Domestic Violence and Symptoms of Gynecologic Morbidity Among Women in North India

CONTEXT: Although there is increasing recognition of the global scope of domestic violence and the potential reproductive health consequences of violence, little is known about the relationship between physical and sexual domestic violence and gynecologic morbidity in developing country settings.

METHODS: A sample of 3,642 couples from northern India was created by matching husbands and wives who responded to the men's and women's surveys of the 1995–1996 PERFORM System of Indicators Survey. The association between men's reports of physical and sexual violence they had perpetrated against their wives and wives' reports of gynecologic symptoms was analyzed in bivariate and multivariate analyses.

RESULTS: Overall, 37% of men said they had committed one or more acts of physical or sexual violence against their wives in the past 12 months, with 12% reporting physical violence only, 17% sexual violence only and 9% both physical and sexual violence. Thirty-four percent of women reported at least one symptom of gynecologic morbidity. Compared with women whose husbands reported no violence, those who had experienced both physical and sexual violence and those who had experienced sexual violence only had elevated odds of reporting gynecologic symptoms (odds ratios, 1.7 and 1.4, respectively).

CONCLUSIONS: Plausible mechanisms through which domestic violence may influence gynecologic morbidity include physical trauma, psychological stress or transmission of STIs. Reproductive health care that incorporates domestic violence support services is needed to meet the special needs of abused women.

International Family Planning Perspectives, 2006, 32(4):201–208

By Rob Stephenson, Michael A. Koenig and Saifuddin Ahmed

Rob Stephenson is assistant professor, Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA, USA. Michael A. Koenig is associate professor, and Saifuddin Ahmed is assistant professor, both in the Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA.

Over the past decade, there has been a growing recognition of the scope of domestic violence globally and the implications of such violence for the health and well-being of women, children and families. 1 The World Health Organization's (WHO) definition of domestic violence extends beyond physical acts of violence toward one's partner to include sexual coercion, physical threats, psychological abuse and controlling actions such as physical isolation or restricting access to health care or financial resources.2 Evidence from developing countries suggests that anywhere from 10% to 60% of married women of reproductive age report having ever experienced some form of domestic violence, with some of the highest recorded levels coming from South Asia. 4 Domestic violence affects a range of health outcomes, both for the women who experience it and for their children.⁵ For women, the consequences associated with domestic violence include physical injury, chronic pain and gastrointestinal symptoms,6 and adverse mental health outcomes. Negative reproductive health outcomes linked to violence include nonuse of contraception or condoms and unintended pregnancy.⁸ For children, evidence shows an association between domestic violence and low birth weight and prematurity, and elevated risks of perinatal and early childhood mortality. 10

Domestic violence may also be associated with gynecologic morbidity. Empirical evidence on this issue, howev-

er, comes largely from clinic-based studies done in developed country settings; there is a dearth of evidence from population-based studies in developing countries. In this article, we use population-based data to examine the relationship between physical and sexual domestic violence and women's reports of gynecologic morbidity in Uttar Pradesh, a populous state in northern India.

BACKGROUND

Domestic Violence and Gynecologic Morbidity

There is substantial evidence from developed countries of a relationship between domestic violence and gynecologic morbidity. ¹¹ Gynecologic problems are the most consistent physical health difference between women who have experienced domestic violence and those who have not, with the odds of experiencing a symptom of gynecologic morbidity generally three times as high among women who have experienced violence. ¹² Koss, Koss and Woodruff report a positive relationship between the severity of domestic violence and the risk of gynecologic morbidity, ¹³ and other researchers note that the combination of physical and sexual abuse puts women at greater risk of gynecologic morbidity than women who experience physical violence alone. ¹⁴

Only a few studies have examined the association between domestic violence and gynecologic morbidity in the general population. In a random sample of 118 women in Norway, the odds of self-reported gynecologic morbidity were three times as high among women who also reported a history of physical or sexual abuse. ¹⁵ Similarly, in case-control studies of intimate partner violence and gynecologic morbidity, women who had experienced physical abuse by their partners were more likely than those who had not to report pelvic pain ¹⁶ and pelvic inflammatory disease. ¹⁷

Little evidence is available from developing countries on the links between domestic violence and gynecologic morbidity. In a study of 15–19-year-old women in the Rakai surveillance system in Uganda, women who reported that their first sexual experience had been coerced were more likely than other women to report one or more symptoms of genital tract infection. ¹⁸ Other studies have found links between domestic violence and STIs, ¹⁹ including HIV and AIDS. ²⁰

The link between domestic violence and gynecologic morbidity is not well understood. The physical trauma caused by physical and sexual violence may result in gynecologic morbidity. Sexual violence may cause vaginal, anal or urethral trauma, leading to an elevated risk of infection.²¹ In addition, the relationship between domestic violence and gynecologic morbidity may be explained by partner relationship characteristics. For instance, men who perpetrate violence against their partners are more likely to engage in high-risk sexual behavior, such as having multiple sexual partners, thus increasing their risk of acquiring and transmitting STIs.²² Women in abusive relationships may also be less able to negotiate condom use or other safer sexual practices.²³ Domestic violence often interacts with the range of cultural, social and psychological factors that determine sexual negotiation, resulting in a limited ability of women in abusive relationships to control the conditions of sexual activity. This process is heightened in societies in which men and women have highly unequal decision-making power.24

Maman and colleagues argue that women who experience sexual abuse or violence early on may subsequently be more likely than other women to establish sexual patterns that place them at increased risk of contracting STIs. ²⁵ In other studies, women who reported domestic violence or coerced sex also reported more sexual partners in their lifetime, were less likely to report condom use and initiated sexual activity at a younger age, hence increasing their risk of experiencing gynecologic morbidity. ²⁶ However, Upchurch and Kusunoki found that even after controlling for sexual behavior, a significant association between a history of forced sex and the likelihood of experiencing an STI remained, suggesting that the relationship between violence and STI risk was not fully explained by sexual behavior. ²⁷

Gynecologic morbidity has been shown to be higher among women experiencing psychiatric problems; therefore, the relationship between domestic violence and gynecologic morbidity may partly be explained by the higher prevalence of psychiatric morbidity among women who experience violence.²⁸ Some gynecologic symptoms may

in fact be an expression of depression, given both the discordance between actual disease and gynecologic symptoms, and the high levels of depression among women with gynecologic symptoms.²⁹

The present study contributes to the existing literature by using data from a large, representative, population-based sample of women to examine the relationship between gynecologic morbidity and violence by men against their female partners. The analysis controls for a range of social and demographic factors that may be related to both domestic violence and gynecologic morbidity. We explore the separate and joint effects of physical and sexual violence on self-reported gynecologic morbidity.

Study Setting

Uttar Pradesh, the most populous state in India, ranks near the bottom of Indian states on many demographic, health and development indicators. ³⁰ Fertility and mortality rates are higher in Uttar Pradesh than in most other Indian states, with an estimated 1999 total fertility rate of 4.0 (compared with 2.9 for India as a whole) and an infant mortality rate of 87 deaths per 1,000 live births (compared with 68 per 1,000 live births for all of India). ³¹ Contraceptive prevalence remains very low in Uttar Pradesh: Only 28% of married women report current use of a method, compared with 48% for India as a whole. In addition, 25% of married women are classified as having an unmet need for family planning, compared with 15% for all of India. ³²

Uttar Pradesh ranks very low among Indian states on almost all indicators of women's status. In 1998-1999, the median age at first marriage was 15.0 years, and 57% of females age six or older were illiterate. Fewer than half of adult women in Uttar Pradesh are regularly exposed to any form of mass media.³³ Uttar Pradesh also ranks extremely low on female decision-making, freedom of movement and control over money.³⁴ Under these conditions, it is perhaps not surprising that physical and sexual violence against women is common. Previous studies have reported high levels of domestic violence in northern India, with the proportion of adult women reporting lifetime experience of violence exceeding 40%.35 Research in India also finds that a large proportion of male and female respondents view beating or punishment of wives as justifiable under a range of conditions.³⁶ The prevalence of either clinically diagnosed or self-reported symptoms of gynecologic morbidity is high among Indian women,³⁷ ranging from 46% to as high as 92%, depending on the population studied and the morbidity criteria used.

METHODOLOGY

Data

The data for this analysis come from the 1995–1996 PER-FORM System of Indicators Survey.³⁸ The survey was designed to provide representative estimates of the levels and patterns of contraceptive practice and service delivery for the 28 districts, 14 divisions and five regions of Uttar Pradesh. As a component of this survey, interviews were

completed with 45,262 women aged 15-45 residing in 40,633 households; details of the women's survey are provided elsewhere.³⁹ The Male Reproductive Health Survey (MRHS) was a companion study undertaken to obtain detailed information on husbands' knowledge and behavior related to their wives' and their own reproductive health. 40 The sampling frame for the MRHS consisted of all husbands in households identified in the first stage-sample in five of the original 28 sampled districts; these districts were drawn from each of the five regions of Uttar Pradesh. Eligibility criteria for men included being currently married, being 15-59 years of age and currently residing with their wife. In all, 8,296 eligible husbands were identified through the household listing. Of these, 6,727 husbands were successfully interviewed between November 1995 and April 1996; exclusion of 121 married men who were not yet physically residing with their wives resulted in a final sample size of 6,606 husbands. The questionnaire was administered by trained male interviewers, either in a private area within the home or outside the home, and took roughly 20 minutes to complete.

The survey of husbands covered a wide range of issues pertaining to household social and demographic characteristics; contraceptive knowledge, use and intentions; health expenditures; and pre- and extramarital sexual contacts. The survey also included detailed questions on the husbands' perpetration of physical and sexual violence against their partners. Husbands were asked whether they had ever hit, slapped, kicked or tried to hurt their wife; the timing of the initial and the most recent incident; and the total number of times such violence had occurred. Husbands were also asked whether they had ever had sex with their wife when she was unwilling. If the answer was yes, respondents were asked whether they had ever physically forced their wife to have sexual relations, and when the most recent event had occurred. In northern India, an environment in which violence is normative and tolerated, 41 violence data collected from the male perpetrator is unlikely to be underreported to a great degree.

In the women's survey, questions on symptoms of gynecologic morbidity were asked only of women who had given birth in the three years prior to the survey. Women were asked if, in the preceding three months, they had experienced abnormal vaginal discharge; those who reported abnormal discharge were asked if they had experienced itching or irritation, unusual odor, severe lower abdominal pain or fever along with the discharge. Women were then asked if they had experienced pain or burning while urinating, pain in the abdomen or vagina during intercourse or blood after sex when not menstruating.

Respondents in the women's survey could be matched with 5,553 interviewed husbands (83%), with no significant differences in the social and demographic characteristics between matched and unmatched husbands and wives. ⁴² Exclusion of respondents who had had no live birth during the three years prior to the survey (N=1,770) or for whom there were missing data on either the gynecologic

TABLE 1. Selected characteristics of wives who responded to the women's questionnaire of the PERFORM System of Indicators Survey, and of their husbands, who responded to the corresponding men's questionnaire, Uttar Pradesh, India, 1995–1996

| Characteristic | Mean or % |
|---------------------------|--------------|
| MEANS | |
| Age | |
| Wives | 28.5 (15-44) |
| Husbands | 33.8 (15–59) |
| Age at marriage | |
| Wives | 15.5 (6-42) |
| Husbands | 18.5 (10–44) |
| No. of children ever born | 3.2 (1–20) |
| Household asset score | 1.7 (0–6) |
| PERCENTAGES | |
| Attended school | |
| Wives | 24.2 |
| Husbands | 66.2 |

Note: In all, 3,642 married couples who had had a birth in the past three years were identified from among the 6,627 married men interviewed in the male survey and the 45,262 married women interviewed in the women's survey.

symptoms or domestic violence questions (N=141) resulted in a final sample of 3,642 married women and their husbands. Respondents with missing data on domestic violence or gynecologic morbidity were not significantly different from other respondents with respect to any key social and demographic factors (results not shown). Table 1 shows key social and demographic indicators for the analysis sample; the sample is characterized by lower age at marriage for women than men, moderate fertility, residence in households that own few assets and lower levels of female school attendance (compared with male school attendance).

Analysis

A logistic regression model was fitted to a binary outcome, coded as one if the woman reported any of the eight symptoms of gynecologic morbidity, and zero if no morbidity was reported. The model includes a categorical variable measuring whether the husband reported physical or sexual violence toward his wife in the 12 months prior to the survey. The variable has four categories: no violence, physical violence only,

 ${\it TABLE 2. Percentage of wives reporting specific gynecologic symptoms occurring during the past three months}$

| Symptom | % (N=3,642) |
|---|----------------|
| All wives | |
| At least one symptom | 34.3 |
| Bleeding (nonmenstrual) after intercourse | 22.2 |
| Abnormal vaginal discharge | 14.7 |
| Urinary symptoms† | 13.3 |
| Pain during intercourse | 10.2 |
| Wives with vaginal discharge | |
| Vaginal itching/irritation | 42.7 |
| Bad vaginal odor | 31.7 |
| Severe abdominal pain | 54.1 |
| Fever | 35.1 |
| | |

†Pain or burning during urination, or frequent or difficult urination.

| TABLE 3. Percentage distribution of wives, according to |
|---|
| selected characteristics |

| Characteristic | % |
|--|-------|
| Experience of domestic violence | |
| No violence | 62.9 |
| Physical violence only | 11.5 |
| Sexual violence only | 16.6 |
| Physical and sexual violence | 9.1 |
| Parity | |
| 1–2 | 31.6 |
| 3–4 | 36.3 |
| ≥5 | 32.3 |
| Prior obstetric complications | |
| No | 84.2 |
| Yes | 15.8 |
| les | 13.6 |
| Wife's education | 60.6 |
| None | 68.6 |
| 1–6 | 10.3 |
| ≥7 | 21.1 |
| Husband's education | |
| None | 29.3 |
| 1–6 | 18.6 |
| ≥7 | 52.1 |
| Husband reported extramarital sex | |
| No | 96.1 |
| Yes | 3.9 |
| Current family planning use | |
| None/traditional method | 61.6 |
| Female/male sterilization | 33.3 |
| Other modern method (pill/IUD/injectable) | 5.1 |
| Marital duration | |
| ≤5 years | 11.5 |
| 6–10 | 16.9 |
| 11–19 | 18.8 |
| ≥20 | 52.8 |
| Household asset score | |
| 0 | 13.4 |
| 1–2 | 36.7 |
| 3–4 | 28.3 |
| 5–7 | 21.6 |
| Place of residence | |
| Urban | 27.5 |
| Rural | 72.5 |
| Tida i | 72.3 |
| Total | 100.0 |
| Note: Percentages may not add to 100 because of roun | dina |

Note: Percentages may not add to 100 because of rounding.

sexual violence only, and both physical and sexual violence. The model controls for obstetric complications during a woman's last pregnancy,* current use of contraceptives, woman's education, husband's education, parity, spousal age difference, marital duration, husband's extramarital sexual relationships, residence and a household asset index † as a proxy for the socioeconomic status of the household. To examine the mediating effect of violence on other determinants of gynecologic morbidity, the analysis tested interac-

tions between the experience of domestic violence and other independent variables (spousal age difference, husband's extramarital sex, current family planning use, marital duration and respondent's education level).

RESULTS

Overall, 34% of the wives reported the occurrence of one or more symptoms during the preceding three months (Table 2, page 203). The most commonly reported problem was blood after sexual relations during times other than menstruation (22%), followed by abnormal vaginal discharge (15%), pain or burning during urination (13%) and pain during intercourse (10%). Among women who reported abnormal vaginal discharge, substantial proportions reported such accompanying symptoms as severe lower abdominal pain (54%), vaginal itching or irritation (43%), fever (35%), or bad odor (32%).

A substantial proportion of husbands (37%) reported having committed one or more episodes of physical or sexual violence against their wives during the preceding year (Table 3), including 12% who reported only physical violence, 17% who reported only sexual violence, and 9% who reported both physical and sexual violence. The mean spousal age difference was 5.4 years (range 0–40; not shown). More than two-thirds of wives had had no education; about half of husbands had had seven or more years. Four percent of husbands reported ever having had extramarital sex, and more than 50% of the sample had been married for 20 or more years.

Table 4 shows the results of a logistic regression analysis assessing the association of selected characteristics with gynecologic morbidity. Several of the variables included as controls show associations with gynecologic symptoms. Most notably, women whose husbands reported one or more extramarital relationships were significantly more likely to report such symptoms (odds ratio, 3.5) than were women whose husbands reported none.

Compared with women who had had 1–2 live births, those who had had five or more were significantly more likely to report symptoms (1.5). Women who had experienced one or more obstetric complications in their last pregnancy were significantly more likely to report gynecologic morbidity than those who had not (2.2). For each additional year that the husband was older than his wife, the wife's odds of reporting symptoms increased by 7%.

Women who reported that they had been sterilized or were using an IUD were significantly more likely to report gynecologic morbidity (1.5) than were women who used no method or who used a traditional method of family planning. Relative to women who had been married for five or fewer years, those who had been married for 11 or more years had significantly lower odds of reporting gynecologic morbidity (odds ratios, 0.1–0.3). Although women's education was not related to the risk of reported gynecologic morbidity, women married to men with at least seven years of education and those who resided in wealthier households (those owning at least five of seven items in a list of seven

^{*}Women were asked if they had experienced prolonged labor, fever, convulsions, cesarean section, use of forceps, delayed placenta or excessive bleeding in their last pregnancy.

[†]The seven components of the household asset index included composition of the dwelling roof and floor; presence of electricity and toilet facilities; and ownership of radio or television, motorcycle or car, fan, and clock (range 0–7).

TABLE 4. Adjusted odds ratios (and 95% confidence intervals) from logistic regression analysis examining associations between self-reported gynecologic morbidity and selected characteristics of wives

| Characteristic | Odds ratio |
|--|---|
| Experience of domestic violence No violence (ref) Physical violence only Sexual violence only Physical and sexual violence | 1.0 1.05 (0.71–1.49) 1.42 (1.04–1.75) 1.72 (1.05–2.58) |
| Parity 1–2 (ref) 3–4 ≥5 | 1.0 0.98 (0.70–1.37) 1.46 (1.02–2.19) |
| Prior obstetric complications No (ref) Yes | 1.0 2.19 (1.90–2.52) |
| Spousal age difference | 1.07 (1.03–1.10) |
| Wife's education None (ref) 1-6 ≥7 | 1.0 1.14 (0.75–1.74) 1.15 (0.68–1.89) |
| Husband's education None (ref) 1–6 ≥7 | 1.0 0.85 (0.59–1.22) 0.54 (0.37–0.80) |
| Husband reported extramarital sex No (ref) Yes | 1.0 3.49 (2.14–4.67) |
| Current family planning use None/traditional method (ref) Female sterilization/IUD Other modern method | 1.0 1.52 (1.12–1.76) 1.02 (0.74–1.40) |
| Marital duration ≤5 years (ref) 6-10 11-19 ≥20 | 1.0 0.69 (0.46–1.97) 0.31 (0.25–0.42) 0.12 (0.07–0.23) |
| Household asset score 0 (ref) 1-2 3-4 5-7 | 1.0 1.07 (0.83–1.37) 0.95 (0.72–1.25) 0.72 (0.51–0.98) |
| Place of residence Urban (ref) Rural | 1.0 0.69 (0.53–0.99) |

Note: ref=reference group.

household assets) were both significantly less likely to report morbidity than women whose husbands had no education and those who resided in poorer households (0.5 and 0.7, respectively). Rural women were significantly less likely to report gynecologic symptoms than were women in urban areas (0.7).

Compared with women whose husbands reported no violence, women whose husbands reported sexual violence only and those whose husbands reported both physical and sexual violence had significantly higher odds of reporting symptoms of gynecologic morbidity (odds ratios, 1.4 and 1.7, respectively). None of the variables that tested interactions between domestic violence and the other de-

terminants of gynecologic morbidity were significant (results not shown).

DISCUSSION

The results of our study largely corroborate findings of previous studies from developing countries concerning risk factors for self-reported or clinically diagnosed gynecologic morbidity. For example, our finding of increased risk of gynecologic morbidity among women with prior obstetric complications has been reported in at least one other study. 43 Similarly, a number of studies have reported strong associations between female sterilization or IUD use and gynecologic problems. 44 Both of these associations highlight the potential contribution of iatrogenic factors to gynecologic morbidity in developing countries.⁴⁵ The finding of a marked association between husband's reports of extramarital sex and women's reported gynecologic symptoms is also intuitively logical and documented in other studies. 46 Women in rural areas were less likely to report gynecologic symptoms-a result that likely reflects a combination of lower recognition of and comfort in reporting gynecologic symptoms among more conservative rural women rather than a protective effect of rural residence.

The influence of domestic violence on gynecologic morbidity persisted even after we controlled for a number of demographic, social, economic and partnership factors. This study highlights the central importance of sexual coercion and violence as a risk factor for gynecologic symptoms. This association may reflect, in part, the important role of STIs, with a husband transmitting infection to his wife through coercive sexual relations. Second, forced sex may lead to vaginal trauma, through direct physical force or a lack of lubrication, that increases the risk of STI transmission.⁴⁷ The finding that the highest risk of gynecologic symptoms was associated with a combination of physical and sexual violence is consistent with this interpretation. Finally, perceived gynecologic symptoms may represent an expression of depression or mental distress among abused women. 48 The specific mechanisms through which sexual violence leads to elevated risks of gynecologic morbidity symptoms are beyond the scope of the current study, but merit attention in future studies.

Our study has several limitations. Foremost among these is our reliance on women's self-reports of gynecologic morbidity as our outcome variable. The results of previous studies have demonstrated low levels of correspondence between women's own reports of gynecologic symptoms and gynecologic morbidity diagnosed through laboratory testing or clinical examination. We note that the very specific wording of questions in our survey on gynecologic morbidity may have led to lower overall levels of reporting of gynecologic symptoms such as vaginal discharge than in most previous studies in India. We also note that data on specific gynecologic conditions, pain during intercourse and urinary tract infections are generally obtained through client histories that are based on women's reports.

A second potential limitation of this study is the possi-

ble underreporting of several important study variables. Of foremost concern, our study relies upon the reports of the perpetrators for information on domestic violence. The levels of spousal abuse reported by men in our study are comparable to or higher than the levels found in many other Indian studies that are based on wives' reports. 50 Previous studies suggest that strong normative support for violence against females exists in this setting,⁵¹ possibly reducing the stigma attached to domestic violence and therefore the social desirability bias that would lead to underreporting.⁵² In other studies, men and women have generally reported comparable levels of physical violence.⁵³ These findings collectively suggest that bias by husbands in their reports of domestic violence may not be substantial. Reporting concerns also exist about husbands' reports of extramarital relations. Studies from the same region have found much higher reported levels of extramarital sexual activity;⁵⁴ the very low reported prevalence (4%) we found may reflect underreporting by husbands.

A final limitation of our study is that questions on gynecologic morbidity were asked only of study women who had had a birth in the three years prior to the survey. Women who recently had a birth may be more prone to gynecologic morbidity because of complications of pregnancy or labor, although our analysis controlled for the presence of obstetric complications in the respondent's last pregnancy. Alternatively, some women who had not had a recent birth may have been experiencing infertility caused by gynecologic disorders. Although we do not believe this to be a significant source of bias, caution must nevertheless be exercised in generalizing our results to all women of reproductive age.

These limitations notwithstanding, the present study contributes to a better understanding of the impact of domestic violence on gynecologic morbidity, and presents some of the strongest evidence to date from a developing country setting on this relationship. A unique feature of our analysis has been the consideration of sexual as well as physical intimate partner violence, with sexual violence emerging as a particularly important risk factor for women's reports of gynecologic symptoms. A second strength of our study is that data on domestic violence were collected from husbands and information on gynecologic symptoms was collected from wives, greatly reducing the likelihood that the observed associations could be due to reporting bias—i.e., that women with gynecologic symptoms would be more likely to recall or report prior physical or sexual violence.

Although further research in other developing country settings is needed, our study adds to the mounting body of evidence on the deleterious effects of domestic violence for women's health. Our results demonstrate the need for reproductive health care providers to recognize and be sensitive to the needs of women who are experiencing domestic violence, and to incorporate domestic violence support services into existing sexual and reproductive health services. Intersectoral collaboration is necessary to connect women experiencing violence to health services, and conversely, to link women who present at health services with symp-

toms that may be the result of violence with support services. Watts and Mayhew argue that even in settings with limited resources, pragmatic responses to domestic violence are possible. Steps need to be taken to ensure that women are able to report their experiences of violence in a non-judgmental environment, and more education is required so that health care professionals can meet the unique needs of women experiencing violence and refer them to the appropriate intervention services.

REFERENCES

- 1. Campbell JC, Health consequences of intimate partner violence, Lancet, 2002, 359(9314):1331–1336; Campbell JC, Garcia-Moreno C and Sharps PW, Abuse during pregnancy in industrialized and developing countries, Violence Against Women, 2004, 10(7):770–789; Heise LL, Ellsberg M and Gottemoeller M, Ending violence against women, Population Reports, 1999, Series L, No. 11; Jewkes R et al., Sexual violence, in: Krug EG et al., eds., World Report on Violence and Health, Geneva: World Health Organization (WHO), 2002, pp. 147–174; Heise LL, Pitanguy J and Germain A, Violence against women: the hidden health burden, World Bank Discussion Paper, Washington, DC, USA: World Bank, 1994, No. 255; and Heise LL et al., Violence against women: a neglected public health issue in less developed countries, Social Science & Medicine, 1994, 39(9):1165–1179.
- **2.** Krug EG et al., 2002, op. cit. (see reference 1); and WHO, *Violence Against Women*, Geneva: WHO, 1997.
- **3.** Heise LL, Ellsberg M and Gottemoeller M, 1999, op. cit. (see reference 1); Krug EG et al., 2002, op. cit. (see reference 1); and Watts C and Zimmerman C, Violence against women: global scope and magnitude, *Lancet*, 2002, 359(9313):1232–1237.
- 4. Jejeebhoy SJ and Cook RJ, State accountability for wife-beating: the Indian challenge, *Lancet*, 1997, 349(Suppl. 1):10–12; Martin SL et al., Domestic violence in northern India, *American Journal of Epidemiology*, 1999, 150(4):417–426; Koenig MA et al., Individual and community-level determinants of domestic violence in rural Bangladesh, *Demography*, 2003, 40(2):269–288; EVALUATION Project, *Uttar Pradesh: Male Reproductive Health Survey*, 1995–1996, Chapel Hill, NC: Carolina Population Center, 1997; and Kishor S and Johnson K, *Profiling Domestic Violence: A Multi-Country Study*, Calverton, MD, USA: ORC Macro, 2004.
- **5.** Heise LL, Pitanguy J and Germain A, 1994, op. cit. (see reference 1); Krug EG et al., 2002, op. cit. (see reference 1); Moore M, Reproductive health and intimate partner violence, *Family Planning Perspectives*, 1999, 31(6):302–306; and Campbell JC et al., Intimate partner violence and physical health consequences in a sample of female HMO enrollees, *Archives of Internal Medicine*, 2005, 162(10):1157–1163.
- 6. Campbell JC, 2002, op. cit. (see reference 1).
- 7. Kumar S et al., Domestic violence and its mental health correlates in Indian women, *British Journal of Psychiatry*, 2005, 187(1):62–67; and Patel V et al., Why do women complain of vaginal discharge? a population survey of infectious and psychosocial risk factors in a South Asian community, *International Journal of Epidemiology*, 2005 34(4):853–862.
- 8. Kalichman SC et al., Sexual coercion, domestic violence, and negotiating condom use among low-income African-American women, *Journal of Women's Health*, 1998, 7(3):371–378; Gazmararian JA et al., The relationship between pregnancy intendedness and physical violence in mothers of newborns, *Obstetrics & Gynecology*, 1995, 85(6):1031–1038; Pallito CC and O'Campo P, The relationship between intimate partner violence and unintended pregnancy: analysis of a national sample from Colombia, *International Family Planning Perspectives*, 2004, 30(4):165–173; and Pallito CC and O'Campo P, Community level effects of gender inequality on intimate partner violence and unintended pregnancy in Colombia: testing the feminist perspective, *Social Science & Medicine*, 2005, 60(10):2205–2216.
- 9. Cokkinides VE et al., Physical violence during pregnancy: maternal complications and birth outcomes, *Obstetrics & Gynecology*, 1999, 93(5):661–666; and Murphy CC et al., Abuse: a risk factor for low birth weight? a systematic review and meta-analysis, *Canadian Medical*

Association Journal, 2001, 164(11):1567-1572.

- 10. Jejeebhoy SJ, Associations between wife-beating and fetal and infant death: impressions from a survey in rural India, *Studies in Family Planning*, 1998, 29(3):300–308; and Ahmed S, Koenig MA and Stephenson R, Effects of domestic violence on perinatal and early childhood mortality: evidence from north India, *American Journal of Public Health*, 2006, 96(8):1423–1428.
- 11. Schei B and Bakketeig LS, Gynaecological impact of sexual and physical abuse by spouse. a study of a random sample of Norwegian women, *British Journal of Obstetrics and Gynaecology*, 1989, 96(12):1379–1383; Schei B, Psycho-social factors in pelvic pain: a controlled study of women living in physically abusive relationships, *Acta Obstetricia et Gynecologica Scandinavica*, 1990, 69(1):67–71; Schei B, Physically abusive spouse–a risk factor of pelvic inflammatory disease? *Scandinavian Journal of Primary Health Care*, 1991, 9(1):41–45; Koss MP, Koss PG and Woodruff WJ, Deleterious effects of criminal victimization on women's health and medical utilization, *Archives of Internal Medicine*, 1991, 151(2): 342–347; and Collett BJ et al., A comparative study of women with chronic pelvic pain, chronic nonpelvic pain and those with no history of pain attending general practitioners, *British Journal of Obstetrics and Gynaecology*, 1998, 105(1):87–92.
- 12. Campbell JC, 2002, op. cit. (see reference 1).
- 13. Koss MP, Koss PG and Woodruff WJ, 1991, op. cit. (see reference 11).
- **14.** Campbell JC, 2002, op. cit. (see reference 1); and Collett BJ et al., 1998, op. cit. (see reference 11).
- 15. Schei B and Bakketeig LS, 1989, op. cit. (see reference 11).
- 16. Schei B, 1990, op. cit. (see reference 11).
- 17. Schei B, 1991, op. cit. (see reference 11).
- **18**. Koenig MA et al., Coerced first intercourse and reproductive health among adolescent women in Rakai, Uganda, *International Family Planning Perspectives*, 2004, 30(4):156–163.
- 19. Martin SL et al., Sexual behaviors and reproductive health outcomes: associations with wife abuse in India, *Journal of the American Medical Association*, 1999, 282(20):1967–1972; and Champion JD et al., Minority women with sexually transmitted diseases: sexual abuse and risk for pelvic inflammatory disease, *Research in Nursing & Health*, 2001, 24(1): 38–43
- 20. Maman S et al., HIV-positive women report more lifetime partner violence: findings from a voluntary counseling and testing clinic in Dar es Salaam, Tanzania, *American Journal of Public Health*, 2002, 92(8): 1331–1337; Dunkle KL et al., Gender-based violence, relationship power, and risk of HIV infection in women attending antenatal clinics in South Africa, *Lancet*, 2004, 363(9419):1415–1421; and Koenig MA et al., Coercive sex and HIV risk among young women in Rakai, Uganda, unpublished paper, Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA, 2005.
- **21**. Campbell JC, 2002, op. cit. (see reference 1); and Moore M, 1999, op. cit. (see reference 5).
- **22**. Moore M, 1999, op. cit. (see reference 5); and Garcia-Moreno C and Watts C, Violence against women: its importance for HIV/AIDS prevention, *AIDS*, 2000, 14(Suppl. 3):S253–S265.
- **23**. Moore M, 1999, op. cit. (see reference 5); Martin SL et al., 1999, op. cit. (see reference 19); Maman S et al., The intersections of HIV and violence: directions for future research and interventions, *Social Science & Medicine*, 2000, 50(4):459–478; and Campbell JC, 2002, op. cit. (see reference 1).
- **24.** Watts C, Ndlovu M and Keogh E, *The Magnitude and Health Consequences of Violence Against Women in Zimbabwe*, Musasa Project, Harare, Zimbabwe, 1997; and Wood K and Jewkes R, Violence, rape, and sexual coercion: everyday love in a South African township, *Gender and Development*, 1997, 5(2):41–46.
- 25. Maman S et al., 2000, op. cit. (see reference 23).
- **26.** Koenig MA et al., 2004, op. cit. (see reference 18); and Upchurch DM and Kusunoki Y, Associations between forced sex, sexual and protective practices, and sexually transmitted diseases among a national

- sample of adolescent girls, Women's Health Issues, 2004, 14(3):75-84.
- 27. Upchurch DM and Kusunoki Y, 2004, op. cit. (see reference 26).
- 28. Schei B and Bakketeig LS, 1989, op. cit. (see reference 11); and Byrne P, Psychiatric morbidity in a gynaecological clinic: an epidemiological survey, *British Journal of Psychiatry*, 1984, 144(1):28–34.
- **29**. Patel V and Oomman N, Mental health matters, too: gynaecological symptoms and depression in South Asia, *Reproductive Health Matters*, 1999, 7(14):30–38.
- 30. International Institute for Population Sciences (IIPS) and ORC Macro, *National Family Health Survey* (NFHS-2), 1998-99, Mumbai, India: IIPS, 2000
- **31.** Ibid.
- **32**. Ibid.
- **33.** Ibid.
- **34**. Ibid.; and Dyson T and Moore M, On kinship structure, female autonomy, and demographic behavior in India, *Population and Development Review*, 1983, 9(1):35–60.
- **35.** Jejeebhoy SJ and Cook RJ, 1997, op. cit. (see reference 4); Martin SL et al., 1999, op. cit. (see reference 19); Jejeebhoy SJ, 1998, op. cit. (see reference 7); IIPS and ORC Macro, 2000, op. cit. (see reference 30); and Koenig MA et al., Individual and contextual determinants of domestic violence in North India, *American Journal of Public Health*, 2006, 96(1):132–138.
- **36.** Kishor S and Johnson K, 2004, op. cit. (see reference 4); Jejeebhoy SJ, 1998, op. cit. (see reference 7); and Koenig MA et al., 2006, op. cit. (see reference 35).
- 37. Koenig MA et al., Investigating gynaecological morbidity in India: not just another KAP survey, *Reproductive Health Matters*, 1998, 6(11): 84–97; Bang RA et al., High prevalence of gynaecological diseases in rural Indian women, *Lancet*, 1989, 1(8629):85–88; Bhatia JC et al., Levels and determinants of gynecologic morbidity in a district of south India, *Studies in Family Planning*, 1997, 28(2):95–103; and Bhatia JC and Cleland J, Self-reported symptoms of gynecologic morbidity and their treatment in south India, *Studies in Family Planning*, 1995, 26(4)203–216.
- **38**. MEASURE Evaluation, *PERFORM System of Indicators Survey, Uttar Pradesh 1995–96*, Chapel Hill, NC, USA: Carolina Population Center, 1995.
- **39.** Ibid.
- **40.** EVALUATION Project, 1997, op. cit. (see reference 4); and Singh KK, Bloom SS and Tsui AO, Husbands' reproductive health knowledge, attitudes, and behaviors in Uttar Pradesh, India, *Studies in Family Planning*, 1998, 29(4):388–399.
- 41. Koenig MA et al., 2006, op. cit. (see reference 35).
- **42.** Koenig MA, unpublished analyses of data from the PERFORM System of Indicators Survey, Johns Hopkins University, Baltimore, MD, USA, 2001.
- 43. Bhatia JC and Cleland J, 1995, op. cit. (see reference 37).
- 44. Ibid.; Wasserheit JN et al., Reproductive tract infections in a family planning population in rural Bangladesh, *Studies in Family Planning*, 1989, 20(2):69–80; and Hawkes S et al., Reproductive tract infections: prevalence and risk factors in rural Bangladesh, *Bulletin of the World Health Organization*, 2002, 80(3):180–188.
- **45.** van de Wijgert J and Elias C, Defining reproductive tract infections and other gynaecological morbidity, in: Jejeebhoy S, Koenig MA and Elias C, eds., *Reproductive Tract Infections and Other Gynaecological Disorders: A Multidisciplinary Research Approach*, Cambridge, UK: Cambridge University Press, 2003, pp. 11–29.
- **46**. Brabin L et al., Reproductive tract infections, gynecological morbidity and HIV seroprevalence among women in Mumbai, India, *Bulletin of the World Health Organization*, 1998, 76(3):277–287.
- 47. Campbell JC, 2002, op. cit. (see reference 1).
- **48.** Schei B and Bakketeig LS, 1989, op. cit. (see reference 11); and Patel V and Oomman N, 1999, op. cit. (see reference 29).
- 49. Bulut A et al., In search of truth: comparing alternative sources of

information on reproductive tract infections, *Reproductive Health Matters*, 1995, No. 6, pp. 31–39; and Marshall TV et al., Interpreting results from different sources of data, in: Jejeebhoy S, Koenig MA and Elias C, eds., 2003, op. cit. (see reference 45), pp. 391–418.

- 50. Jejeebhoy SJ and Cook RJ, 1997, op. cit. (see reference 4); and IIPS and Johns Hopkins University, Final Report of the 2003 NFHS-2 Four-State Follow-up Survey, Mumbai, India: IIPS, 2005.
- **51.** Jejeebhoy SJ, 1998, op. cit. (see reference 7); Koenig MA et al., 2006, op. cit. (see reference 35); and IIPS and Johns Hopkins University, 2005, op. cit. (see reference 50).
- **52.** Gregson S et al., Methods to reduce social desirability bias in sex surveys in low-development settings: experience in Zimbabwe, *Sexually Transmitted Diseases*, 2002, 29(10):568–575.
- **53.** Mahajan A, Instigators of wife battering, in: Sood S, ed., *Violence Against Women*, Jaipur, India: Arihant Publishers, 1990, pp. 1–10; and Hoffman KL, Demo DH and Edwards JN, Physical wife abuse in a non-Western society: an integrated theoretical approach, *Journal of Marriage and the Family*, 1994, 56(1):131–146.
- 54. Hawkes S et al., 2002, op. cit. (see reference 44).
- 55. Watts C and Mayhew S, Reproductive health services and intimate partner violence: shaping a pragmatic response in Sub-Saharan Africa, International Family Planning Perspectives, 2004, 30(4):207–213.

RESUMEN

Contexto: Si bien hay un creciente reconocimiento del alcance del problema mundial que constituye la violencia doméstica y las consecuencias potenciales en la salud reproductiva, hay poca información en los países en desarrollo sobre la relación entre la violencia doméstica física y sexual y la morbilidad ginecológica.

Método: Se preparó una muestra de 3.642 parejas de la región norte de la India al parear las respuestas de los maridos y mujeres que respondieron a las encuestas de hombres y mujeres de la Encuesta de Indicadores del Sistema PERFORM de 1995–1996. Se realizaron análisis bivariados y multivariados para evaluar la relación entre los datos proporcionados por los hombres sobre violencia física y sexual perpetrada contra sus cónyuges y las declaraciones de las esposas sobre sus síntomas ginecológicos.

Resultados: En general, el 37% de los hombres indicaron que durante los últimos 12 meses habían cometido uno o más actos de violencia física y sexual contra su pareja, el 12% indicó que había cometido violencia física solamente, el 17% sólo violencia sexual, y el 9% ambos tipos de violencia, física y sexual. El 24% de las mujeres indicaron que habían tenido por lo menos un síntoma de morbilidad ginecológica. Comparadas con las mujeres cuyos cónyuges no habían cometido actos de violencia, aquellas que sí habían sufrido tanto violencia física como sexual y aquellas que habían sido víctimas de sólo la violencia sexual presentaban mayores probabilidades de indicar las síntomas ginecológicos (razones de momios de 1,7 y 1,4,

respectivamente).

Conclusión: Los resultados sugieren que la violencia está vinculada con la morbilidad ginecológica a través del trauma físico, el estrés psicológico o la transmisión de las ITS. Para atender las necesidades especiales de las mujeres que sufren abuso, se requiere de una atención en materia de salud reproductiva que incorpore servicios de apoyo para casos de violencia doméstica.

RÉSUMÉ

Contexte: Malgré la reconnaissance grandissante de la portée mondiale de la violence au foyer et de ses conséquences potentielles sur la santé reproductive, le rapport entre la violence domestique physique et sexuelle et la morbidité gynécologique dans le contexte des pays en développement est peu documenté.

Méthodes: Un échantillon de 3.642 couples du nord de l'Inde a été constitué par établissement des correspondances entre les conjoints qui avaient répondu aux versions masculine et féminine de l'enquête PERFORM System of Indicators Survey en 1995–1996. L'association entre les déclarations masculines de violence physique et sexuelle perpétrée à l'encontre des épouses et celles féminines de symptômes gynécologiques a été examinée par analyses bivariées et multivariées.

Résultats: Au total, 37% des hommes ont déclaré avoir commis au moins un acte de violence physique ou sexuelle à l'encontre de leur épouse durant les 12 derniers mois, soit 12% de déclarations de violence physique seulement, 17% de violence sexuelle seule et 9% de violence physique et sexuelle. Vingt-quatre pour cent des femmes ont déclaré au moins un symptôme de morbidité gynécologique. Par rapport aux femmes dont le mari n'en avait déclaré aucune, celles qui avaient subi des violences physiques et sexuelles ou sexuelles seulement présentaient une probabilité élevée de déclaration de symptômes gynécologiques (rapport de probabilités, 1,7 et 1,4, respectivement).

Conclusions: Les résultats laissent entendre que la violence est liée à la morbidité gynécologique à travers le traumatisme physique, le stress psychologique ou la transmission d'IST. Des soins de santé reproductive incorporant des services de soutien aux victimes de la violence au foyer sont nécessaires pour répondre aux besoins particuliers des femmes violentées.

Acknowledgments

Financial support for the survey was provided by the New Delhi office of the United States Agency for International Development. This research was also funded by the National Institute of Child Health and Human Development grant R01-HD39405-03.

Author contact: rbsteph@sph.emory.edu