Published in final edited form as:

J Affect Disord. 2007 September ; 102(1-3): 227–235. doi:10.1016/j.jad.2006.09.026.

Intimate Partner Violence and Sexual Coercion among Pregnant Women in India: Relationship with Depression and Post-Traumatic Stress Disorder

Deepthi Varma, M.Phil, Prabha S. Chandra, MD, MRC Psych, and Tinku Thomas, M.Phil

Departments of Psychiatry and Biostatistics National Institute of Mental Health and Neuro Sciences Bangalore, India

Michael P. Carey, Ph.D.

Center for Health and Behavior Syracuse University, Syracuse, NY, USA

Abstract

Background—Intimate partner violence (IPV) is prevalent in most parts of the world. It is also prevalent during pregnancy.

Methods—This study assessed the prevalence of IPV during pregnancy and evaluated its relationship with mental health outcomes, including depression and post-traumatic stress disorder (PTSD). Pregnant women ($n = 203$) attending an antenatal clinic in a public hospital in Bangalore were assessed for presence of IPV as well as depressive, somatic and PTSD symptoms as well as life satisfaction.

Results—Self-reported physical violence in the last year was reported by 14% of women, psychological abuse by 15%, and sexual coercion by 9%. One-half of these women reported ongoing abuse during pregnancy. Depression, somatic, and PTSD symptoms were higher in those with a history of abuse or sexual coercion, and life satisfaction was poorer in those with any form of violence. Among those reporting a history of sexual coercion, severity of violence was related to increased psychiatric morbidity. Alcohol abuse in the spouse was a predictor of the presence and severity of abuse.

Limitations—The study was conducted in a single clinic in southern India which is a large country with very diversified populations.

Conclusion—The experience of intimate partner violence and its mental health consequences are quite prevalent in India which is a culture where gender disparities are normative and pregnancy is a particularly vulnerable period.

Introduction

Intimate partner violence (IPV) among pregnant women has been reported from most parts of the world. Prevalence rates have ranged from 15% in China (Leung, et al., 1999; Leung, et al., 2002) to 20% in Australia and the United Kingdom. North American investigators

© 2006 Elsevier B.V. All rights reserved.

Correspondence: Dr. Prabha S. Chandra Professor of Psychiatry NIMHANS Bangalore – 560029 INDIA Email: prabhaproject@gmail.com Fax: 0091 80 26564830 Voice: 0091 80 26995272.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

have shown the prevalence of violence against pregnant women to range from 4% to 30% (Amaro, et al., 1990; Flitcraft, 1992; Gazarmararian et al., 1995; Helton, et al., 1987; McFarlene, et al., 1992). A Canadian study found that 6.6% of women in a mostly urban sample reported physical abuse during pregnancy (Stewart and Cecutti, 1993). A study on prenatal predictors of intimate partner abuse in the United States found that 10.9% of their study sample experienced physical abuse during the current pregnancy and 62% reported their current intimate partner or former intimate partner to be the perpetrator (Dunn and Oths, 2004).

In India, the figures of IPV during pregnancy have ranged from 13% to 28%, depending on the sample studied and nature of the perpetrator (Peedicayil et al., 2004; Khosla et al., 2005). For example, 22% of women attending an antenatal clinic in central India reported physical violence (Purwar et al., 1999). Men also acknowledge the relatively high prevalence of IPV; thus, a study conducted in five districts in northern India reported that 5.4–13% of their sample ($n = 1990$) acknowledged assaulting their wives during pregnancy (Martin et al., 1999). A study done in a hospital in the post natal ward, 48–72 hrs after vaginal delivery in New Delhi (Muthal-Rathore & Arora, 2002) reported that 168 of 800 women interviewed (21%) reported abuse during pregnancy. Reports from the SAFE study focusing on lifetime violence during pregnancy among 9938 women from seven Indian states reported moderate to severe violence (defined as being slapped, hit, beaten, kicked, or threatened with a weapon) ranging from 5 to 16% (Peedicayil et al., 2004); 18% of women experienced at least one of the above behaviors.

Although prevalence rates have varied across studies, due to varying definitions of violence, non-uniform methodologies, and sampling differences (Peedicayil et al., 2004), these studies indicate that, worldwide, violence during pregnancy is a major problem.

Studies have also shown that IPV during pregnancy affects both the reproductive and mental health of the pregnant woman. Physical abuse during pregnancy has been found to increase the risk of miscarriage, abruptio placentae, preterm labour and delivery, foetal fractures and low birth weight (Bullock and McFarlene, 1989). Rupture of the uterus, liver or spleen, antepartum hemorrhage and pelvic fracture have also been reported as the serious reproductive health consequences of IPV during pregnancy (Sammons, 1981). In addition to reproductive health outcomes, mental health consequences have also been observed.

Several studies have demonstrated the relationship between violence and mental health among women in general. For example, Kumar et al. (2005) reported that physically violent behaviors (e.g., 'slap,' 'hit,' 'kick,' or 'beat') doubled the relative risk of poorer mental health of abused women compared with women who had not reported any IPV. As in earlier studies (McCauley et al., 1995; Flanzer, 1993), Kumar et al. also observed that women who (a) experienced dowry harassment or harsh physical punishment during childhood, (b) witnessed their father beating their mother, (c) whose husbands regularly consumed alcohol, and (d) experienced physical violence at home were at increased risk of poor mental health. High school education for both the woman and husband and more social support served as protective factors. An earlier study from India has also reported that women faced with enormous social, physical, and economic stressors in association with IPV were more likely to have higher levels of depression in the postpartum period (Patel et al., 1999).

Few studies have assessed the relationship between IPV and depression during pregnancy. Smith et al. (2004) reported on psychiatric morbidity among women attending pre-natal clinics, and found that women with a lifetime history of IPV were more likely to present with a psychiatric disorder. Leung, et al., (2002) described an association between IPV and postnatal "blues"/depression in China. Patel et al. (1999) conducted a community study in

India and found that domestic violence was a strong predictor of antenatal and postnatal depression. Mezey et al. (2005) assessed 200 women receiving postnatal or antenatal care at a South London maternity service, and reported that 121 (60.5%) women reported at least one traumatic event, two-thirds of these had experienced multiple traumatic events and, of the latter, 23.5% had experienced domestic violence. They also found that physical and sexual abuse co-occurred: 13 (10.7%) women with a trauma history had current PTSD. Severe PTSD symptoms were associated with physical and sexual abuse histories and repeat victimization.

The evidence suggests an association between IPV violence and adverse mental health outcomes and a relationship between pregnancy and IPV, as well as some suggestions that culture might influence IPV. That is, pregnant women in traditional societies — where gender inequalities are evident — might be even more vulnerable to IPV. Research is needed to clarify the relationship between the different forms of IPV (i.e., psychological, physical and sexual violence) and mental health outcomes, especially in the developing world where relatively little research is available. Therefore, this study provides evidence regarding (a) the prevalence of IPV during pregnancy, and (b) the relationship between IPV and mental health outcomes (i.e., depressive, somatic, and PTSD symptoms) in a sample of pregnant Indian women.

Methods

Participants

Consecutive admissions to the antenatal outpatient clinic of a large urban obstetric centre in southern India over a two month period were recruited. Women were eligible to participate if they (a) were within the age range of 18 to 49 years, (b) could speak English or Kannada (regional language of the state where the study was conducted), and (c) could comprehend the nature of the study and provide a written informed consent. Women with past or current history of severe mental illness (schizophrenia, bipolar disorder, or recurrent depressive disorders) were excluded from the study. Two hundred and three women met the inclusion criteria and agreed to participate.

Procedures

All procedures were approved by the Institutional IRB. Women who met the inclusion criteria were approached for possible participation by trained research assistants (RAs) who were fluent in English and Kannada. The RA provided an explanation of the nature and purpose of the study, including assurance of privacy and confidentiality regarding the information disclosed. In the interest of her safety each woman was briefed about the need to maintain discretion regarding disclosure of the nature of the study to others including family members. If a woman declined participation, she was given information regarding abuse prevention. If interested, women were asked to provide written informed consent. After consenting, each woman was administered a structured questionnaire in a private cubicle that contained the following measures.

Measures

Structured interview.—The assessment started with collecting information on the women's sociodemographic characteristics (i.e., age, education, employment, income, marital status, religious background, number of people in the household), current pregnancy (i.e., parity, prenatal care, injuries, hospital admissions), and spouse's sociodemographic characteristics (i.e., age education, employment, income, alcohol use).

Next, women were asked about experiences of intimate partner violence by a screening interview. They were asked about the frequency of abuse; whether any injuries were sustained and, if so, the type of injury sustained; identity of the perpetrator; relationship of the perpetrator; whether the abuse occurred during pregnancy and, if so, during which trimesters; whether the perpetrator was aware that the woman was pregnant during the abuse; and the woman's perception of the perceived 'reason' for the abuse.

Severity of abuse was assessed by the **Index of Spouse Abuse (ISA; Hudson and McIntosh, 1981)**. The ISA contains 30 items that assess verbal (e.g., "My partner screams and yells at me"), emotional ("My partner has no respect for my feelings"), sexual ("My partner demands sex whether I want it or not"), and physical ("My partner punches me with his fists") aggression. This self-report scale designed to be administered to the female victim. The ISA yields two separate scores: (a) severity of physical abuse score (ISA-P) and (b) severity of non-physical abuse score (ISA-NP) (Hudson and McIntosh, 1981). Scores on both ISA-P and ISA-NP can range from 0 to 100.

Sexual Experiences Scale (SES; Koss and Oros, 1982).—The SES is a 10-item instrument designed to identify instances of sexual aggression and victimization. The SES assesses coercive experiences ranging from unwanted sexual play to forced penetrative sexual acts in a progressive sequence. The SES yields a single summary score; it is internally consistent ($\alpha = 0.74$), stable, and well-validated (Koss and Gidycz, 1987). The SES has been used by the investigators of the current study earlier in a south Indian population of severely mentally ill women (Chandra et al, 2003). For the purpose of this study we rated women as positive for sexual coercion if they had scored positive on items 4 to 10, indicating severe coercion.

Scale for Assessment of Somatic Symptoms (SASS; Chaturvedi et al., 1987).—This scale contains 25 symptoms, each of which is rated on a six-point scale (0 = absent to 5 = continuous and severe). This scale has been used in previous research in India to assess somatic symptoms associated with depression and somatisation disorders (e.g., Chaturvedi and Michael, 1993). SASS assesses five clusters of somatic symptoms: (a) pain-related symptoms (e.g., headache, abdominal pain), (b) sensory somatic symptoms (e.g., tingling, palpitations), (c) non-specific symptoms (e.g., weakness of body, trembling), (d) biological function related symptoms (e.g., lack of sleep, diarrhea), and (e) gynaecological symptoms (e.g., pelvic pain, dyspareunia).

Beck's Depression Inventory (BDI; Beck et al, 1961).—The BDI is a 21-item self-rated scale that evaluates key symptoms of depression. Individuals are asked to rate themselves on a 3-spectrum (0=least, 3=most), with a score range of 0 to 63, where higher scores indicate higher frequency and severity of depressive symptoms. The authors have reported that the average internal consistency estimates of the total scores were 0.86 for psychiatric patients (Beck et al, 1988). The BDI yields a single score, and higher scores indicate greater depressed affect.

Post-Traumatic Symptom Checklist (PCL; Weathers, et. al., 2001).—This widely-used and validated scale assesses the 17 main symptoms of PTSD to assess re-experiencing, avoidance, psychic numbing, and hyperarousal symptoms. Each item is rated on a 5-point scale (1 = not at all to 5 = extremely). The PCL yields a single summary score that is internally consistent (Weathers, et al., 1999).

Satisfaction with Life Scale (SWLS; Diener et al., 1985).—The 5 item SWLS assesses the degree of satisfaction felt by participants regarding their own lives. Participants rate items using a 7 point Likert scale. The SWLS yields a single score, and higher scores

indicate a greater degree of overall satisfaction with life. Internal consistency was measured at an alpha of 0.87 and the test-retest reliability was measured at 0.82 (Diener et al., 1985).

Data Analyses

We sought to determine the prevalence, severity, and nature of IPV, and its relationship to sociodemographic details and mental health indicators. Thus, after exploring the sociodemographic correlates of IPV, we then compared women who reported any intimate partner violence (i.e., physical, psychological, or sexual) to women who did not report IPV on the following health indicators: depression scores, number of PTSD symptoms, somatic symptoms and life satisfaction. To assess the relationship between severity of violence and mental health parameters, we correlated ISA scores with the health indicators.

Chi-square tests were used to examine the association between socio-demographic variables and presence of abuse. Students' *t* tests were used to examine the relationship between IPV and severity of somatic symptoms, depression, life satisfaction, and PTSD scores. Logistic regression analysis was used to identify the significant socio-demographic predictors of violence. Finally, Pearson's correlation coefficient were calculated to estimate the strength of the association between severity of abuse and mental health parameters. One-tailed *p* values are reported because we had a priori predictions regarding the relationships between IPV and health outcomes. All analyses were carried out using SPSS Version 11.0 (SPSS, Chicago, IL).

Results

Sociodemographic Characteristics of the Participants

The mean age of the 203 women was 23 years (range 16 to 34 years); 47% (*n* = 96) were 21–25 years old, 33% (*n* = 67) were less than 20, and 20% (*n* = 40) were more than 25 years. All women were married. More than half (55%) were Hindu, 39% were Muslim, and 6% were Christian. Eighty-eight (43%) were primiparous; 41 (20%) had more than one child during the time period assessed. Three-fourths (76%) had either primary or high school education, 13% had no formal schooling, and 10% had attended college. Most women (77%, *n* = 157) were of urban origin and homemakers (89%, *n* = 181); 50% lived in joint families whereas 47% lived in nuclear families. The average family income was 2912 rupees a month.

Ten women (5%) reported that their spouses had multiple sexual partners during their pregnancy whereas 57 (27%) women reported alcohol use by their spouses; harmful use was reported by 16 (29%) women.

Prevalence of Intimate Partner Violence and Sexual Coercion

During the past year, 28 of the 203 women (14%) reported physical violence and 30 (15%) reported psychological violence; all those who reported physical violence also reported psychological violence. Of the 30 women who reported either physical or psychological violence in the past year, 15 (50%) reported ongoing violence during pregnancy. All women reported that the violence remained constant (i.e., did not decrease or increase) during pregnancy. Of the 15 women who reported violence, 8 reported violence in all three trimesters of the pregnancy. Sexual coercion involving force (items 4 to 10 on the SES) during pregnancy were reported by 18 women (9%). In all cases, the perpetrator of the abuse was the intimate partner.

Sociodemographic Correlates of Intimate Partner Violence

There were no significant differences in most sociodemographic or obstetric variables (parity, trimester) between those who experienced violence and those who did not (all $ps > .10$). Only religion differed for those with abuse and those without, with abuse being more common among Hindu families (19%) than among families of other religions (8%), $X^2(1) = 5.41, p < .05$.

Spouses of abused women had a higher prevalence of alcohol use (82%) compared to spouses of non-abused women (18%), $X^2(1) = 51.3, p < .001$. Harmful use of alcohol remained a significant predictor of presence as well as severity of violence even after controlling for age of spouse, place of residence, household income, number of children and family type. In logistic regression for presence of both physical and psychological abuse, the odds of presence of abuse when harmful use of alcohol was present was 30.6 as compared to when it was absent ($p < .001$).

The other variables which were found to be significant predictors of IPV were spouse age and household income. The odds of physical and psychological abuse was lower with increasing spouse age (OR = 0.21 ($p < .05$) for age 26–30 and 0.17 ($p < .05$) for age 30+). The likelihood of abuse was greater (OR = 13.7, $p < .05$) for women in households with an income greater than Rs. 3000 compared to those in the lowest category of income (i.e., less than Rs. 1000).

Intimate Partner Violence and Depressive, Somatic and PTSD Symptoms

We compared scores on the mental health markers (i.e., depression, somatic symptoms, PTSD, and life satisfaction) between women with and without experience of physical and psychological violence. [Because all women who reported physical violence also reported psychological violence (and only two women reported psychological violence alone), we used scores of women undergoing physical violence ($n = 28$) for these analyses.] As can be seen in Table 1, women experiencing violence reported more somatic symptoms (except for gynaecological symptoms) as well as higher depression scores. They also reported significantly more PTSD symptoms, and a lower level of life satisfaction.

As depicted in Table 2, women who reported sexual coercion in the last year also reported higher non-specific, sensory and biological somatic symptoms. They also reported higher depression symptoms and poorer quality of life; PTSD scores were in the predicted direction, but not significantly different.

Table 3 depicts the relationship between severity of violence (based on ISA scores) and mental health markers. Sensory somatic symptom score was significantly related to severity of non-physical violence. However, in women who had undergone both violence and sexual coercion, the ISA scores were related to biological symptoms (Table 4).

Discussion

The current study provides a rare glimpse into intimate partner violence (IPV) and its relationship to depression, PTSD and somatic symptoms among pregnant Indian women. We investigated (a) the prevalence of IPV; (b) the sociodemographic correlates of IPV; and (c) the association between IPV and depressive, somatic, and PTSD symptoms, as well as general life satisfaction. Several important findings were obtained.

First, Indian women experience IPV at troubling rates; physical abuse was reported by 14% of women, psychological abuse by 15%, and sexual coercion by 9%. Although we assessed physical and psychological aggression separately, they often co-occur, and one-half of these

women reported ongoing abuse during pregnancy. These findings clearly document the vulnerability of Indian women to intimate partner violence, consistent with earlier reported findings from different cultures. Although it is difficult to compare rates across cultures (due to the many methodological differences in the studies), it is clear that the phenomenon of intimate partner violence is universal, and continues to be a subject that warrants greater clinical and research attention.

Second, by exploring the correlates of IPV, we learned that IPV was more common among families that were of Hindu faith, younger age, and higher household income, and when alcohol abuse was present in the male partner. The association between IPV and both Hindu faith and family income were unexpected. Future research might re-examine these links to see if they replicate, and explore possible explanations for the relationships if found again.

In contrast, we expected to find a relationship between age and IPV consistent with earlier research (Bullock et al., 1989; Hillard, 1985; Stewart and Cecutti, 1993). Indeed, we found that IPV decreased as women and their partners aged. This decline may reflect enhanced maturity and emotional control in male partners, decreased alcohol use, formal intervention, or other factors. Jenson (2003) explained the phenomenon of increased IPV among younger women as a function of the age of marriage; he noted that 70% of women in South Asian countries are married while they are adolescents. (In our sample, approximately 33% of women were less than twenty years old.) However, the association between women's age and physical abuse has not been consistent across studies (Amaro et al., 1990; Helton et al., 1987; Muhajarine and D'Arcy, 1999), so further investigation of the age-IPV relationship is needed.

Finding that alcohol abuse co-occurred with IPV was not surprising as it has been demonstrated previously (e.g., Muhajarine and D'Arcy, 1999; Kumar et al., 2005). One interpretation of this association is that alcohol use (or abuse) precedes IPV, but the evidence is largely correlational. However, a few studies (Cunardi et al., 1999; Kessler et al., 2001; Leonard et al., 1985; Sugarman et al., 1996) have reported a relationship between IPV and the pattern of alcohol consumption (heavy drinking, problem drinking, and alcoholism diagnosis), that is, more drinking causes more severe violence. The consistency of this finding suggests that clinicians inquire about alcohol use, and intervene with partners where this is feasible.

Our study identifies several sociodemographic characteristics of women and their partners that might help to explain the prevalence of IPV, but must be considered a very preliminary investigation. More detailed qualitative and quantitative investigation is needed to explicate the many possible 'causes' of IPV. In addition to the factors suggested by our study, we believe that investigation of several social and cultural factors is warranted. For example, the stressors associated with poverty, such as crowding and loss of hope may be worthy of investigation. In addition, evidence from other countries suggests that gender roles in traditional societies may predispose men to aggress against women under stress (Baker et al., 2005; Perilla, 1999). Exploration of the protective effects of male and female androgyny, and egalitarian public policies is also worthwhile.

The third set of findings involves the association between the experience of IPV, and important mental health markers, including depressive, somatic, and PTSD symptoms, as well as overall life satisfaction. Here we observed a consistent pattern whereby women who reported IPV were more likely (than non-abused women) to report negative health symptoms and lower life satisfaction. This pattern corroborates much prior research in India and elsewhere (e.g., Mezey et al., 2005; Nixon et al., 2004; McFarlane et al., 2005).

We believe that the co-reporting of depressive and somatic symptoms reflects a common emotional pathway. It is likely that the somatic symptoms, in otherwise healthy young women, reflects depressed affect being expressed in a (more) socially acceptable way. Indeed, the expression of depression through somatic symptoms may be a response to IPV and an indirect call for help. Panchanadeswaran and Koverola (2005) noted the widespread belief that domestic violence is a private matter and should be kept secret; in their study of battered Indian women, this belief prevented many women from seeking help. Indian women are also socialized to be subordinate to maintain harmony, peace, and family honor (Ahmed-Gosh, 2004). This cultural value may prevent women from help seeking, may lead to the internalization of their stress, and may lead to somatization to communicate distress. Further promoting somatization is the social acceptance of presenting a somatic symptom such as headache or body pain, especially during pregnancy. Because a pregnant woman make several visits to health facilities during her pregnancy, an adequate awareness of these symptom manifestations gives the health care provider opportunities to explore history of abuse within the family.

In this regard, Fischback and Herbert (1997) noted the failure of physicians to identify depressive symptoms among women. Perhaps this oversight results from the popular misunderstanding that the core symptoms of depression (i.e., sadness, worthlessness, decreased interest) are universal (Sartorius et al. 1980); however, cross-cultural research indicates that the full range of depressive syndrome may not always manifest. This is, in many places, somatic symptoms predominate (Marsella et al., 1985). Depression being expressed through somatisation in Indian culture, as elsewhere, is preceded (Chaturvedi and Michael, 1993).

Interestingly, the majority of women had sub-threshold PTSD scores. This finding corroborates Stein et al.'s (1997) observation that sub-threshold presentations of PTSD and depression are common among individuals exposed to trauma such as criminal victimization, sexual assault, and motor vehicle accidents. Such PTSD symptoms are not only prevalent but frequently disabling (Stein et al., 1997). Thus, it is important for health care providers to be sensitive to the range of symptoms presented by pregnant women during antenatal consultations. Finally, we observed the coexistence of physical and psychological aggression. This may be because the physical acts of hitting or slapping are often preceded by a verbal argument or abuse. Either way, the consequences of domestic abuse extend beyond the physical harm inflicted. Marcus (1994) reported that a single episode of violence may have long term consequences. Nixon et. al. (2004) suggested that the higher depression scores seen among those who were subjected to psychological aggression may be due to its effect on an individual's sense of self, particularly beliefs regarding self-esteem, competence and worth. Fischback and Herbert (1997) explained that an intensive threat or fear-provoking language may immobilize and/or explained that an intense shame or loss of face suffered by mockery or verbal abuse may devastate a wife and undermine her use of social networks and support to ameliorate her psychological pain. This creates a sense of helplessness that accounts for the higher scores in depression and somatic symptom scales. The psychological impact of IPV is thought to be higher on a woman if she is pregnant (Mezey et al. 2005). This is also a period when women need their partner's support and confiding relationship.

Several limitations of our study should be acknowledged. First, we excluded women with limited ability to consent to the study, as well as women who had a severe mental illness. A consequence of these exclusion criteria is that women who may be most vulnerable to abuse could not participate in the study. It is possible that excluding these women decreased the prevalence estimates that were obtained. Second, because of our reliance upon self-report, it is possible that some women were too embarrassed to report IPV. Alternatives to self-report

may not be ethical or feasible, with perhaps one exception, namely, male partners; future research might assess men to obtain their perspectives. Such data will enrich our understanding of IPV. Third, our interest was primarily in understanding depressive and PTSD symptoms, rather than full-blown clinical disorders. Thus, we did not conduct structured diagnostic interviews, and our data do not allow us to speculate about psychopathology. Fourth, our study did not assess anxiety or other possible psychiatric consequences of IPV. Given that anxiety is perhaps the most common manifestations of stress in women, future research should include a formal assessment of anxiety. Fifth, we recruited women from one city in Southern India. Use of an urban sample from one region of India suggest caution when generalizing from our results to the country as a whole pending replication. Finally, because of our desire to recruit a large sample, and because of concerns about respondent burden, we did not conduct a detailed assessment of the possible antecedents of intimate partner violence. Such in-depth investigation is clearly necessary to guide the development of preventive interventions. Each of these limitations reveals opportunities for investigators to explore in future research on this critically important topic.

Acknowledgments

We thank the patients for their participation; the therapists and administrators at the National Institute of Mental Health and Neuro Sciences for their support; Drs. Willo Pequegnat, Juan Ramos, and Ellen Stover for their encouragement; and the Health Improvement Project team for their many fine contributions to this work.

Funding/Support: Supported by a grant R01-MH54929 from the National Institute of Mental Health.

References

- Ahmed-Ghosh H. Chattels of society: Domestic violence in India. *Violence against women* 2004;10:94–118.
- Amaro H, Fried LE, Cabral H, Zuckerman B. Violence during pregnancy and substance use. *Am J Public Health* 1990;80:575–579. [PubMed: 2327535]
- Baker CK, Norris FH, Diaz DM, Perilla JL, Murphy AD, Hill EG. Violence and PTSD in Mexico: gender and regional differences. *Soc Psychiatry Psychiatry Epidemiol* 2005;40:519–28.
- Beck AT, Ward CH, Mendelsohn M, Mock J, Erbaugh J. An inventory for measuring depression. *Archives of General Psychiatry* 1961;4:561–571. [PubMed: 13688369]
- Beck AT, Steer RA, Garbing MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review* 1988;8:77–100.
- Blanchard EB, Jones- Alexander J, Buckley TC, Forneris CA. Psychometric properties of the PTSD Checklist (PCL). *Behav Res Ther* 1996;34:669–673. [PubMed: 8870294]
- Bullock LF, McFarlane J. The birth-weight, battering connection. *Am J Nurs* 1989;89:1153–1155. [PubMed: 2774019]
- Chandra PS, Carey MP, Carey KB, Shalinianant Thomas T. Sexual Coercion and Abuse Among Women With a Severe Mental Illness in India: An Exploratory Investigation. *Comprehensive Psychiatry* 2003;44(3):205–212. [PubMed: 12764708]
- Chaturvedi SK, Michael A, Sarmukaddam S. Somatisers in psychiatric care. *Indian J Psychiatry* 1987;29:337–342.
- Chaturvedi SK, Michael A. Do Social and demographic factors influence nature and localization of somatic complaints. *Psychopathology* 1993;26:255–260. [PubMed: 8190844]
- Cunradi CP, Caetano R, Clark CL, Schafer J. Alcohol related problems and intimate partner violence among White, Black and Hispanic couples in the U.S. *Alcoholism, Clinical and Experimental research* 1999;23:1492–1501.
- Deiner E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction with Life Scale. *Journal of Personality Assessment* 1985;49:71–75. [PubMed: 16367493]
- Dunn LL, Oths KS. Prenatal predictors of intimate partner abuse. *JOGNN* 2004;33:54–63. [PubMed: 14971553]

- Fischbach RL, Herbert B. Domestic violence and mental health: Correlates and conundrums within and across cultures. *Soc Sci med* 1997;45:1161–1176. [PubMed: 9381230]
- Flanzer, JP. Alcohol and other drugs are key causal agents to violence. In: Gelles, RJ.; Loseke, DR., editors. *Current Controversies on Family Violence*. Thousand Oaks; Sage, CA: 1993. p. 171–181.
- Flitcraft AH. Violence, values and gender. *JAMA* 1992;267:3194–3195. [PubMed: 1593743]
- Gazmararian JA, Lazorick S, Spitz AM, Ballard TJ, Saltzman LE, Marks JS. Prevalence of violence against pregnant women. *JAMA* 1996;275:1915–1920. [PubMed: 8648873]
- Helton AS, McFarlene J, Anderson ET. Battered and pregnant: a prevalence study. *Am J Public Health* 1987;77:1337–1339. [PubMed: 3631370]
- Hillard PJ. Physical abuse in pregnancy. *Obstet Gynecol* 1985;66:185–190. [PubMed: 4022481]
- Hudson WW, McIntosh SR. The Assessment of Spouse of Abuse. Two Quantifiable Dimensions. *J Marriage Fam* 1981;4:873–888.
- Jenson R. Early female marriage in the developing world. *Gend Dev* 2003;11:9–19.
- Kessler RC, Molnar BE, Feurer ID, Appelbaum M. Patterns and mental health predictors of domestic violence in United States: results from National Comorbidity Survey. *Int J Law Psychiatry* 2001;24:487–508. [PubMed: 11521422]
- Khosla AH, Dua D, Devi L, Sud SS. Domestic violence in pregnancy in North Indian women. *Indian J Med Sci* 2005;59:195–199. [PubMed: 15985727]
- Koss MP, Gidycz CA. Sexual Experiences Survey: Reliability and validity. *J Consult Clin Psychol* 1985;53:422–423. [PubMed: 3874219]
- Koss MP, Oros CJ. Sexual experiences survey: A research instrument investigating sexual aggression and victimization. *J Consult Clin Psychol* 1982;50:455–457. [PubMed: 7096751]
- Kumar S, Jayaseelan L, Suresh S, Ahuja RC. Domestic violence and its mental health correlates in Indian women. *Br J Psychiatry* 2005;187:62–67. [PubMed: 15994573]
- Lang AJ, Kennedy CM, Stein MB. Anxiety sensitivity and PTSD among female victims of intimate partner violence. *Depress Anxiety* 2002;16:77–83. [PubMed: 12219339]
- Leonard KE, bromet EJ, Parkinson DK, Day NL, Ryan CM. Patterns of alcohol use and aggressive behaviour in men. *J Stud Alcohol* 1985;46:279–282. [PubMed: 4033127]
- Leung WC, Lam KJ, Leung TW, Ho PC. Domestic violence and postnatal depression in a Chinese community. *Int J Gynec Obstet* 2002;79:159–166.
- Leung WC, Leung TW, Lam YYJ, Ho PC. The prevalence of domestic violence against pregnant women in a Chinese community. *Int J Obstet Gynecol* 1999;66:23–30.
- Marcus, I. Reframing “domestic violence”: terrorism in the home. In: Fineman, MA.; Mykitiuk, R., editors. *The Public Nature of Private Violence: the Discovery of Domestic Abuse*. Routledge; NY: 1994.
- Marsella, AJ.; Sartorius, N.; Jablensky, A.; Fenton, FR. Cross-cultural studies of depressive disorders: an overview. In: Kleinman, A.; Good, B., editors. *Culture and Depression: Studies in the Anthropology and Cross-Cultural Psychiatry of Affect and Disorder*. University of California Press; Berkeley: 1985. p. 299–324.
- Martin SL, Tsui AO, Maitra K, Marinshaw R. Domestic violence in Northern India. *Am J Epidemiol* 1999;150:417–426. [PubMed: 10453818]
- McCauley J, Kern DE, Kolodner K, Dill L, Schroeder AF, DeChant HK, Ryden J, Bass EB, Derogatis LR. The ‘battering syndrome’: prevalence and clinical symptoms of domestic violence in primary care internal medicine practices. *Ann Intern Med* 1995;123:737–746. [PubMed: 7574191]
- McFarlene J, Malecha A, Watson K, Gist J, Batten E, Hall I, Smith S. Intimate partner sexual assault against women: Frequency, health consequences, and treatment outcomes. *Obstet gynecol* 2005;105:99–108. [PubMed: 15625149]
- McFarlene J, Parker B, Soeken K, Bullock L. Assessing for abuse during pregnancy: severity and frequency of injuries associates entry into prenatal care. *JAMA* 1992;267:3176–3178. [PubMed: 1593739]
- Mezey G, Bacchus L, Bewely S, White S. Domestic violence, lifetime trauma and psychological health of child bearing women. *BJOG* 2005;112:197–204. [PubMed: 15663584]

- Muhajarine N, D'Arcy C. Physical abuse during pregnancy: prevalence and risk factors. *CMAJ* 1999;160:1007–1011. [PubMed: 10207339]
- Muthal-Ratore A, Arora TR. Domestic violence against pregnant women interviewed at a hospital in New Delhi. *Int J Gynecol Obstet* 2002;76:83–85.
- Nixon RDV, Resick PA, Nishith P. An exploration of comorbid depression among female victims of intimate partner violence with post traumatic stress disorder. *J Affect Disord* 2004;82:315–320. [PubMed: 15488264]
- Panchanadeswaran S, Koverola C. The voices of battered women in India. *Violence Against Women* 2005;11:736–758. [PubMed: 16043569]
- Patel V, Rodrigues M, De Souza N. Gender, poverty, and postnatal depression: a study of mothers in Goa, India. *Am J Psychiatry* 2002;159:43–47. [PubMed: 11772688]
- Patel V, Araya R, de Lima M, Ludermir A, Todd C. Women, poverty and common mental disorders in four restructuring societies. *Soc Sci Med* 1999;49:1461–1471. [PubMed: 10515629]
- Peedicayil A, Sadowski LS, Jeyaseelan L, Shankar V, Jain D, Suresh S, Bangdiwala SI. Spousal physical violence against women during pregnancy. *BJOG* 2004;3:682–687. [PubMed: 15198758]
- Perilla JL. Domestic violence as a human rights issue: The case of immigrant Latinos. *Hisp J Behav Sci* 1999;21:107–133.
- Purwar MB, Jeyaseelan L, Varhadpande U, Motgahare V, Pimplakute S. Survey of physical abuse during pregnancy GMCH, Nagpur, India. *J Obstet Gynaecol Res* 1999;25:165–171. [PubMed: 10467788]
- Sammons MN. Battered and Pregnant. *MCN Am J Matern Child Nurs* 1981;6:246–250. [PubMed: 6787375]
- Sartorius N, Jablensky A, Gulbinat W, Ernberg G. WHO collaborative study: assessment of depressive disorders. *Psychol Med* 1980;10:743–749. [PubMed: 7208732]
- Smith MV, Rosenheck RA, Cavaleri MA, Howell HB, Poschman K, Yonkers KA. Screening for and detection of depression, panic disorder and PTSD in public-sector obstetric clinics. *Psych Serv* 2004;55:407–414.
- Stein MB, Walker JR, Hazen AL, Forde DR. Full and partial posttraumatic stress disorder: Findings from a community survey. *Am J Psychiatry* 1997;154:1114–1119. [PubMed: 9247398]
- Stewart DE, Cecutti A. Physical abuse in pregnancy. *CMAJ* 1993;149:1257–1263. [PubMed: 8221480]
- Sugarman DB, Aldarondo E, Boney-McCoy S. Risk marker analysis of husband-to-wife violence: A continuum of aggression. *J Appl Soc Psychol* 1996;26:313–337.
- Weathers FW, Keane TM, Davidson JRT. The Clinician-Administered PTSD Scale: A review of the first ten years of research. *Depress Anxiety* 2001;13:132–156. [PubMed: 11387733]
- Weathers FW, Ruscio AM, Keane TM. Psychometric properties of nine scoring rules for the Clinician-Administered Posttraumatic Stress Disorder Scale. *Psychological Assessment* 1999;11:124–133.

Table 1

Relationship Between Physical Abuse and Health Outcomes

Symptom	Physical Abuse		<i>t</i>	<i>p</i>
	Present (<i>n</i> = 28) Mean (SD)	Absent (<i>n</i> = 175) Mean (SD)		
Pain related symptoms	3.3 (3.2)	2.1 (3.2)	−1.8	<.05
Sensory somatic symptoms	2.1 (2.6)	1.1 (2.3)	−2.1	<.05
Non specific somatic symptoms	5.2 (2.9)	2.7 (2.9)	−4.2	<0.001
Biological function related symptoms	5.2 (3.3)	2.3 (2.7)	−5.1	<0.001
Gynaecological symptoms	0.4 (1.7)	0.2 (0.9)	−0.8	ns
Depressive symptoms	10.6 (7.5)	3.6 (4.2)	−4.8	<0.001
Post-traumatic stress disorder symptoms	19.7 (6.5)	17.0 (6.4)	2.13	<0.05
Life satisfaction	20.8 (6.5)	25.8 (4.1)	3.997	<.001

Table 2

Relationship Between Sexual Coercion and Health Outcomes

Symptom	Sexual Coercion		<i>t</i>	<i>p</i>
	Present (<i>N</i> = 18) Mean (SD)	Absent (<i>N</i> = 185) Mean (SD)		
Pain related symptoms	2.7 (2.9)	2.2 (2.3)	0.6	ns
Sensory somatic symptoms	2.3 (2.9)	1.2 (2.2)	2.0	<.05
Non specific somatic symptoms	5.1 (3.3)	2.9 (2.9)	3.0	<.01
Biological function related symptoms	4.8 (2.9)	2.5 (2.9)	3.2	<.01
Gynaecological symptoms	0.7 (2.1)	0.2 (0.9)	1.1	ns
Depressive symptoms	10.2 (7.6)	3.9 (4.8)	3.4	<.01
Post-traumatic stress disorder symptoms	19.9 (7.5)	17.1 (1.1)	1.55	ns
Life satisfaction	19.5 (6.8)	25.7 (4.2)	3.80	<.001

Table 3

Correlations Between Index of Spouse Abuse Scale Scores and Somatic and Depressive Symptoms

Symptoms	Physical abuse score (n=28)	Non-physical abuse score (n=30)
Pain related symptoms	-.21	.01
Sensory somatic symptoms	.09	.33*
Non specific somatic symptoms	-.18	.12
Biological function related symptoms	.17	.22
Gynaecological symptoms	.14	.16
Depressive symptoms	.02	.23

*
 $p < .05$.

Table 4

Correlation of Physical and Non-physical abuse scores with somatic symptom scores and depression for those persons who had undergone sexual coercion, physical abuse and non-physical abuse ($n = 16$)

Symptom score	Physical abuse score	Non-physical abuse score
Pain related symptoms	-.20	.04
Sensory somatic symptoms	.02	.30
Non specific somatic symptoms	-.23	.05
Biological function related symptoms	.41	.53*
Gynaecological symptoms	.08	.07
Depressive symptoms	.05	.30

*
 $p < .05$.