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Original article

Sexual Victimization and Somatic Complaints in Pregnancy: Examination of Depression as a Mediator

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A B S T R A C T

Purpose: Research suggests that women with histories of sexual victimization are more likely to experience somatic complaints in pregnancy. However, prior studies have been limited by homogenous samples, have primarily only examined the relationship of childhood sexual abuse (CSA) to somatic complaints, and have not examined potential mechanisms explaining this association. Thus, the current study examined the relationship between lifetime sexual victimization history and somatic complaints in pregnancy in an ethnically diverse sample of pregnant women. Additionally, depressive symptoms were examined as a mediator of the sexual victimization–somatic complaints relationship.

Procedures: Women were recruited from the waiting room of a university-affiliated obstetrics–gynecology clinic to complete a study of psychological health and negative sexual experiences. The 407 currently pregnant participants who completed measures of their sexual victimization history, depressive symptoms, and somatic complaints were primarily African American (53.6%), low to middle income (75.4%), and reported an unplanned pregnancy (72%).

Findings: A total of 27.7% of women had a history of CSA and/or adolescent/adult sexual assault. Mediation analyses using bootstrapping supported depression as a significant mediator of the relationship between sexual victimization and somatic complaints, with a medium-sized effect ($\kappa^2 = .09$).

Conclusions: Having a history of sexual victimization is associated with risk for poor mental and physical health during pregnancy. There are likely multiple mechanisms explaining the association between sexual victimization and somatic complaints in pregnancy, which should be investigated in future research.

Sexual victimization among women remains a significant health problem in the United States and worldwide. Recent reviews support that approximately 19% of women experience childhood sexual abuse (CSA), defined as sexual activity perpetrated by an adult or authority figure against a child using threat, force, intimidation, manipulation, or by taking advantage of the child's inability to consent (Collin-Vezina, Daigneault, & Hébert, 2013; Pereda, Guilera, Forns, & Gómez-Benito, 2009). Additionally, approximately 18% of U.S. women report experiencing completed rape in adolescence or adulthood, defined as oral, vaginal, or anal intercourse after the use of threat or force, or that occurred when the victim was incapacitated, such as after substance use (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007).

In addition to the mental health consequences of sexual victimization, a growing literature highlights that sexual victimization is associated with physical health consequences. These include increased physical health complaints, greater medical utilization, and risk for a number of chronic health conditions, including gastrointestinal disorders, pelvic pain, asthma, and fibromyalgia (e.g., Golding, 1999; Koss & Heslet, 1992; Wilson, 2010; Yampolsky, Lev-Wiesel, & Ben-Zion, 2010). There is also increasing support for the negative impact of sexual victimization on pregnancy. For example, pregnant women with histories of sexual victimization engage in more poor health practices such as smoking, drinking alcohol, not receiving adequate prenatal care, eating a poor diet, and not being active physically (Grimstad & Schei, 1999; Harrison & Sidebottom, 2009; Leeners, Rath, Block, Görres, & Tschudin, 2014; Meschke, Hellerstedt, Holl, & Messelt, 2008; Seng, Sperlich, & Low, 2008). There is also emerging evidence that women with sexual victimization histories experience more somatic symptoms during pregnancy as well, with three European studies finding

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that women with CSA histories reported more somatic complaints, including heartburn, headache, and pelvic and back pain, than women without CSA histories (Grimstad & Schei, 1999; Lukasse, Schei, Vangen, & Øian, 2009; van der Hulst et al., 2006). Additionally, a large cohort study of Norwegian pregnant women found that lifetime sexual violence history (not just CSA) was associated with somatic complaints, and this association was stronger among those with more extensive victimization histories (Lukasse, Henrikson, Vangen, & Schei, 2012). Supporting the clinical importance of these complaints, experiencing symptoms including pelvic and back pain, as well as nausea and vomiting, are associated with disability, poor self-rated health, leaving employment, and reduced social activity during pregnancy (Gutke, Östgaard, & Ösberg, 2006; Matsuzaki, Haruna, Ota, Murayama, & Murashima, 2011; O'Brien & Naber, 1992).

There are multiple mechanisms that likely contribute to the association between sexual victimization and somatic complaints in pregnancy. For one, engaging in poor health practices during pregnancy can increase vulnerability to health problems (Rodriguez, Bohlin, & Landmark, 2001; Sneag & Bendo, 2007). In addition, having a chronic health condition before pregnancy, such as a gastrointestinal disorder or chronic pain condition, can increase risk for physical symptoms. Pregnant women with sexual victimization histories are also at increased risk for experiencing significant psychological symptomology, such as depression and posttraumatic stress disorder (e.g., Alvarez-Segura et al., 2014; Leeners et al., 2014; Rich-Edwards et al., 2011; Seng et al., 2008; Yampolsky et al., 2010). These psychological symptoms can in turn result in increased vulnerability to somatic symptoms via multiple pathways. For one, the experience of sexual trauma, particularly when combined with psychological distress, can result in neuroendocrine alterations that increase vulnerability to health symptoms. Experiences of sexual victimization can result in alterations in hypothalamic pituitary adrenal axis functioning as well as immune functioning (Fagundes, Glaser, & Kiecolt-Glaser, 2013; McEwen, 2003; Pace & Heim, 2011), which in turn increase vulnerability for multiple health symptoms and problems including insulin resistance, diabetes, viral infections, and obesity (McEwen, 2003; McEwen & Stellar, 1993). Further, experiencing psychological distress increases the likelihood that women will engage in poor health practices (Harrison & Sidebottom, 2009; Nagahawatte & Goldenberg, 2008). Finally, psychological distress can serve to exacerbate somatic symptoms via multiple mechanisms including attentional biases to these symptoms, reduced physical activity, catastrophic interpretation of symptoms, and interference with utilization of adaptive coping (Otis, Keane, & Kerns, 2003).

Despite the potential links among sexual victimization, psychological distress, and somatic complaints, no prior empirical research has examined these relationships among pregnant women. Additionally, prior studies of sexual victimization and somatic complaints in pregnancy have all involved fairly homogenous samples with regard to ethnicity, socioeconomic status, and access to high-quality prenatal care. Further, all but one study found fairly low prevalence rates of sexual victimization. It is therefore unclear if extant findings generalize to more diverse samples or those with higher prevalence rates of sexual victimization. Finally, prior studies have not examined the impact of sexual victimization occurring in different developmental periods (e.g., childhood, adulthood) or in multiple developmental periods, on these outcomes.

The current study, therefore, examined sexual victimization as a predictor of somatic complaints in pregnancy in an ethnically diverse, primarily low- to middle-income sample of pregnant women. Further, depression was examined as a mediator of the sexual victimization history–somatic complaints relationship. Depression was chosen as a potential mediator given evidence that women with sexual victimization histories are significantly more likely to experience depressive symptoms in pregnancy (e.g., Alvarez-Segura et al., 2014; Leeners et al., 2014; Rich-Edwards et al., 2011), as well as evidence linking depressive symptoms with somatic complaints (e.g., Apter et al., 2013; Kelly, Russo, & Katon, 2001; Zelkowitz et al., 2004), poor health practices (Harrison & Sidebottom, 2009; Nagahawatte & Goldenberg, 2008), and neuroendocrine and immune changes that may increase vulnerability to health problems (e.g., McEwen, 2003). It was hypothesized that a history of sexual victimization would be associated with somatic complaints in pregnancy, and that experiencing depressive symptoms would be a significant mediator of this relationship. Further, it was hypothesized that this mediated relationship would remain significant after controlling for sociodemographic variables. Finally, it was hypothesized that this mediated relationship would be stronger among individuals with histories of sexual victimization in multiple developmental periods (e.g., childhood and adulthood).

Methods

Participants and Procedures

Participants were 407 adult pregnant women recruited from the waiting room of a university-affiliated obstetrics-gynecology clinic in the Southeastern United States to participate in a study of women's health and unwanted sexual experiences ($n = 714$ for the full sample). The clinic serves both low- and high-risk rural pregnant women, primarily serving low- and middle-income women.

Participants were approached by a research coordinator (a psychology doctoral student) to complete a confidential survey and received a small gift for participation. All eligible women (age between 18 and 55 years and literacy in English or Spanish) were approached to participate and were recruited during times of high patient volume between 10 and 30 hours per week, depending on staff availability. Recruitment continued for approximately 1.5 years (January 2010–July 2011). Exact data on refusal rates were not obtained, but were estimated at 25%. The study was approved by the university institutional review board and participants were provided with a list of community resources for victims of sexual violence. Additionally, research coordinators assisted interested women in finding an appropriate referral source.

Measures

Sexual victimization

Two behaviorally specific, yes–no screening items were administered to assess CSA history (before age 14; Williams, Siegel, & Pomeroy, 2000). The first assessed sexual contact with a biological or nonbiological relative and the second sexual experience(s) with an older individual or individual in a position of authority, such as a doctor, teacher, minister, therapist, or other older person. To be classified as a victim of CSA, in addition to endorsing at least one screening item, participants had to endorse having at least one unwanted sexual experience before age 14 on an open-ended item asking them to indicate how many