (4.8%)	20 (95.2%)	
Lunch status			
Full price	0 (0.0%)	25 (100.0%)	$\chi^2 = 7.71, p = .02$
Reduced	2 (5.0%)	38 (95.0%)	
Free	20 (16.5%)	101 (83.5%)	
Biological father in the home			
No	15 (12.6%)	104 (87.4%)	$\chi^2 = 0.19, p = .66$
Yes	7 (10.4%)	60 (89.6%)	

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		22 (54%)	19 (46%)	41 (22%)
Maternal Depression	NO			
	YES	166 (88%)	23 (12%)	189
TOTAL				

$$\chi^2 = 57.20, p < .0001$$

Table 4. *Correlations between dependent outcome variables (n=189).*

	1.	2.	3.	4.	5.
1. Maternal Report Adolescent Depression	-----	.067 .359	.257** .000	-.025 .731	.042 .565

2. Adolescent PTSD		-----	.411** .000	.096 .190	.052 .478
3. Adolescent Report Adolescent Depression			-----	.106 .143	.113 .117
4. Adolescent Report Recently Drink				-----	.367** .000
5. Adolescent Report Sexual Risk					-----
6. Adolescent Report Maternal Preoccupation					
7. Adolescent Report Maternal Dismissal					
8. Adolescent Report Maternal Warmth					
9. Adolescent Report Maternal Hostility					
10. Maternal Report Parental Monitoring					
11. Adolescent Report Parental Monitoring					

** Correlation is significant at the .01 level (2-tailed).

* Correlation is significant at the .05 level (2-tailed).

	6.	7.	8.	9.	10.	11.
1.	.242** .001	.068 .348	-.088 .227	.147* .042	-.165* .022	-.199* .005
2.	.171* .018	.056 .444	-.157* .031	.239** .001	-.055 .452	-.131 .072

3.	.350** .000	.382** .000	-.367** .000	.539** .000	-.077 .289	-.440** .000
4.	.012 .867	.115 .112	-.162* .025	.256** .000	-.149* .039	-.136 .059
5.	.060 .409	.056 .437	-.138 .056	.173* .016	-.106 .143	-.075 .297
6.	-----	.243** .001	-.216** .003	.269** .000	.073 .317	-.081 .262
7.		-----	-.536** .000	.527** .000	-.130 .073	-.401** .000
8.			-----	-.604** .000	.060 .412	.453** .000
9.				-----	-.161* .026	-.344** .000
10.					-----	.172* .017
11.						-----

** . Correlation is significant at the .01 level (2-tailed).

* . Correlation is significant at the .05 level (2-tailed).

Table 5. Results from MANCOVAS testing for group differences in dependent variables for mothers with and without PTSD diagnosis controlling for maternal depression (n=189).

Dependent Variables	Multivariate F (DF)	Univariate F (DF)	No Maternal PTSD Mean (SD)	Maternal PTSD Mean (SD)
Adolescent Mental Health	F = .93, p =.40 (2, 178)			

PTSD Symptoms		F = .23, p = .63 (1, 179)	13.19 (11.24)	14.09 (13.37)
Depression Symptoms		F = .40, p = .52 (1, 179)	1.51 (.40)	1.68 (.37)
Adolescent Risky Behavior	F = 2.82, p = .06 (2, 184)			
Sexual Risk		F = 4.01, p = .05 (1, 185)	1.34 (2.14)	2.35 (2.46)
Recent Drinking		F = .20, p = .66 (1, 185)	.22 (.42)	.17 (.39)
Mother-Daughter Relationship	F = .40, p = .81 (4, 181)			
Maternal Warmth		F = .22, p = .64 (1, 184)	3.19 (.71)	3.20 (.73)
Maternal Hostility		F = .46, p = .50 (1, 184)	1.69 (.50)	1.66 (.51)
Maternal Preoccupation		F = .82, p = .37 (1, 184)	2.21 (.87)	2.37 (.81)
Maternal Dismissiveness		F = .02, p = .90 (1, 184)	2.58 (.90)	2.69 (.71)

Table 6. *Partial correlations between maternal PTSD and dependent variables controlling for maternal depression.*

Dependent Variables	Maternal PTSD
Adolescent Depression	$r = .10$ $p = .19$
Adolescent PTSD	$r = .04$ $p = .56$
Recent Drinking	$r = -.03$ $p = .74$
Risky Sexual Behavior	$r = .11$ $p = .14$
Maternal Warmth	$r = .07$ $p = .36$
Maternal Hostility	$r = -.01$ $p = .89$
Maternal Preoccupation	$r = .07$ $p = .36$
Maternal Dismissiveness	$r = -.02$ $p = .76$