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Associations between Wife-Beating and Fetal and Infant Death: Impressions from a Survey in Rural India

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Abstract: *This report examines the linkages between wife-beating and one health-related consequence for women, their experience of fetal and infant mortality. Community-based data are used drawn from women surveyed in two culturally distinct sites of rural India: Uttar Pradesh in the north, in which gender relations are highly stratified, and Tamil Nadu in the south, in which they are more egalitarian. Results suggest that wife beating is deeply entrenched, that attitudes uniformly justify wife beating, and that few women can escape an abusive marriage. They also suggest that the health consequences of domestic violence-in terms of pregnancy loss and infant mortality-are considerable and that Indian women's experience of infant and fetal mortality is powerfully conditioned by the strength of the patriarchal social system. Results are tentative because of data limitations, but they are consistent and strong enough to warrant concern. They argue for the integration of services to identify, refer, and prevent domestic violence in the primary or reproductive health programs of the country and for the safe motherhood programs to be particularly vigilant, sensitive, and responsive to the conditions of battered women during pregnancy and the postpartum period. (*Studies in Family Planning*; 29,3:300-308)*

Globally, a disturbing profile has begun to emerge on the prevalence and health consequences of violence against women. For example, the World Bank estimates that rape and domestic violence together account for 5 percent of the healthy years of life lost to a woman of reproductive age in developing countries. At a global level, the health burden from gender-based violence against women aged 15-44 is comparable to that posed, in this age group, by HIV, tuberculosis, sepsis during childbirth, cancer, or cardiovascular disease (World Bank, 1993); (Heise et al.,1994). Evidence from many countries suggests that pregnant women are no less vulnerable to violence than are other women and that the consequences of violence during pregnancy range from miscarriage to low birth-weight infants to maternal morbidity and mortality.

In India, too, gender-based violence-including wife beating, rape, sexual abuse, and dowry-related murder is widespread, but is borne silently. Moreover, data remain

limited, and little is known by way of community-based research about the magnitude and patterns of gender, based violence. Even less is known about its consequences for women's lives, health, and pregnancy outcomes. Using community-based data from women in rural India, this report seeks to shed light on a specific aspect of domestic violence-wife-beating-and to speculate upon the association between wife beating and one health-related consequence for women, their experience of fetal and infant death.

More generally, it seeks to provide the backdrop against, which the Government of India can be held accountable for failure with respect to its obligations under the Women's Convention to take all appropriate steps to prevent and investigate wife-beating, to punish perpetrators, and to provide effective remedies for victims (see, for example, Jejeebhoy and Cook, 1997). The report draws upon data collected in the course of a study on women's autonomy in two culturally distinct sites: Uttar Pradesh in the north, in which the situation of women is especially poor, and Tamil Nadu in the south, where women are relatively better off. In a separate paper, correlates of wife-beating and its linkages with other dimensions of female autonomy are discussed (Jejeebhoy, 1998).

An increasing number of studies have suggested that pregnant women are not spared from violence. A prospective, study of battery during pregnancy among women of low income in Baltimore and Houston suggests that one in six women was beaten during pregnancy; women who suffered violence were significantly more likely than other women to delay antenatal care (McFarlane et al., 1992). Other studies have revealed that women who suffered violence during pregnancy were two times more likely than other women to miscarry, and four times more likely to give birth to a baby of low birth weight, a well-known predictor of infant mortality (Stark et al., 1981); (Bullock and McFarlane, 1989). In Costa Rica, a study of battered women found that about half were beaten during pregnancy, and 8 percent of these reported having a miscarriage as a result of the beating (Ugalde, 1988). A qualitative study conducted in the slums of Bombay concludes likewise: A relatively large proportion of women who experienced fetal loss do, in fact, associate the miscarriage or stillbirth with a violent assault inflicted upon them by their husbands (Ramasubban and Singh, 1997). More generally, evidence from a multivariate study suggests an association between wife-beating experience and child mortality among women in rural South India (Rao and Bloch, 1993).

This kind of evidence would suggest that women who suffer violence during pregnancy may indeed experience higher rates of fetal and infant loss than do women who are better off, for such reasons as delayed seeking of health-care services, neglect, and powerlessness.

The Setting

Uttar Pradesh and Tamil Nadu lie at two extremes of the social and cultural spectrum in India, although economically they are relatively similar. Both states are poor, with about 37 percent in Uttar Pradesh and 40 percent in Tamil Nadu (and 33 percent in India overall) living below the poverty line. Both states are largely agricultural (Uttar Pradesh, 72 percent; Tamil Nadu, 61 percent; India, 70 percent). Yet huge differences exist between the two areas in social development and mortality and fertility levels. For example, the literacy rate is much higher in Tamil Nadu (63 percent) than in Uttar Pradesh (42 percent), life expectancy in Tamil Nadu (61) exceeds that of Uttar Pradesh (51) by nearly ten years, and total fertility rates are much lower in Tamil Nadu (2.2 children per woman), compared with Uttar Pradesh (5.1 children).

Differences persist in infant and child mortality levels as well. Despite impressive declines, infant and child mortality remain unacceptably high in India generally. For example, in 1992-93, the infant mortality rate was 94.3 deaths per 1,000 live births for rural India as a whole, ranging from 76.2 in rural Tamil Nadu to 126.5 in rural Uttar Pradesh (IIPS, 1995). Although infant and child mortality rates are robust, fetal mortality rates appear to be considerably underestimated: 8 percent of all pregnancies in rural Uttar Pradesh are reported to have resulted in fetal loss, compared with 13 percent in rural Tamil Nadu, possibly the result both of better reporting and of higher levels of induced abortion in Tamil Nadu (Population Research Center et al., 1994); (Population Research Center, Lucknow University et al., 1994).

A major factor underlying both high infant mortality rates and low female literacy rates in India is the powerlessness of women. In most of India, both north and south, and among both Hindus and Muslims, the family is mainly patriarchal, patrilocal, and patrilineal (Altekar, 1962); (Karve, 1965). Women are defined as inferior; husbands are assumed to "own" women, and to have the right to dominate them. Inegalitarian gender relations deny women a decision-making role in health and other family matters, inhibit them from even expressing-let alone seeking care for-a health need, and expose them to violence in the household. Although female powerlessness is undoubtedly more acute in north than in south India, in both settings, women's powerlessness is a critical factor underlying both their vulnerability to domestic violence and their exclusion from health-care decisions, including those surrounding care during pregnancy, and infant and child health.

Data and Limitations

This report draws upon data from a community-based survey on women's autonomy conducted in Uttar Pradesh and Tamil Nadu. [1] The data set is one of the first to examine regional differences in autonomy among rural Indian women. Data were collected in 1993-94 from a total of 1,842 women aged 15-39, drawn purposively from two blocks in two districts each of Tamil Nadu and Uttar Pradesh; and among Hindus and Muslims in each setting. [2] Although this survey was not explicitly designed to focus on domestic violence, a few questions on the issue were included in order to assess power relations within the home. Given the sensitive nature of the topic, a decision was made against exploring the incidence and patterns of violence at length, and as a result, data are limited and results tend to be suggestive and exploratory.

Data limitations as far as an investigation of domestic violence is concerned must be acknowledged at the outset. The question on wife beating was phrased as follows: "Sometimes men beat their wives. Has your husband ever beaten you [up]?" No probes or supplementary questions were asked. A problem with such a structured question without probes is that women may be shy, and likely to under-report their experience of violence when asked by an unfamiliar person in a one-shot, structured interview; moreover, in some cases, beating might be interpreted to include only very severe abuse. Hence the structure of the question is almost certain to have underestimated the extent of violence experienced.

Aside from the possibility of under-reporting, other data limitations include the absence of information on women's own health, which precludes insights into the relationship of wife beating to women's health in a direct way. Responses reflect lifetime experience of domestic violence, and not necessarily violence occurring specifically during pregnancy or the postpartum period. In order to capture relatively recent experiences of violence, as well as that occurring during the prime childbearing years, this study is restricted to women married for ten or fewer years. Although the data are clearly not ideal for an investigation of how domestic violence affects women's health, they do permit some preliminary investigation on the extent to which women who have ever been beaten by their husbands have also experienced higher rates of fetal and infant mortality than have other women.

A demographic and socioeconomic profile of the, sample from Uttar Pradesh and Tamil Nadu, respectively, are shown in [Table 1](#). Results clearly indicate the major similarities (age, fertility, household economic status) and the major differences between respondents in each setting (education, economic activity, residence patterns). Several

dimensions of women's autonomy are, also presented in the table. Clearly, the two settings differ substantially in terms of women's decision-making authority and mobility, and less so in their freedom to make purchases for themselves (see Jejeebhoy, 1998), for a discussion of how these factors influence wife-beating experiences).

Table 1 : Selected characteristics of women surveyed who had one or more pregnancies and who were married ten or fewer years, by state and religion, Uttar Pradesh and Tamil Nadu, 1993-94

Characteristic	Average	Uttar Pradesh			Tamil Nadu		
		Total	Muslims	Hindus	Total	Muslims	Hindus
Education (percent)	54.6	36.7	23.2	50.2	70.2	78.3	62.0
Any	34.2	17.5	16.4	18.6	49.2	56.3	42.1
1-6 years	20.4	19.2	6.8	31.7	21.0	22.0	19.9
7+							
Economic activity (percent)	54.7	59.6	59.4	59.7	49.9	30.6	69.2
Performed any work in last year	22.0	9.9	12.6	7.2	34.1	14.3	53.9
Performed any wage work in last year							
Current age (years)	22.9	22.1	22.3	21.9	23.8	23.3	24.3
Fertility	1.7	1.8	1.8	1.9	1.6	1.8	1.5
Mean number of children ever born	1.6	1.6	1.6	1.7	1.5	1.7	1.4
Mean number of surviving children	0.8	0.8	0.8	0.8	0.7	0.7	0.7
Mean number of surviving daughters	0.8	0.8	0.8	0.9	0.8	0.9	0.7
Mean number of surviving sons							
Coresiding with mother-in-law (percent)	52.2	68.3	79.6	57.0	36.2	42.5	29.9

Number of consumer goods owned ^A	2.0	2.1	1.5	2.6	2.0	2.1	1.8
Husband's education (years)	6.1	7.0	4.8	9.3	5.2	5.7	4.8
Indices of women's autonomy	1.5	0.5	0.5	0.5	2.5	2.3	2.7
Decisionmaking ^B	1.6	1.1	1.1	1.1	2.1	1.6	2.6
Mobility ^C	0.5	0.5	0.5	0.5	0.6	0.5	0.6
Resource control: free to make purchase independently ^D							
(N)	(894)	(428)	(207)	(221)	(466)	(245)	(221)

^A Goods include vehicle; clock or watch; fan; radio; refrigerator; sewing machine; small appliance, such as iron; stereo; television.

^B Index ranges from 0 to 6, reflecting whether woman participates in, and is the main decisionmaker for, purchase of food, jewelry, and major household goods.

^C Index ranges from 0 to 5, reflecting the number of five places (market, health centre, community center, homes of friends, and next village) to which the woman may go unescorted.

^D Index ranges from 0 to 3, reflecting the number of items (clothes, jewelry, gifts) that the woman may purchase on her own without consulting others or obtaining resources from others.

Wife-beating

Although data on domestic violence against women in South Asia are limited, those that exist suggest its widespread prevalence. One study, conducted among women and men in Jullander district, Punjab, North India, shows that about 75 percent of scheduled caste women reported being beaten frequently by their husbands; and likewise, about 75 percent of men reported beating their" wives. Far fewer (22 percent) higher-caste

men admitted beating their wives (Mahajan, 1990). Another study of women in rural Karnataka, South India, shows that 22 percent of its female respondents report having been beaten by their husbands, 12 percent within the last month; the authors note, however, that these figures are, in all likelihood, underestimates, a conclusion based on the findings of supplementary qualitative data (Rao and Bloch, 1993). A recent study in Bangladesh observes that, although 47 percent of all women reported ever being beaten by their husbands, 19 percent reported being beaten during the 12 months preceding the survey (Schuler et al., 1996). A qualitative investigation of women residing in a slum in Bombay suggests that wife beating is not unusual among its 60 respondents, even during pregnancy (Ramasubban and Singh, 1998).

Results of this study generally corroborate the findings of these earlier studies. Wife beating is widely prevalent in both settings. For the sample as a whole, as many as two in five women--42 percent to 48 percent in Uttar Pradesh and 36 percent to 41 percent in Tamil Nadu-report having suffered beatings from their husbands (Jejeebhoy, 1998). Table 2, shows that among women married ten or fewer years, proportions are not much lower: 40 percent to 46 percent in Uttar Pradesh and 33 percent to 35 percent in Tamil Nadu. Wife-beating experiences, moreover, do not vary much by age, parity, or the number of sons or daughters a woman has.

Table 2: Percentage reporting having been beaten among women who have experienced one or more pregnancies and who have been married for ten or fewer years, by age and parity, according to state and religion, Uttar Pradesh and Tamil Nadu, 1993-94.

Variable (percent)	Average	Uttar Pradesh			Tamil Nadu		
		Total	Muslims	Hindus	Total	Muslims	Hindus
Respondents	38.4	42.7	39.6	45.7	34.2	33.1	35.3
Age	39.2	43.1	41.1	45.1	35.3	31.9	38.6
15-24	37.3	41.0	34.7	47.4	33.6	35.3	31.8
25-39							
Number of surviving children	32.6	43.7	42.6	44.7	21.5	14.6	28.3
0	35.3	41.3	41.3	41.3	29.3	27.9*	30.6
1	41.8	41.9	38.1	45.6	41.8	40.2*	43.3
2	43.1	44.2	36.4	51.9	42.0	42.6*	41.4

3+							
Number of surviving daughters	35.9	44.1	42.1	46.2	27.6	24.6	30.6
0	39.3	39.4	34.3	44.6	39.1	37.1	41.1
1	43.4	44.4	42.2	46.5	42.5	47.4*	37.5
2+							
Number of surviving sons	36.4	42.8	41.2	44.3	30.1	24.4	35.8
0	39.4	43.6	42.9	44.2	35.2	40.2*	30.1
1	40.6	40.6	30.0	51.1	40.7	34.5*	46.9
2+							
(N)	(894)	(428)	(207)	(221)	(466)	(245)	(221)

* Differences between means compared with lowest category are significant ($t > 2.0$)

Table 3 shows that wife beating is widely accepted both by women and their husbands as a husband's right and a woman's due. Severe beating is uniformly justified and condoned for many reasons, including, for example, a woman's disobeying her husband's orders.

Table 3 : Percentage who agree that a husband is justified in beating his wife and percentage who agree that a women is justified in leaving her husband if he beats her regularly, among women who have experienced one or more pregnancies and who have been married for ten or fewer years, by reason for beating, according to state and religion, Uttar Pradesh and Tamil Nadu, 1993-94

Reason husband justified for beating/reason wife justified for leaving	Average	Uttar Pradesh			Tamil Nadu		
		Total	Muslims	Hindus	Total	Muslims	Hindus
Wife is disobedient (ever)	--	56.8	56.0	57.5	--	--	--
even after husband has advised/warned	--	--	--	--	71.2	76.3	66.1

her							
Wife neglects household chores (ever)	--	42.8	42.5	43.0	--	--	--
even after husband has advised/warned her	--	--	--	--	58.1	66.9	49.3
Wife is disrespectful (ever)	--	25.2	27.2	23.2	--	--	--
even after husband has advised/warned her	--	--	--	--	54.8	62.0	47.5
Wife is justified in leaving her husband if he beats her regularly	5.8	4.2	3.5	4.9	7.3	6.9	7.7
(N)	(894)	(428)	(207)	(221)	(466)	(245)	(221)

In Tamil Nadu, it was necessary to qualify to "Is it all right for a man to beat his wife if she...even after he has explained to/advised/warned her..."

-- = Not answered in the same way in both states.

At the same time, cultural norms and economic realities constrain the overwhelming majority of women from agreeing that a severely beaten woman is justified in leaving her husband.

Finally, an earlier investigation of these data on the correlates of wife-beating points to the relatively poor predictive power of a range of usually expected correlates of wife-beating, and underscores the point that violence against women cuts across all groups in both cultures. That study also points out that correlates of wife-beating are largely those reflecting some aspect of women's autonomy and that factors relating to women's situation and autonomy appear to have a far greater protective influence against violence in Tamil Nadu than in Uttar Pradesh. For example, in Tamil Nadu, access to and, especially, control over resources appeared to reduce chances of violence

considerably; in Uttar Pradesh, where seclusion of women is more strictly enforced, mobility appears to have a similar influence (Jejeebhoy, 1998).

Women's Experience of Child Mortality

Reflecting the high rates of infant and child mortality reported earlier for the rural populations of each state, large proportions of women have experienced at least one fetal, infant's, or child's death. For example, [Table 4](#) shows that 27 percent of all women report some pregnancy loss (miscarriage, induced abortion, or stillbirth). Because data are drawn from retrospective histories, some recall lapse may exist in reporting pregnancy loss.

Table 4 : Percentage reporting that they have been beaten by their husbands and have experienced fetal and infant mortality among women who have had one or more pregnancies and who have been married for ten or fewer years, by state and religion, Uttar Pradesh and Tamil Nadu, 1993-94

Variable	Average	Uttar Pradesh			Tamil Nadu		
		Total	Muslims	Hindus	Total	Muslims	Hindus
Experienced any pregnancy loss ^A	27.4	26.3	27.2	25.4	28.6	22.7	34.4
	24.8	22.3	23.8	20.8	27.3	20.5	34.2
Has never been beaten by husband	31.1*	31.6*	32.4*	30.7*	30.7	26.7*	34.7
Has been beaten by husband							
(N) ^B	(748)	(358)	(169)	(189)	(390)	(207)	(183)
Experienced pregnancy loss or infant death	36.9	39.4	39.1	39.7	34.5	28.5	40.4
	30.7	31.2	31.7	30.7	30.2	23.5	36.9
Has never been beaten by husband	45.8*	50.0*	50.0*	50.0*	41.6*	37.3*	45.8*
Has been beaten by husband							
(N) ^B	(748)	(358)	(169)	(189)	(390)	(207)	(183)
Experienced one or	12.8	16.1	15.2	17.1	9.7	8.3	11.1

more infant deaths	8.5	11.6	12.1	11.1	6.0	4.6	7.5
Has never been beaten by husband	19.1*	21.8*	19.7*	23.9*	15.9*	14.7*	17.2*
Has been beaten by husband							
(N) ^C	(729)	(352)	(165)	(187)	(377)	(206)	(171)
Experienced one or more deaths of children aged one or older	1.7	1.2	1.2	1.1	2.1	1.9	2.3
Has never been beaten by husband	1.4	1.0	2.0	0.0	1.6	2.3	0.9
Has been beaten by husband	2.1	1.2	0.0	2.3	3.0	1.3	4.6*
(N) ^D	(729)	(352)	(165)	(187)	(377)	(206)	(171)

* Differences in means of fetal, infant, and child mortality reported by women who were and were not beaten by their husbands are significant ($t > 2.0$).

^A Figure includes miscarriages, abortions and stillbirths.

^B Figure reflects women who report one or more pregnancies.

^C Figure reflects women who have had at least one live birth.

^D Figure reflects women with at least one child surviving beyond infancy.

In addition, 13 percent of all women who have ever had a live birth have experienced an infant death. Altogether, almost two in five ever-pregnant women (37 percent) have experienced a pregnancy loss or infant death. [3]

Differences between the two states are as expected. Whereas Tamilian women have experienced lower levels of early child mortality than have women from Uttar Pradesh, differences are much narrower for women married for ten or fewer years than they are for all women irrespective of marital duration (not shown here). Although differences

in reported fetal mortality are relatively muted, they are much wider when proportions of women experiencing at least one infant death are considered. Correspondingly, 16 percent of respondents from Uttar Pradesh, compared with 10 percent of those from Tamil Nadu, have experienced at least one infant death.

Wife-beating and the Experience of Fetal and Infant Death

The link of wife beating to pregnancy and infant loss may occur for at least two reasons. The first is direct: Wife beating is observed to lead to miscarriage. In (Ramasubban and Singh's 1998) study in the Bombay slums, for example, one woman reported: "One day, when I was eight months pregnant, my husband in a fit of rap due to the constant fights between my in-laws and I, took out his anger on me. He pushed me down the flight of 16 steps outside the house. The child in my stomach died."

The second is indirect, but probably more widespread. Women who are beaten are most likely to be the most powerless women. They have little autonomy in terms of decision-making authority, mobility, or control over resources-in caring for themselves or for their infants. As a consequence, their health-care seeking and nutrition are compromised, and they are more likely than other women to experience fetal mortality, to deliver babies of low birth weight whose survival is generally uncertain, and to have less decision-making authority or confidence in caring for their infants. Thus, they are more likely to experience infant loss. The experience is described in the case of another woman in (Ramasubban and Singh's study 1998): 'After my first child was born dead ... they started mistreating me...and when my husband came back home from work, she [mother-in-law] filled his ears with complaints and urged him to beat me. He would get enraged and would beat me. It happened every day.'" This woman also reported that she had little autonomy in decisions regarding nutrition or health care and subsequently suffered two additional miscarriages.

The results shown in Table 4 point to an association between domestic violence, pregnancy and infant loss. Women who have suffered beatings appear to be significantly more likely than other women to have experienced fetal wastage or infant deaths in every group, irrespective of religion or region of residence. In contrast, little association appears to exist between domestic violence and the experience of child mortality.

The association between wife-beating and fetal and infant mortality persists even after other factors are controlled. Table 5 presents the results of logistic regression models predicting whether a woman experienced one or more fetal, infant, and infant or fetal

deaths. Correlates include, aside from wife-beating experience, such well-established predictors of child mortality as women's education, age and parity, work status, religion, economic status (measured in terms of the number of consumer goods owned), and region or district, as well as three indices of autonomy-decision-making, mobility, and control over resources. Odds ratios greater than one indicate a positive relationship between the independent variable and the mortality experience, and odds ratios less than one indicate a negative relationship.

Table 5: Logistic regression results predicting women's experience of fetal, infant, and fetal or infant death among those married for ten or fewer years, Uttar Pradesh and Tamil Nadu, 1993-94.

Variable	Fetal death			Infant death			Fetal or infant death		
	(women with 1 + pregnancies)			(women with 1 + births)			(women with 1 + pregnancies)		
	Total	Uttar Pradesh	Tamil Nadu	Total	Uttar Pradesh	Tamil Nadu	Total	Uttar Pradesh	Tamil Nadu
Ever been beaten by husband	1.47**	1.89**	1.29	2.02**	2.36**	2.13*	1.84***	2.55***	1.68**
Education (years)	0.92**	0.94	0.91**	0.91*	0.96	0.82**	0.93**	0.95	0.89**
Age	1.19***	1.26***	1.17***	0.86**	0.83**	0.91	1.11**	1.10*	1.12**
Number of children ever born	0.62***	0.59***	0.59***	2.43***	2.62***	2.26***	0.95	1.06	0.81
Worked for cash in last year	1.36	1.43	1.14	0.99	0.82	0.83	1.29	1.13	1.10
Number of consumer goods owned	1.04	1.08	0.99	1.00	0.99	1.02	1.02	1.04	1.00
Hindu	1.07	0.85	1.28	1.65*	1.38	2.30*	1.25	1.03	1.48
State or district	0.92	0.93	0.92	1.16	0.65	1.13	0.88*	0.60**	0.96
Autonomy	0.92	1.08	0.95	0.89	0.80	0.96	0.91	0.94	0.96

indices	1.00	1.03	0.98	0.98	1.10	0.74*	1.00	1.09	0.91
Decision making ^A	1.06	1.31	0.87	0.84	0.93	0.75	1.02	1.25	0.84
Mobility ^B									
Resource control ^C									
Log likelihood	-413.26	-187.56	-217.69	-228.69	-129.27	-94.22	-469.22	-223.22	-235.20
Pseudo R2	0.06	0.09	0.06	0.18	0.17	0.21	0.05	0.07	0.05
(N)	(748)	(358)	(390)	(729)	(352)	(377)	(748)	(358)	(390)

*Significant at $p < 0.01$; $p < 0.001$.

^A Index ranges from 0 to 6, reflecting whether the woman participates in, and is the main decisionmaker for purchase of food, jewelry and major household goods.

^B Index ranges from 0 to 5, reflecting the number of five places (market, health center, community center, home of friends, and next village) to which the woman may go unescorted.

^C . Index ranges from 0 to 3, reflecting the number of items (clothes, jewelry, gifts) that the women may purchase on her own without consulting others or obtaining resources from others.

Results are striking in several ways. For one, they highlight the powerful association between women's experiences of wife-beating and infant and fetal loss, even after such well-known correlates as education and parity have been controlled (in contrast, no association is found between domestic violence and childhood mortality). Results are strong and significant for both Tamilian and Uttar Pradesh women; associations rival those exerted by other, better-known correlates of child mortality. Second, although the association between wife-beating and fetal or infant mortality experiences is positive and significant, the effect is strongest when the correlates of all early losses, fetal as well as infant, are considered. Third, results suggest that associations between wife-beating experiences and both mortality measures are stronger in Uttar Pradesh, where women are acutely powerless, than in Tamil Nadu, where women have some measure of autonomy, and, as a result of marriage and residential patterns, some support from kin. Finally, although other findings have suggested that other direct measures of female

autonomy exert an influence on women's ability to remain free from violence or threat (Jejeebhoy 1998), the findings reported here suggest that they do not exert an independent influence, by and large, on fetal or infant death; their influence is generally mild and insignificant compared with that of wife-beating.

The effect of other, better-known determinants of child mortality is evident also. As expected, education plays a significant role in enhancing infant and child survival (not presented here) in both settings--even after controls for economic status, age, religion, and region are applied--supporting the hypothesis that education strengthens women's ability to make prompt decisions regarding their own and their infants' health care. The net effect of education on fetal mortality is, however, negligible, a finding that perhaps reflects greater accuracy in recognizing and reporting miscarriage among educated women. Moreover, patterns vary across the two states: The influence of education on infant mortality and the combined measure of infant or fetal mortality is much stronger in Tamil Nadu than in Uttar Pradesh, implying the extent to which cultural factors have conditioned the associations. In the relatively more egalitarian setting of Tamil Nadu, education plays a powerful role in influencing healthy pregnancy outcomes and infant survival. In Uttar Pradesh, although education enhances fetal, infant, and childhood survival, its influence is modest.

Other factors also exert a significant net influence on fetal wastage and infant mortality. As expected, women of high parity are more likely to have experienced infant death than are other women. South Indian women are less likely to experience fetal and infant mortality than are North Indian women, although, within each state, district of residence has an erratic effect. Hindu women appear somewhat more likely to experience fetal or infant mortality than are Muslim women, a finding also observed in the National Family Health Survey (IIPS, 1995).

Two correlates, the net effects of which are consistently negligible, are economic activity and household economic status. Working mothers are no more or less likely to have experienced a fetal or infant (or child, not shown here) death than are non-working women. [4] Although the bivariate relationship of consumer-goods ownership is significant and inverse, its net effect is not.

Conclusions

The overwhelming conclusions of this study are that wife-beating is deeply entrenched in India, that attitudes uniformly justify wife-beating, that few women would choose to escape an abusive marriage, and that the health consequences of domestic violence are

considerable. Although levels of violence are similar in both settings, and although the association between violence and infant and fetal mortality is evident in both settings, results suggest that women's experiences of infant and fetal mortality are indeed powerfully conditioned by the strength of patriarchy. The experience of domestic violence plays a far more powerful role-and, conversely education a weaker role-in influencing infant and fetal loss in Uttar Pradesh, where gender relations are highly stratified, than in Tamil Nadu, where they are more egalitarian.

Strategies to combat violence are urgently needed and clearly, these must address not only the immediate needs of battered women but must also attack the root cause of violence-women's powerlessness. Results that link domestic violence with infant mortality and pregnancy loss argue powerfully for the integration of services to identify, refer, and prevent domestic violence in the primary or reproductive health program of the country. More particularly, they argue for safe mother-hood programs to be particularly vigilant, sensitive, and responsive to the conditions of battered and possibly battered women during pregnancy and the postpartum period. Women's immediate needs for health care and nutrition-as well as for shelter, economic support, and legal assistance-must be served at local and national government levels. At the same time, community education efforts-directed to women, men, and family elders-must forcefully convey {1} women's rights in the area of domestic violence; {2} the likely consequences of domestic violence on women's lives, and on the lives of the infants they bear; and {3} the need to reverse social attitudes and beliefs that legitimize male violence and the notion of male superiority at the family level among women, their husbands, family elders, and society at large. Domestic violence against women is a difficult and intractable health and social problem in India, and it must be addressed in multiple ways.

This report also points to the dearth of research on the correlates and consequences of domestic violence in India. What is needed is more work that examines the situations and contexts in which violent incidents occur and women's perceptions of options available to protect themselves from violent incidents. Equally important is community-based information on the health consequences of domestic violence for women as well as for the infants and children they bear. Finally, greater insights are required into the perceptions, attitudes, and experiences of the men who are the perpetrators of domestic violence.

Notes

[1]. The main objective of the survey was to make operational the concept of autonomy or empowerment and to assess its relationships to reproductive behavior among different cultural groups north and south Indian women, Hindu and Muslim women. In each of four selected talukas (blocks) of each of four selected districts, village lists were drawn up; these included information on the total number of households in each village by religion and caste. In order to represent Muslims and scheduled caste households adequately, contiguous villages were merged into sampling units of roughly 1,000-2,000 households. As a result, in Tamil Nadu, where generally few Muslims live, clusters of villages were much larger than in Uttar Pradesh, where Muslims represent a substantial proportion of the population. The primary sampling unit (PSU) included in the sample was then selected randomly. In Tamil Nadu, the selected PSU contained a total of 12 villages from Pollachi (Coimbatore district) and 15 from Mudukulathur (Ramnathpuram district). The selected PSUs in Uttar Pradesh contained fewer villages: seven from Kunda (Pratapgarh district) and two large villages (with many petis or identifiable clusters) in Baghpat (Meerut district). Each household in the selected cluster of villages was listed, and this list constituted the sampling frame. The reasons for the difference in the number of villages selected in each state are the following: (i) Village sizes tend to be larger in Uttar Pradesh than in Tamil Nadu and (ii) because Muslims constitute less than 10 percent of the population of Tamil Nadu, a larger number of villages were required in order to reach the target number of eligible respondents. A household-listing exercise was carried out in each of the selected PSUs prior to data collection. House listing was conducted on every structure in the PSU and comprised assigning numbers to structures, recording the addresses of each structure, and listing the names, religion, and caste of each household head. Households to be interviewed were selected randomly from the household lists of each religion and caste list.

[2]. Respondents were asked not only about their education and their work status but also a variety of questions about practices relating to their marriages and about several dimensions of autonomy within their married lives, including their decision-making authority, their personal freedom of movement, wife-husband power relations, including wife-beating, and other attitudes and behaviors. The survey comprised a household questionnaire, an eligible respondent's questionnaire, and a husband's questionnaire. Community questionnaires were also fielded for each village site, and a total of 25 focus-group discussions were held.

[3]. Although retrospective data are available on the age of death in months of all infants who died, these data may not be entirely reliable because of recall bias and other

lapses. Therefore, neonatal deaths are not distinguished in this report. Nevertheless, the data suggest that about 60 percent of infant deaths in this sample occurred during the first month of life.

[4]. Two opposing hypotheses prevail on the links of economic activity of women and their experiences of infant and child mortality. The first suggests that working women's control over resources enables them to purchase health care and good nutrition for their infants and children, as well as for themselves during pregnancy, and thereby increases their chances of successful pregnancy outcomes and healthy infants and children (see, for example, Mason, 1984). The second argues that time spent away from children can often imply the use of inferior baby sitters, exposing the infants of working mothers to poorer care and nutrition, and to higher levels of mortality (see, for example, Basu and Basu, 1991).

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