



Research paper

Maternal childhood trauma, postpartum depression, and infant outcomes: Avoidant affective processing as a potential mechanism



Karmel W. Choi^{a,b,c,*}, Kathleen J. Sikkema^{a,c,d}, Bavi Vythilingum^d, Lut Geerts^e, Sheila C. Faure^f, Melissa H. Watt^c, Annerine Roos^f, Dan J. Stein^{d,f}

^a Department of Psychology & Neuroscience, Duke University, Durham, NC, USA

^b Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA

^c Duke Global Health Institute, Duke University, Durham, NC, USA

^d Department of Psychiatry and Mental Health, University of Cape Town, Cape Town, South Africa

^e Department of Obstetrics and Gynecology, Stellenbosch University, South Africa

^f MRC Research Unit on Anxiety and Stress Disorders, Stellenbosch University, Cape Town, South Africa

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ABSTRACT

Background: Women who have experienced childhood trauma may be at risk for postpartum depression, increasing the likelihood of negative outcomes among their children. Predictive pathways from maternal childhood trauma to child outcomes, as mediated by postpartum depression, require investigation.

Methods: A longitudinal sample of South African women (N=150) was followed through pregnancy and postpartum. Measures included maternal trauma history reported during pregnancy; postpartum depression through six months; and maternal-infant bonding, infant development, and infant physical growth at one year. Structural equation models tested postpartum depression as a mediator between maternal experiences of childhood trauma and children's outcomes. A subset of women (N=33) also participated in a lab-based emotional Stroop paradigm, and their responses to fearful stimuli at six weeks were explored as a potential mechanism linking maternal childhood trauma, postpartum depression, and child outcomes.

Results: Women with childhood trauma experienced greater depressive symptoms through six months postpartum, which then predicted negative child outcomes at one year. Mediating effects of postpartum depression were significant, and persisted for maternal-infant bonding and infant growth after controlling for covariates and antenatal distress. Maternal avoidance of fearful stimuli emerged as a potential affective mechanism.

Limitations: Limitations included modest sample size, self-report measures, and unmeasured potential confounders.

Conclusions: Findings suggest a mediating role of postpartum depression in the intergenerational transmission of negative outcomes. Perinatal interventions that address maternal trauma histories and depression, as well as underlying affective mechanisms, may help interrupt cycles of disadvantage, particularly in high-trauma settings such as South Africa.

1. Introduction

Childhood trauma is associated with poor physical and mental health outcomes for individuals throughout their life course (Scott et al., 2012; Springer et al., 2007). Moreover, childhood trauma is recognized as having notable impacts on subsequent generations (Roberts et al., 2004), thereby contributing to cycles of disadvantage. To interrupt these cycles, it is important to understand when and how transmission of intergenerational risks might occur. One window in

which negative outcomes may be transmitted to the next generation is during the perinatal period, the earliest point of intersection between generations.

In the literature, childhood trauma has been found to increase women's risk for postpartum depression (Dennis and Vigod, 2013; Garabedian et al., 2011; Meltzer-Brody et al., 2013; Muzik et al., 2013; Seng et al., 2013). In a separate and growing stream of literature reviewed by Stein et al. (2014), maternal depression in the postpartum period has been found to negatively affect a range of child outcomes,

* Correspondence to: Behavioral Medicine Service, Department of Psychiatry, Massachusetts General Hospital, Boston, MA 02114, USA.
E-mail address: kwchoi@mg.harvard.edu (K.W. Choi).

perhaps by disrupting maternal–infant interactions and bonding during a sensitive time for child development. However, despite substantial evidence supporting the transmission of early adversity across generations (Galler and Rabinowitz, 2014; Lieberman et al., 2011), pathways from childhood trauma in one generation to poor outcomes in the next generation – as mediated by maternal postpartum depression – are informative for early intervention but have not been well characterized in the literature.

Furthermore, if such intergenerational pathways exist, it would be useful to identify individual-level mechanisms that are potentially implicated. Literature suggests that childhood trauma can profoundly alter emotion regulation and processing (Cloitre et al., 2005; Dannowski et al., 2013; Pine et al., 2005) in such a way that could predispose individuals to be at risk for depression in the face of stressful or affectively intense experiences, such as caring for an infant. Affective processing – or the way in which individuals attend and respond to emotional information – particularly threatening or distressing stimuli, may increase vulnerability to maladaptive emotional states (Gibb et al., 2016; Morales et al., 2016) and thus be a potential mechanism underlying postpartum depression and subsequent outcomes among women with childhood trauma. Identifying affective processes linking maternal childhood trauma and postpartum depression, as well as subsequent infant outcomes, would be useful in that they would represent modifiable clinical targets for perinatal intervention.

To date, the bulk of research on intergenerational transmission of childhood trauma and its negative sequelae (e.g., Egeland et al., 1988; Pears and Capaldi, 2001; Thornberry and Henry, 2013) has been generated in high-income countries (HICs). Similarly, a recent review on maternal childhood trauma and perinatal mood disorders (Choi and Sikkema, 2016) identified a vast majority of studies published from HICs, with only one study (Fisher et al., 2013) conducted in a LMIC, or low- or middle-income country. Less is known about the consequences of maternal childhood trauma on mothers and children in LMICs, despite evidence that childhood maltreatment is a common occurrence in many of these settings (Cyr et al., 2013; Skeen and Tomlinson, 2013). For example, South Africa is known to have high rates of interpersonal trauma (Gass et al., 2011; Jewkes and Abrahams, 2002) such as childhood abuse, with nearly 70% of South African children in a large multi-community sample reporting lifetime exposure to some form of abuse, whether physical, emotional, and/or sexual (Meinck et al., 2016).

Investigating the effects of early trauma, particularly on maternal postpartum depression and subsequent child outcomes, merits attention in LMICs such as South Africa. Maternal postpartum depression is prevalent in LMICs (Fisher et al., 2012) and suggested to have especially negative effects on child physical growth and survival in these low-resource settings (Rahman, Patel, Maselko, & Kirkwood, 2008). A birth cohort study in South Africa found prospective linkages between maternal postpartum depression and compromised child psychological development, even after adjusting for later maternal depression (Verkuijl et al., 2014). However, no known research in LMICs has brought together a full model encompassing maternal childhood trauma, postpartum depression, and subsequent child outcomes. Such a predictive model could strengthen the case for addressing both maternal depression and trauma history during the postpartum period and provide insight for early interventions to interrupt cycles of trauma in diverse global settings.

Given existing research gaps – specifically, limited evidence on intergenerational processes in LMICs as well as the bridging role of early maternal depression in these processes – the primary aim of this study was to test postpartum depression as a mediator of the relationship between maternal childhood trauma and early child outcomes in a sample of South African mothers followed through the perinatal period. Secondarily, a lab-based component within this study sought to explore affective mechanisms by which some women who have experienced

childhood trauma may be more vulnerable to postpartum depression and subsequent disruptions with their children.

2. Methods

2.1. Participants and procedures

This study drew on a prospective cohort of 150 South African women followed from pregnancy through the first postpartum year as part of a larger study on maternal stress, with details published elsewhere (Roos et al., 2013). Briefly, recruited participants were women presenting for their first antenatal care visit at three state-level midwife obstetric units (MOUs) that provide services for regular pregnancies in the Eastern metropole of Cape Town, South Africa. Women attending these MOUs were predominantly of mixed race (typically Afrikaans-speaking) ancestry. They were approached in the waiting area and, if interested, invited to a private consultation room and provided more information about the study. On average, two or three out of 10–30 women attending antenatal care at a MOU clinic on a given day expressed interest in the study, though this ranged due to daily fluctuations. Those who consented to participate then completed an on-site dating ultrasound scan. Women were eligible to participate if they had a gestational age of < 20 weeks as determined by ultrasound. Women were excluded if they had evidence of a high-risk pregnancy (e.g., non-singleton, history of pregnancy loss in late pregnancy or more than two losses in early pregnancy, history of preterm labor or early pre-eclampsia, current serious medical condition such as cardiac or renal failure).

For the main study, participants were asked to complete longitudinal assessments, beginning in the first trimester of pregnancy if presenting early, as well as in the second and third trimesters. They also completed assessments 3–5 days post-delivery, at 6 weeks, at 6 months, and at 1 year postpartum. Informed consent was obtained from all women prior to participation, and procedures were approved by the human research ethics committee at the University of Stellenbosch. As part of the exploratory sub-study, participants of the main study were approached by study staff during one of their main assessment visits about participating in a sub-study on maternal emotions, with details described elsewhere (Roos et al., 2012). Thirty-three women completed a separate laboratory visit at six weeks postpartum. Again, informed consent was obtained and all procedures were approved by the human research ethics committee at the University of Stellenbosch.

2.2. Measures

2.2.1. Maternal demographics

Maternal age and education were self-reported during pregnancy and included as demographic covariates.

2.2.2. Maternal childhood trauma

Mothers completed the Childhood Trauma Questionnaire (CTQ) during the second trimester of pregnancy. The CTQ has been used with South African women (Spies and Seedat, 2014) and in antenatal care settings (Choi et al., 2015a; Koen et al., 2014) to measure exposure to early interpersonal trauma, including physical abuse, sexual abuse, emotional abuse, emotional neglect, and physical neglect. An overall childhood trauma score was calculated as a continuous variable ($\alpha=0.73$), as were continuous scores for each of the five subtypes. For descriptive purposes, cut-offs for subtypes at the moderate/severe level were applied according to manual guidelines (Bernstein and Fink, 1998), and exposure to one or more subtypes was used to create a dichotomous variable reflecting any history of maternal childhood trauma.

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