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Associations between intimate partner violence and emotional distress among pregnant women in Durban, South Africa

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Abstract

Intimate partner violence (IPV) during pregnancy has been associated with multiple negative health outcomes for the mother, including emotional distress during pregnancy. However, little is known about IPV during pregnancy and its association with emotional distress among pregnant women in South Africa. The objectives of this study were to determine the prevalence of both emotional distress and IPV during pregnancy, to identify whether different exposures of violence and relational control were associated with emotional distress during pregnancy, and to assess whether social support attenuated the relationship between IPV and emotional distress in pregnancy. Pregnant women enrolled in the South Africa HIV Antenatal and Post-test Support Study (SAHAPS) who completed the baseline survey were included in this cross sectional analysis. We used logistic regression models to explore bivariate and multivariate relationships between the proposed covariates and emotional distress. Nearly a quarter of women reported experiencing some type of IPV during the current pregnancy, with psychological violence being the most prevalent. The odds of emotional distress was 1.41 times (95% CI: 1.26–1.57) higher for each additional episode of psychological violence and 2.01 times (95% CI: 1.16–3.77) higher for each additional episode of sexual violence during pregnancy, adjusting for other covariates. Physical violence was only marginally associated with increased odds of emotional distress (A.O.R.: 1.17, 95% CI: .99–1.38) after adjusting for other covariates. Finally, social support was also marginally significant as a main effect, but did not attenuate the relationship between IPV and emotional distress. The high prevalence of IPV among pregnant women in South Africa and its association with emotional distress during pregnancy suggest that interventions that reduce violence during or prior to pregnancy are needed. Such interventions can positively impact IPV and may also ameliorate poor mental health in pregnancy.

Poor mental health during pregnancy can lead to multiple negative health outcomes for both the mother and the child. Some studies have shown depression during pregnancy to be associated with pre-term birth (Rondo et al., 2003) and low birth weight (Rahman, Iqbal, & Harrington, 2003; Rondo, et al., 2003) for the child. Depression and anxiety during pregnancy have also been shown to be consistent predictors of postpartum depression (Heron, O'Connor, Evans, Golding, & Glover, 2004; Ramchandani, Richter, Stein, & Norris, 2009). Despite some evidence of negative effects of poor mental health during pregnancy, knowledge of the magnitude of these effects is limited, especially among South African

women. In the only study of mental health during pregnancy among women in South Africa, 41% of pregnant women reported symptoms of depression (Rochat et al., 2006).

A recent review of studies in West and North African countries found that between 4.3%–16.0% of women reported symptoms of depression and that between 4.3%–39% reported symptoms of anxiety during pregnancy among five studies (Sawyer, Ayers, & Smith, 2010). However, there was substantial variation in the reported prevalence of psychiatric disturbance across studies given different contexts, sampling strategies and measurement of mental health problems. While it appears that a significant proportion of women may experience poor mental health during the course of pregnancy in Western and Northern Africa, it is important to understand the scope of poor mental health among pregnant South African women as well.

Our understanding of factors associated with emotional distress in pregnancy among South African women is limited, however, intimate partner violence (IPV) is a key factor that has been shown to affect emotional distress in pregnancy in other settings. IPV is often defined differently across studies but can include physical perpetration, sexual perpetration and psychological perpetration (threats or coercive tactics meant to induce harm) by a current partner or spouse. Urban Tanzanian women who experienced verbal or physical conflict with their partner during the last year (a time period which included part of their pregnancy) were 1.89 times more likely to exhibit symptoms of depression and anxiety than those who did not experience conflict with their partner during the last year (Kaaya et al., 2010). Similarly, rural Vietnamese women exposed to physical perpetration and/or psychological perpetration during pregnancy were 2.11 times more likely to be diagnosed with a common perinatal mental disorder than those not exposed to IPV (Fisher, Tran, La, Kriitmaa, & Rosenthal, 2010). Neither study assessed the differential effects of physical, psychological and sexual violence on emotional distress even though each may affect emotional distress in pregnancy differently.

A review of risk factors for depressive symptoms during pregnancy in developed countries also found a consistent relationship in multivariate analyses between domestic violence and depressive symptoms during pregnancy (Lancaster et al., 2010). Studies included in this review measured pregnancy-specific violence differently; some assessed the relationship between physical and/or sexual perpetration by the current partner and others looked at all types of perpetration during pregnancy. Although there has been less attention to those aspects of relational control that are not equivalent to psychological perpetration, it is plausible that women who are in highly controlling partnerships are also more likely to experience emotional distress.

In addition to the risk of emotional distress during pregnancy as a result of experiences within the current relationship, there is some evidence that prior history of victimization affects pregnancy specific emotional distress. Bivariate analysis of women attending maternity care in London showed that women who experienced childhood sexual abuse (CSA) were at increased risk of experiencing symptoms of depression during their pregnancy (Mezey, Bacchus, Bewley, & White, 2005). This may be unsurprising given that review articles and meta-analyses have consistently shown that women who experience CSA

are at increased risk of revictimization as adults (Classen, Palesh, & Aggarwal, 2005; Messman-Moore & Long, 2003; Roodman & Clum, 2001).

In contrast to the negative impacts of current and prior IPV on mental health, women who experience social support during their pregnancy are less likely to be emotionally distressed. This relationship has been robustly demonstrated in both developing and developed country settings (Esimai, Fatoye, Quiah, Vidal, & Momoh, 2008; Lancaster, et al., 2010). According to the stress-buffering theory (Cohen & Wills, 1985), social support may play a role in mitigating the negative effects of IPV during one's pregnancy. That is, women who experience higher levels of IPV and have higher levels of social support in pregnancy may be less likely to experience emotional distress than women who experience higher levels of intimate partner violence but who have lower levels of social support in pregnancy. To our knowledge, these relationships have not been empirically tested.

The purpose of this paper is threefold; First, to describe the proportion of South African women who present with symptoms of depression and anxiety (hereafter known as emotional distress) during pregnancy; second, to assess whether different types of IPV affect risk of emotional distress differentially; third, to test whether social support modifies the relationship between IPV and emotional distress. Specifically, we hypothesize the following: pregnant women who experience higher levels of IPV and who have lower levels of social support will have a higher likelihood of exhibiting emotional distress than pregnant women who experience higher levels of IPV but have higher levels of social support. We hypothesize that this relationship will be consistent across physical, sexual and psychological violence.

Methods

Background

SAHAPS is a randomized controlled trial designed to test the efficacy of providing enhanced psychosocial support integrated with antenatal and postnatal care to HIV positive and HIV negative women. The SAHAPS intervention tailors HIV voluntary counseling and testing for the antenatal clinic setting and provide a continuum of psychosocial support for pregnant women through: (1) a standardized health education video before HIV pre-test counseling; (2) HIV pre- and post-test counseling sessions designed to prepare women for decisions related to testing, serostatus disclosure and ARV prophylaxis and also designed to help women plan strategies for sexual risk behavior change; (3) two additional post-test counseling sessions which coincide with 6 and 10-week postpartum visits and focus on legal education and referral, infant health, partner testing, sexual risk behavior change and family planning decisions and; (4) an active referral system to post-test support groups run by a staff psychologist. The intervention is designed to concurrently increase the psychosocial benefits of HIV testing and disclosure while minimizing the psychosocial harms associated with HIV testing and disclosure. Additional detail on the rationale and content of the intervention is provided elsewhere (Maman, Moodley, Groves, & Smith, 2007).

A total of 1,500 pregnant women were enrolled in SAHAPS between May 2008 and June 2010 at a primary health clinic in Umlazi, Durban, South Africa. A study recruiter screened

women for eligibility at their first antenatal care (ANC) visit. Women who met the following criteria were eligible to participate in the study: currently pregnant, age 18 or older, had either never tested for HIV or had previously tested HIV negative and had been tested at least three months ago, had a current primary sexual partner (defined as someone they had been with for six months or longer), and planned to reside in Durban for at least a year.

All women attending antenatal care were screened for eligibility, and those who were eligible and potentially interested in participating in the study were referred to survey interviewers. Survey interviewers described the purpose, procedures, risks and benefits to participating in the study. Women who were interested in participating then provided informed consent, following which they completed a baseline assessment. All surveys were conducted in Zulu or English as preferred by the participant. The assessment was facilitated by a trained survey interviewer using CAPI (computer assisted personal interviews). Following the baseline assessment participants received clinical services, including the offer of HIV counseling and testing. The research was approved by the board of ethics at both the University of North Carolina and the University of KwaZuluNatal. This cross sectional analysis at baseline includes all women prior to randomization to the intervention and control arms (n=1500).

Measures

Emotional distress was measured prior to knowledge of HIV status using the Hopkins Symptom Checklist (HSCL-25). The HSCL is a validated shortened version of a screening instrument first developed by Parloff and colleagues in 1954 for assessing symptoms of depression and anxiety (Hesbacher, Rickels, & Morris, 1980; Parloff, Kelman, & Frank, 1954; Winokur, Winokur, Rickels, & Cox, 1984). The full scale has been previously validated as a consistent measure of emotional distress in a number of different settings, including South Africa (Kaaya, et al., 2010; Kagee & Martin, 2010). The measure demonstrated strong internal consistency (Cronbach's $\alpha = .90$). The commonly accepted cut point indicating emotional distress is 44. All participants with a score ≥ 44 were categorized as emotionally distressed and likely cases of either major depression or generalized anxiety.

Intimate partner violence was measured using an adapted version of the WHO Violence Against Women instrument, which was developed for international use, and measures physical, sexual and psychological victimization (World Health Organization, 2005). The instrument contains 13 items that assess frequency of victimization with the respondent's primary sexual partner during the current pregnancy (e.g. "during this pregnancy, how many times has your current partner slapped or thrown something at you that could hurt you", or "during this pregnancy, how many times has your current partner belittled or humiliated you in front of other people," etc.). This instrument has been validated among a number of African populations and the measure demonstrated acceptable internal consistency with the current study population (Cronbach's $\alpha = .76$). To assess the prevalence of IPV, we dichotomized responses for each of the thirteen questions (0=no violence, 1=violence). We then created three binary variables (physical, psychological and sexual) to capture the different types of violence a woman could experience during pregnancy.

For the bivariate and multivariate analyses, we created separate continuous variables for physical, psychological and sexual violence. Physical violence was assessed through six questions in the instrument. The response categories included: never, once, between 2–3 times, between 4–10 times and more than 10 times. Women’s responses were converted into an ordinal scale that ranged from 0–4, where never=0 and more than 10 times=4. Each woman’s response was summed across the six items to create a single continuous variable of physical violence. Using this same method, we created separate continuous variables from four items on psychological violence and three items on sexual violence.

Childhood sexual abuse (CSA) was measured at baseline with the following question: “when you were growing up (before the age of 12 years) did you undergo any unwanted sexual experiences? By sexual experiences, I mean, inappropriate touching or unwanted sexual intercourse?” In addition, all women who reported that their first intercourse was forced and that they were under the age of 12 at the time were categorized as having experienced childhood sexual abuse. CSA has been measured the same way in other studies of IPV among women in South Africa (Dunkle, Jewkes, Brown, Yoshihama, et al., 2004).

Perceived relational control was measured categorically (low, medium, high) using the Sexual Relationship Power Scale (Pulerwitz, Amaro, De Jong, Gortmaker, & Rudd, 2002), with a high score meaning that women perceived their male partner had a high levels of control in the relationship and a low score meaning that the women perceived that their male partners had low levels of control in the relationship. The original scale consists of 23 items that measure women’s subjective experiences of control in a sexual partnership (e.g., “If I asked my partner to use a condom, he would get violent”). The scale has been validated as a measure of relational control among other populations of pregnant women in South Africa (Dunkle, Jewkes, Brown, Gray, et al., 2004; Jewkes, Dunkle, Nduna, & Shai, 2010) and demonstrated acceptable internal consistency with the current population (Cronbach’s $\alpha=.78$).

Social support was measured continuously using the Norbeck Social Support Questionnaire, a seven-item instrument that measures emotional and material support (Norbeck, Lindsey, & Carrieri, 1981, 1983). Respondents are asked to list all individuals who provide them with support in their lives and then are asked seven questions about each of these individuals. A sample item measuring emotional support is “how much does this person make you feel liked or loved?” The respondent then answered on a 5 point Likert scale (Cronbach’s $\alpha=.74$).

Other variables included in the models were chosen based on the literature and included: SES (Lancaster, et al., 2010) (measured by summing the number of household amenities and durable goods (e.g. working television, running water inside home, etc.)), type of relationship (Adewuya, Ola, Aloba, & Mapayi, 2006; Lancaster, et al., 2010), pregnancy intention (Lancaster, et al., 2010; Rochat, et al., 2006) and gestational age (Lee et al., 2007). Gestational age was determined by an ultrasound if done or the average of assessment of symphysis-fundal height (SFH) and palpation. Other demographic characteristics (age and education) were not included as controls since they have not been associated with symptoms of depression or anxiety during pregnancy in other literature reviews (Lancaster, et al., 2010; Sawyer, et al., 2010).

Statistical Analysis

We first described the sociodemographic characteristics of the study participants. Next, we explored bivariate relationships between each of the proposed covariates and emotional distress. We then ran our first multivariate logistic regression model to estimate the main effects of IPV, CSA and other proposed covariates on emotional distress during pregnancy. In the second multivariate logistic regression model, we tested the hypothesized interaction (social support*IPV) separately for each type of violence. All covariates were retained for the multivariate logistic regression regardless of their significance in the bivariate analysis because factors were chosen based on empirical literature and the a priori hypothesis that pregnant women who experience higher levels of IPV who have lower levels of social support will have a higher likelihood of exhibiting emotional distress than pregnant women who experience higher levels of IPV but have higher levels of social support. All analysis was performed using SAS software, Version 9.2 (SAS, 2009).

Results

All 1,500 pregnant women enrolled at baseline were eligible for inclusion in the study. We used casewise deletion to delete 98 women, or 6.52% of the sample, based on missing data. As seen in Table 1, participants were of a mean age of 27.30 years, with a range of 18–46 years of age. Nearly all of the participants had completed high school or had had some tertiary education. A small proportion of participants (5.85%) reported experiencing childhood sexual abuse. Participants had been with their current sexual partner for an average of 4.5 years (range 6 months -26 years), though a majority of them (72.11%) were not married to or living with their partner. More than half of the participants (56.25%) were in their second trimester when they completed the baseline survey.

A total of one third (33.38%) of the participants indicated elevated emotional distress, based on a cut-point >44 on the HSCL measure (see Table 1). Nearly a quarter of women (24.75%) experienced some type of violence during the current pregnancy. Psychological violence was the most prevalent type of violence women experienced during pregnancy, reported by one fifth of women (19.19%) at baseline. Fewer women experienced physical violence (10.13%) or sexual violence (2.78%) during pregnancy (see Table 2).

Bivariate analyses shown in Table 3 suggests that women who experienced childhood sexual abuse were almost four times (95% CI: 2.50–6.36) more likely to be emotionally distressed than women who did not experience childhood sexual abuse. The odds of emotional distress was 1.48 times (95% CI: 1.28–1.71) higher for each additional episode of physical violence during pregnancy, 1.53 times (95% CI: 1.38–1.69) higher for each additional episode of psychological violence during pregnancy and 2.99 times (95% CI: 1.74–5.13) higher for each additional episode of sexual violence during pregnancy. Finally, women who perceived that their partners had high levels of control in their relationship were 1.64 times more likely (95% CI: 1.30–2.06) to experience emotional distress in pregnancy compared to women who perceived their partners had low levels of control in their relationship. We found no relationship between emotional distress and social support or any other sociodemographic variables. The lack of association persisted between both emotional distress and social

support and emotional distress and SES even when we modeled social support and SES as categorical variables (low, medium and high).

In the multivariate analyses (also in Table 3), women who reported experiencing childhood sexual abuse were 2.84 times (95% CI: 1.71–4.70) more likely to be emotionally distressed than women who did not report experiencing childhood sexual abuse, adjusting for all other covariates. The odds of emotional distress was 1.41 times (95% CI: 1.26–1.57) higher for each additional episode of psychological violence during pregnancy, adjusting for all other covariates. The odds of emotional distress was 2.01 times (95% CI: 1.16–3.77) higher for each additional episode of sexual violence during pregnancy, adjusting for all other covariates. Finally, women who perceived their partners to have high levels of control in the relationship were 1.47 (95% CI: 1.08–2.00) times more likely to experience emotional distress than women who perceived their partners to have low levels of control in the relationship, adjusting for all other covariates.

Social support was only marginally significantly associated with emotional distress (A.O.R = 1.01, 95% CI: 1.00–1.01, $p=.07$) after adjusting for other covariates. On the other hand, gestational age was significantly associated with emotional distress after controlling for other variables. Women in their second trimester were 48% less likely to be emotionally distressed than women in the first trimester (A.O.R= .54, 95% CI: .35–.83), and women in their third trimester were 60% less likely to be emotionally distressed than women in the first trimester (A.O.R=.40, 95% CI: .26–.63), adjusting for all other covariates. Finally, living together, socioeconomic status, and pregnancy intention were not significant predictors of emotional distress in the multivariate model.

The interaction between violence in pregnancy and social support was not significant, regardless of whether violence in pregnancy was modeled as a continuous or categorical variable. Given the non-significance of the proposed interaction, we only presented the main effects in these analyses (Table 3).

Discussion

A total of one third of our participants scored above the clinical cut-point for emotional distress. Childhood sexual abuse, high levels of male control within the relationship and sexual and psychological violence during pregnancy were all strongly associated with emotional distress during pregnancy even after adjusting for other sociodemographic and relational variables. Physical violence was only marginally significantly associated with emotional distress during pregnancy after adjusting for other covariates (A.O.R.: 1.17; $p=.063$).

The finding that psychological violence during pregnancy was associated with emotional distress counters a U.S. based study on pregnant women wherein there was a bivariate association between symptoms of depression and physical violence ($p=.01$) and symptoms of depression and sexual violence ($p=.08$) but not between symptoms of depression and psychological violence ($p=.10$) (Martin et al., 2006). However, given the small sample size of the U.S. study ($n=95$), it is possible that the magnitude of the associations would change

when adjusted for confounders (thereby affecting the interpretation of the reported findings). The fact that the women in our study who experienced psychological violence were at risk of emotional distress suggests that it is important to recognize that different types of violence may affect mental health differentially during pregnancy. Screening women solely for physical or sexual violence may not be sufficient if we wish to improve mental health during pregnancy.

Despite the association between all types of IPV and emotional distress, social support failed to attenuate the effects of intimate partner violence on emotional distress. It is possible that this finding was an effect of our measurement of social support. In their review of U.S., Canadian, Europe, New Zealand and Australian literature, Lancaster et al. (2010) found that partner social support consistently yielded a medium to large association with depressive symptoms, but that social support from any source tended to yield a small association in multivariate analyses. Our measure of social support was not specific to partners but relied on the female participants to identify any individuals who offered them support. This measure was chosen largely because a large portion of women in Durban do not reside with their primary partners and we thought a broader measure of relational support would be more appropriate. Despite the seeming appropriateness of the measure, it had little effect on IPV or emotional distress in pregnancy. While the effect of support may actually be different in the South African context, it is also possible that the weak internal consistency of the scale affects the power with which we can draw conclusions about its effect. In short, both partner and broader social support should be measured in future studies to better understand whether they interact with IPV to attenuate emotional distress for South African women during pregnancy.

Women who were in the second and third trimesters were significantly less likely to be emotionally distressed as compared to women who were in the first trimester. This finding contradicts two earlier longitudinal research studies. In the first one, which took place in Hong Kong, women's experiences of anxiety and depression followed an inverted U, with symptoms of both being highest in the first and third trimester (Lee, et al., 2007). In contrast, another longitudinal cohort study of pregnancy women in Avon found that women's symptoms of depression increased slightly over the course of the pregnancy (Evans, Heron, Francomb, Oke, & Golding, 2001). Based on the inconsistency of findings across these three studies, it appears that future longitudinal research is needed to better understand whether and why emotional distress changes over the course of the pregnancy among South African women.

One of the strongest predictors of poor mental health during pregnancy is poor mental health prior to pregnancy (Heron, et al., 2004; Ramchandani, et al., 2009). A major limitation of the current study is that we did not assess women's history of prior emotional distress or psychiatric disturbance. However, the strong association between IPV within the current pregnancy and emotional distress in the current pregnancy are temporally bound by the pregnancy itself, which suggests that IPV during pregnancy may impact levels of emotional distress, regardless of prior mental health history.

Another major limitation of the cross sectional analysis is our inability to infer temporality between emotional distress and the IPV that occurs during pregnancy. Women who are emotionally distressed may be more likely to experience IPV during pregnancy than women who are not emotionally distressed. While there is evidence that IPV leads to negative mental health effects across the life course (Ellsberg, Jansen, Heise, Watts, & Garcia-Moreno, 2008), additional longitudinal study of the interplay between violence and mental health during pregnancy is warranted.

The high prevalence of IPV among pregnant women in South Africa and its association with emotional distress during pregnancy suggests that interventions that screen for and address violence during pregnancy are needed. Screening for physical, sexual and psychological intimate partner violence may help clinicians to identify women who are experiencing IPV during pregnancy (Martin, et al., 2006), which in turn, may help them identify women at risk of emotional distress. Further, interventions that reduce women's risk of IPV during pregnancy may reduce IPV-related morbidities during pregnancy, decrease emotional distress and positively impact infant birth outcomes (Kiely, El-Mohandes, El-Khorazaty, & Gantz, 2010).

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Table 1

Sociodemographic and behavioral characteristics of study participants (n=1402)

Age, mean (SD)		27.29 (5.36)
Years in relationship, mean (SD)		4.47 (4.08)
Emotionally distressed (n, %)		506 (33.38%)
Unintended pregnancy (n, %)		1123 (80.10%)
Gestational age	1 st trimester	107 (7.63%)
	2 nd trimester	784 (55.92%)
	3 rd trimester	511 (36.45%)
History of childhood sexual abuse		82 (5.85%)
Marital status (n, %)	Married, living together	61 (4.35%)
	Married, living separate	21 (1.50%)
	Partnered, living together	309 (22.04%)
	Partnered, living separate	1011 (72.11%)
Education (n, %)	Less than high school	93 (6.63%)
	Some high school	592 (42.23%)
	Completed high school	651 (46.43%)
	Tertiary diploma or degree	66 (4.71%)

Table 2

Victimization during pregnancy (n, %)

Physical abuse during pregnancy	142 (10.13%)
Psychological abuse during pregnancy	269 (19.19%)
Sexual abuse during pregnancy	39 (2.78%)

Table 3

Bivariate and multivariate relationships between proposed covariates and Emotional Distress

	Bivariate OR	95% CI	p-value	Adjusted OR	95% CI	p-value
Live together	1.13	.88–1.45	ns	1.12	.85–1.49	ns
Gestational Age						
1 st trimester (ref)	1.00					
2 nd trimester	1.07	.85–1.34	ns	.54	.35–.83	.0048
3rd trimester	.77	.61–.97	.0290	.40	.26–.63	<.0001
Pregnancy intention	.83	.62–1.10	ns	.82	.60–1.11	ns
SES	1.01	.98–1.04	ns	1.03	.85–1.49	ns
Childhood sexual abuse	3.99	2.50–6.36	<.0001	2.84	1.71–4.70	<.0001
Relational control						
Low (ref)	1.00					
Medium	.93	.73–1.18	ns	1.26	.93–1.72	ns
High	1.64	1.30–2.06	<.0001	1.47	1.08–2.00	.0133
Physical violence	1.48	1.28–1.71	<.0001	1.17	.99–1.38	.063
Psychological violence	1.53	1.38–1.69	<.0001	1.41	1.26–1.57	<.0001
Sexual violence	2.99	1.74–5.13	<.0001	2.01	1.16–3.77	.0138
Social support	1.00	1.00–1.01	ns	1.01	1.00–1.01	.069