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The Impact Of Maternal Trauma And Posttraumatic Stress Disorder On Parenting Stress

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Master of Public Health Thesis by Maureen Wright

Abstract

Purpose: The goals of this study were to determine the prevalence and type of maternal trauma since childbirth, to examine the association between maternal trauma, PTSD, and maternal stress, and to assess the impact of PTSD symptom severity on maternal stress.

Methods: Participants consisted of 297 women who were screened for trauma, PTSD, and maternal stress at 28 (±2) weeks gestation, 8(±4) weeks postpartum, and at approximately 3 years after their child's birth. Using results from the 3 year survey, unadjusted and adjusted associations between PTSD status and parental stress were examined using ANOVA F-test and multiple regression, respectively.

Results: Over half the women in the sample had experienced a traumatic event since the birth of their child. 22 women were in current PTSD episode. Mothers with current PTSD exhibited greater maternal stress compared with both mothers who experienced trauma since the birth of their child but did not currently have PTSD and mothers who had no trauma history.

Conclusions: Approximately 1 in 2 women experienced a traumatic event since the birth of their child. Both trauma and PTSD, in particular, are important risk factors for elevated maternal stress.

Key words: trauma, posttraumatic stress disorder, parental stress

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Introduction

Between 36.7% and 87.1% of women experience at least one traumatic event in their lifetime.[1,2] Most commonly women are victims of sexual assault or rape.[3,4] Traumatic experiences peak at ages 16-20 years old in women[4], suggesting that the majority of traumatic experiences occur before and during child-bearing and child-raising years. Of women who experience at least one lifetime trauma, between 8.5% and 13.8% will develop posttraumatic stress disorder (PTSD), a more severe stress response from trauma exposure that induces feelings of intense fear, helplessness, and horror and impairs one's ability to interact with others and to function daily.[3,5-6]

Given these findings, there is a growing body of literature demonstrating that maternal trauma and PTSD may negatively impact parenting beliefs, styles, and behaviors. Specifically, a history of maternal trauma has been associated with neglectful parenting behaviors, lower parenting satisfaction, maternal depression, use of severe physical disciplinary methods,[7] worse parental-child relationships,[8] higher parenting stress, and less maternal sensitivity towards their infants.[9] The diagnosis of PTSD has been associated with increased parental reports of dysfunctional parent-child interactions and negative perceptions of their children.[10-11] Although Cohen, Hein, and Batchelder found that PTSD was not associated with abuse potential, punitive behaviors, or psychological aggression,[12] other researchers, in contrast, found that PTSD was associated with more harsh parental disciplinary behaviors such as slapping, hitting, kicking, choking, and burning.[13] The severity of PTSD symptoms has also been related to unrealistic maternal

expectations, excessive negative perceptions of their children,[14] more avoidant caregiving behaviors, and distorted maternal-child attachments.[15]

Parenting stress has been identified as an important issue affecting parenting views, styles, and behaviors. Previous research has linked parenting stress to more authoritarian and harsh parenting behaviors,[16] insecure attachment relationships,[17] lower role satisfaction, lower maternal self-esteem, and higher psychological and somatic complaints, especially for those with low social support.[18] Stressed parents are also less involved with their children and provide less stimulation for growth.[19]

Only a few studies have explored the specific relationship between maternal trauma or maternal PTSD and parental stress. Each of these studies has focused on women in high risk groups for maternal trauma.[11,20-22] with two studies examining the impact of maternal childhood trauma on parenting stress[20-21] and one examining the probable diagnosis[22] of maternal PTSD on parenting stress. Only one study has examined the association of a diagnosis of maternal PTSD on parenting stress. However, this study only examined a single component of parental stress.[11] There is little research on the impact of more recent maternal trauma that has occurred in adulthood, particularly during the postpartum period, on maternal stress.

Our study, therefore, seeks to fill this gap in research and further clarify the relationship between maternal trauma, a diagnosis of maternal PTSD, and parental stress. This study further contributes to the field by examining both the individual associations of trauma

and PTSD with parental stress rather than studying either trauma[20-21] or PTSD[11,22] alone as past research has done. The objectives of this study are threefold. First, we seek to determine the prevalence and types of trauma experienced by women since the birth of their child. Second, we will examine the association between maternal trauma, the diagnosis of PTSD, and maternal stress. Specifically we hypothesize that mothers with a current diagnosis of PTSD will exhibit higher levels of parenting stress compared with 1) mothers who have experienced trauma since the birth of their child, but do not currently have PTSD and 2) mothers who have no current or lifetime history of PTSD or trauma. Lastly, we will examine the impact of the severity of PTSD symptomatology on maternal stress. Specifically, we hypothesize that the more severe the PSTD symptomatology is, the greater the parental stress will be.

Methods

Sample

Participants in this study consisted of 297 mothers who were drawn from the Yale Pink and Blue Study, a larger prospective cohort of 2,654 pregnant women who were recruited from 137 obstetrical practices in Connecticut and western Massachusetts from March 2005 to May 2009 by convenience sampling (see Yonkers et al., 2011 for more detail[23]). This subset of women was chosen based on PTSD and parental stress assessments that were administered after childbirth. Women were included if they were 18 years or older, pregnant at 17 weeks gestation or less, and spoke Spanish or English. Women were excluded if they had known multiple gestations, were being treated for diabetes, did not have access to a telephone, planned to relocate, or intended to terminate their pregnancy.

Three women were removed from the subset due to missing data for the final sample (two missing trauma data, one missing stress data).

Procedure

This study employed a cross-sectional design to assess the association between maternal trauma, PTSD, and parental stress. At the time of initial screening, verbal consent was obtained. Written consent was obtained before 17 weeks gestation during a face-to-face home interview at which time a lifetime history was obtained for trauma and PTSD. Participants were re-interviewed by phone at 28 (±2) weeks gestation, 8 (±4) weeks postpartum, and when their children were approximately 3 years old. At each assessment point, mothers were interviewed for current PTSD, trauma, parental stress, and major depression. Based on these three interviews, women were divided into three groups: those with current PTSD, those experiencing trauma since the birth of their child, but no current PTSD, and those with no current or lifetime history of PTSD or trauma. If women were symptomatic, behavioral health care referrals were offered. More immediate attention and care were given if they expressed suicidal ideation. Institutional Review Boards at Yale University School Of Medicine and study-affiliated hospitals provided human subjects research approval.

Measures

Sociodemographic Characteristics

Women reported on age, parity, race, marital status, education level, and age of their child.

Maternal PTSD: Diagnosis and Severity

PTSD was diagnosed using the MINI Neuropsychiatric Interview 5.0, a validated interview tool to diagnosis PTSD using DSM-IV criteria.[24] To be diagnosed with PTSD, individuals needed to report having experienced a traumatic or stressful event that caused intense fear, horror, or helplessness. Furthermore, individuals had to report re-experiencing the event, displaying at least 3 of the following: avoidance, amnesia, decreased interest in activities, detachment, numbing, foreshortened future, and at least 2 of the following: trouble sleeping, irritability, difficulty concentrating, nervousness, and feeling easily startled for at least several days over the past month. Individuals had to report these symptoms caused at least moderate distress. Women were asked to specifically identify their traumatic event from among 13 provided categories and were given an "other" option in which they were allowed to freely respond with their type of trauma. From these free responses, answers were grouped into categories of trauma such as trauma relating specifically to their child (illness, miscarriage), marital issues, death of a family member/close relation, family conflict, or job, financial or housing issues.

For severity of PTSD symptomatology, the Modified PTSD Symptom Scale (MPSS)[25] was used. The scale was modified to reflect the DSM-IV diagnosis of PTSD. The scale consists of 17 items that are scored from 0 to 3 for frequency of symptoms and from 0 to 4 for intensity of symptoms. Questions corresponded specifically to the symptom clusters that define PTSD: hyper-arousal, intrusive, and avoidant. To determine symptom cluster severity, scores were calculated summing the frequency and intensity of symptoms for

each cluster. From these, scores from each symptom cluster were summed yielding a total symptom severity score with a higher score indicating more severe symptomatology.

Parental Stress

Parental stress was assessed using the Parental Stress Index-Short Form (PSI-SF)[26], a 36-item parental self-report measure. The PSI-SF was derived from the 120-item Parental Stress Index.[27] Each of the 36 statements is rated on a 5-point Likert scale from "strongly disagree" to "strongly agree" and gives a total stress score with a higher score indicating a greater level of stress. The PSI-SF is broken down into three 12-question subscales: 1) Parental Distress (PD), 2) Parent-Child Dysfunctional Interaction (PCDI), and 3) Difficult Child (DC). In the context of this study, the PD subscale reflects the distress the mother feels due to her parenting role including her perception of stresses associated with limitations placed on other life roles, social support, and conflict with her partner. The PCDI subscale aims to capture the mother's view of the maternal-child relationship as a positive or negative one through maternal-child interactions and maternal expectations. The DC subscale illustrates a mother's view of her child's behavior and temperament that characterizes him or her as easy or difficult to handle.

Major Depressive Disorder

The World Health Organization World Mental Health Composite International Diagnostic Interview (CIDI), version 2.1[28], was used to assess for current major depressive disorder.

Data analysis

The analysis procedure consisted of four steps. First, bivariate associations between baseline demographic characteristics and trauma/PTSD status were computed using the chi-square test or the Fisher's exact test (if expected cell size was <5) for categorical variables, and analysis of variance (ANOVA) for continuous variables. Second, unadjusted associations between PTSD status and parental stress were examined using ANOVA F-test. Third, adjusted associations between PTSD and parental stress were calculated with multiple regression analysis controlling for demographic variables that were associated with PTSD status at a significance level of $p \leq 0.05$. This resulted in a model controlling for education and current depression. Finally, an exploratory analysis examining the association between symptom severity and parental stress was performed using the Spearman correlation. Data analysis was completed with SAS version 9.3.[29]

Results

Demographic Characteristics (Table 1)

The study sample consisted of 22 women with current PTSD, 132 women who had experienced a traumatic event since the birth of their child but did not currently have PTSD, and 143 women who did not have current or a lifetime history of PTSD or trauma. Approximately half of all women were first time mothers. The mean ages for mothers and their children in each group were comparable. More than two-thirds of the women in each group self-identified as White (Non-Hispanic) and were married or had a partner, again with no significant intergroup differences. Over 50% of mothers without PTSD were college graduates compared to only 36.4% of mothers with PTSD (p=0.045).

Mothers with PTSD were significantly more likely to have a concurrent diagnosis of MDD (59.1%) compared to mothers with trauma exposure but no current PTSD and to mothers with neither PTSD nor trauma exposure (28.8%, 13.3% respectively, $p<0.001$).

Traumatic Experiences

One-hundred fifty-four women (51.2%) reported they had experienced a traumatic event since the birth of their child. Thirty-nine women (25.3%) were traumatized by physical or sexual assault. Thirty-eight women (24.7%) related their traumatic event to separation, divorce, or marital conflict. Thirty-five women (22.7%) were traumatized by the death of a family member or close relation. Twenty-nine women (18.8%) attributed their traumatic experience to miscarriage, childbirth, or illness or injury to their child. Twenty women (13%) related their trauma to difficulties with employment, finances, and housing. Another 20 women (13%) were traumatized by an event that happened to someone close to them. In addition to current traumatic experiences, 63 women (40.9%) reported they had experienced sexual molestation before the age of 18.

PTSD and Parental Stress Index Score Association (Table 2)

Among women with PTSD, unadjusted total parental stress index score (86.0±18.3) was significantly higher compared with women with trauma exposure without current PTSD (74.4±17.7) and to women with neither PTSD nor trauma history (70.5±16.9) ($p <0.001$). Women with PTSD had a significantly higher amount of stress compared with women with trauma exposure without current PTSD and to women with neither PTSD nor trauma history as it related to their role as a parent (PD subscale). There was no

significant difference in the amount of stress among the 3 groups of women concerning their view on the maternal child-relationship through their interactions and maternal expectations (PCDI subscale).

After adjusting for education level and current depression total PSI and PD scores were less than unadjusted values across each PTSD category. However, for women with current PTSD, total PSI scores remained significantly higher compared with women with neither PTSD nor trauma history. Adjusted PD scores for women with current PTSD remained significantly higher compared with women with trauma but no current PTSD and with women with neither trauma nor PTSD history. Adjusted PCDI and PD stress scores were not significantly different between PTSD categories.

Severity of PTSD Symptomatology and Parental Stress

Overall, parental stress correlated positively with PTSD symptom severity. Specifically, total maternal stress was significantly positively correlated with the severity of hyper-arousal and avoidant symptom clusters. Maternal stress as it related to the mother's role as a parent was significantly positively correlated with total PTSD symptom severity and severity of the avoidant and intrusive symptom clusters. Stress as it related to the parent-child dysfunctional interaction subscale, while positively correlated with symptom severity, was not significantly associated with any specific symptom cluster.

Discussion

This study sought to further explore how trauma and PTSD relate to maternal stress.

Consistent with our hypotheses, mothers with a current diagnosis of PTSD exhibited higher amounts of parental stress. Specifically, mothers with current PTSD exhibited higher amounts of total maternal stress compared with mothers with trauma exposure since their child's birth but no current PTSD and with mothers without current or lifetime history of PTSD or trauma. When adjusting for education level and current major depression mothers with PTSD continued to have a significantly higher amount of total stress compared with those without a current or lifetime history of PTSD or trauma. Similarly, mothers with current PTSD had significantly higher amounts of stress as it related to their role as a parent (the PD subscale) when compared with both women who have experienced trauma since the birth of their child but do not current have PTSD and women without current or lifetime history of PTSD or trauma. This relationship persisted even when controlling for current major depression and education level. Contrastingly, traumatic experiences, after controlling for current major depression and education level, was not associated with increased maternal stress for both total stress and stress attributed to their role as a parent. Furthermore, the amount of stress attributed to a mother's perception of her child as difficult or having a negative parent-child relationship did not differ regardless of a mother's PTSD or trauma status. Our data suggest that the primary determinant of a mother's stress derives from her parental distress which includes such factors as her perceptions of maternal incompetence, interference with other life roles, lack of social support, and/or conflict with her partner.

As limited research has been done in the area of trauma and PTSD and the association with parental stress, this study contributes to the field by including both the individual

associations of trauma and PTSD with parental stress rather than looking at either trauma[20-21] or PTSD[22] as past research has done. Rather than evaluating the effects of maternal childhood trauma, this study looks specifically into trauma experienced since the birth of a mother's child. This study is consistent with Chetomb's research that also found increased parental stress associated with PTSD.[22] Research by Schechter et al. also investigated parental stress but focused only on the parent-child dysfunctional interaction component of parental stress, finding that maternal PTSD severity was significantly associated with higher stress in that domain.[11] Another study has also found that PTSD and PTSD severity was associated with worse maternal-child relationships and negative attributions towards their children, but did not use the parent child dysfunctional interaction subscale.[10] This current study, in contrast, found that women with PTSD and trauma did not have a significantly different amount of stress as it relates to their view of the parent-child relationship compared with women with current or lifetime history of PTSD or trauma. It is unclear if differences in the maternal demographics (such as socioeconomic status, ethnicity, and education level), the age of their children, or other factors could account for the dissimilar conclusions between studies.

Limitations of this study include the inability to control for several variables such as social support, income, and substance abuse, all of which could impact parental stress. Another limitation is the possibility of self-report bias. Women may have had a difficult time disclosing the private and distressing information we were seeking for the study. In addition, in the sub-group of women with trauma exposure since the birth of their child but no current PTSD, this study did not identify those women who may have had PTSD

in the past. It is unclear how a past history of PTSD might have influenced our study results.

A strength of this study was our ability to control for the effects of co-morbid major depression which alone has been shown to have a negative impact on maternal care-giving behavior and increased maternal stress.[1,30-31]

In conclusion, this study highlights the importance of trauma, and especially PTSD, as a risk factor for elevated maternal stress. Over 50% of women experienced a traumatic event after the birth of their child. When seeing mothers, health care practitioners need to be mindful of the high prevalence of trauma and appropriately screen their patients for potential adverse effects of these traumatic events, including PTSD. Our study also serves as a reminder that trauma and PTSD are not limited to high-risk populations such as minority and less educated women. Interventions to reduce maternal stress may allow mothers with trauma or PTSD to provide more attentive, consistent, and loving child care, promoting more appropriate and healthy child development.

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Table 1. Sample Characteristics by PTSD and Trauma Status[a]

Characteristics	PTSD Status			P-Value[b]
	No Current or Lifetime History of PTSD or Trauma (n=143)	Trauma Since Birth of Child, No Current PTSD (n=132)	Current PTSD Episode (n=22)	
Age (years)	31.4±5.7	30.8±6.2	30.8±18.6	0.667
1st Time Mothers	67 (46.9)	62 (47.0)	11 (50.0)	0.962
Race/Ethnicity				0.903
White, Non-Hispanic	110 (76.9)	103 (78.0)	15 (68.2)	
Black, Non-Hispanic	11 (7.7)	10 (7.6)	3 (13.6)	
Hispanic	15 (10.5)	12 (9.1)	3 (13.6)	
Other	7 (4.9)	7 (5.3)	1 (4.6)	
Marital Status				0.207
Married/ Partner	124 (86.7)	114 (86.4)	16 (72.7)	
Not Married	19 (13.3)	18 (13.6)	6 (27.3)	
Education				0.045
Less Than College Graduate	53 (37.1)	60 (45.5)	14 (63.6)	
College Graduate	90 (62.9)	72 (54.5)	8 (36.4)	
Current MDD	19 (13.3)	38 (28.8)	13 (59.1)	<0.001

[a]Table values are mean±SD for continuous variables and n (column %) for categorical variables.
[b]P-value is for analysis of variance F-test for continuous variables and Fisher's Exact test or χ^2 test for categorical variables.
PTSD=Post-traumatic Stress Disorder, MDD=Major Depressive Disorder

Table 2. Comparison of Unadjusted and Adjusted Associations between PTSD and Trauma Status and Total Parental Stress and Stress Subscales

Parental Stress Index Category	PTSD Status			P-Value
	No Current or Lifetime History of PTSD or Trauma (n=143)	Trauma Since Birth of Child, No Current PTSD (n=132)	Current PTSD Episode (n=22)	
Parental Stress Index Total	70.5±16.9	74.4±17.7	86.0±18.3	<0.001[3]
Unadjusted[1]	1.0	2.0 (2.1)	9.8 (4.0)	
Adjusted[2] [β (SE) (p-value)]		(p=0.328)	(p=0.016)	
Difficult Child				
Unadjusted[1]	26.3±7.2	28.2±7.6	29.5±8.9	0.047[3]
Adjusted[2][β (SE) (p-value)]	1.0	1.3 (0.9) (p=0.168)	1.4 (1.8) (p=0.407)	
Parent-Child Dysfunctional Interaction	19.4±5.5	19.2±6.2	20.2±5.7	0.775[3]
Unadjusted[1]	1.0	-0.68 (0.70)	-0.81 (1.4)	
Adjusted[2][β (SE) (p-value)]		(p=0.331)	(p=0.553)	
Parental Distress				
Unadjusted[1]	24.8±7.5	27.1±7.7	36.3±7.4	<0.001[3]
Adjusted[2][β (SE) (p-value)]	1.0	1.4 (0.9) (p=0.109)	9.1 (1.8) (p=<0.001)	

[1]Means and standard deviations are given for PSI Total, DC, PCDI, and PD subscales for unadjusted values.
[2]Adjusted for educational level and current MDD. Regression coefficients (β), standard errors, and individual significance values are given for PSI Total, DC, PCDI, and PD subscales for adjusted values.
[3]P-value is for analysis of variance F-test.
PTSD=Post traumatic stress disorder, MDD=Major Depressive Disorder, PSI= Parental Stress Index, DC=Difficult child subscale, PCDI=Parent-child dysfunctional interaction subscale, PD=Parental distress subscale.

Table 3. PTSD Symptom Severity and Symptom Cluster Severity Correlation with Total Parental Stress and Stress Subscales[1]

	Measures of Total Parental Stress and Subscales			
PTSD Symptom Severity Scale	**Total Parental Stress**	**Difficult Child**	**Parental Child Dysfunction Interaction**	**Parental Distress**
Total PTSD Symptoms	r=0.29	r=0.029	r=0.30	r=0.46[a]
Hyper-arousal Cluster	r=0.44[a]	r=0.32	r=0.27	r=0.09
Avoidance Cluster	r=0.38[a]	r=0.06	r=0.24	r=0.51[a]
Intrusive Cluster	r=0.16	r=-0.13	r=0.16	r=0.42[a]

[1]Spearman correlations were used to calculate r-values.
[a]Significant at 0.05