Violence against women, symptom reporting, and treatment for reproductive tract infection in Kerala State, South India

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Abstract:

In this article we examine factors associated with women's self-reports of reproductive ill health symptoms and factors associated with seeking and receiving treatment for the symptoms. We focus on indicators of women's societal position, especially empowerment (indicated by experience of and attitudes toward violence against women), autonomy, and education. We used data from the National Family Health Survey-2 from Kerala state in Southern India. Based on our results we suggest that violence against women, whether actually experienced or internalized as acceptance of its justification, is associated with increased ill health symptoms, and the acceptance of violence is associated with decreased chance of treatment. Women's higher formal education appeared to reduce treatment seeking for reproductive ill health, perhaps due to the stigma associated with sexually transmitted disease (STD) in this cultural setting. Women's work participation had no significant impact, nor did indicators of women's economic and personal autonomy.

Keywords: Kerala | India | reproductive health | violence against women | reproductive tract infections

Article:

Following the 1994 International Conference on Population and Development (Cairo), and the 1995 Fourth World Conference on Women (Beijing), public health stakeholders emphasized reproductive health as a priority issue. The World Health Organization has estimated that reproductive and sexual ill health account for 20% of the health burden among women and 14% among men (World Health Organization and *Reproductive Health Matters*, 2005), and therefore adopted the first world strategy on reproductive health in its May 2004 World Health Assembly. This strategy includes combating sexually transmitted infections (STIs) and reproductive tract infections (RTIs), including HIV, to promote UN Millenium Development Goals (World Health

Organization and *Reproductive Health Matters*, 2005). Despite progress toward these goals, persistent challenges stem from gaps between richer and poorer nations, inequalities in political power; and the growth of forces advocating conservative attitudes toward the role of women in family and society (Berer, 2005). These challenges frequently involve gender inequality and its direct link to women's health and access to health care. Miller and Rosenfield (1996) state, "Perhaps the most powerful adverse determinant of women's overall reproductive health—as well as the most historically overlooked—is gender inequality" (p. 367).

In this article we examine factors associated with women's self-reports of reproductive ill health symptoms and factors associated with seeking or receiving treatment for the symptoms. We focus on indicators of women's societal position, especially women's experience of and attitudes toward violence, women's autonomy, and education. Our study was set in Kerala state in Southern India, a region noted for many excellent health and sociodemographic outcomes (e.g., long life expectancy, widely available health care, low fertility and infantchild mortality), especially for women (e.g., equitable population sex ratios, near-complete female literacy, history of matrilineal kinship that promotes more favorable familial status for women). Other less favorable societal factors include high poverty, unemployment for both sexes, widespread violence against women, and growing conservatism on the role of women in family and society.

Paradoxically, in Kerala state, "although two in every five currently married women report at least one reproductive health problem that could be symptomatic of more serious reproductive tract infection, more than half of them bear the problem silently without seeking advice or treatment" (Nangia, Kishor, Nair, Radha Devi, Irudaya Rajan, & Chitanand, 2001, p. 183). We examine critical factors such as violence, autonomy, and education that influence women's reproductive health and appropriate care use, when commonly promoted remedies (such as women's education and availability of health care facilities) already exist.

CONCEPTUAL FRAMEWORK

Theoretical approaches to health promotion and health behavior emphasize ecological interdependence among individuals, families, and community and policy environments (McLeroy, Bibeau, Steckler, & Glanz, 1988), and state that when all levels of this ecological system are not in equilibrium, distortions in health behaviors occur (Stockoles, 1992). When translating these frameworks into action for interventions focusing on women's health, some scholars emphasize gender inequality as a key example of disequilibrium that can lead to disparities in health status and access. The theory of gender and power (Wingood & DiClemente, 2002) is an influential social structural framework to guide public health interventions and emphasizes how the sexual division of power, labor, and norms influence gender differentials in risk for disease, and that interventions that address these differentials can reduce women's risk for disease. This framework therefore calls for analyses of how indicators of gender inequality, including measures of women's societal position, influences their health status and access to health services.

In this vein, emerging research in developing countries is distinguishing between impacts of different indicators of women's societal position, such as formal education, autonomy, and empowerment (indicated by women's experience of and attitudes toward violence), on

reproductive health and associated health care use. Studies in South Asia suggest that education alone is insufficient to transcend the substantial gender inequalities linked with poor health and limited health care. Indicators of female autonomy (e.g., freedom of mobility or economic autonomy) appear to play a greater role in this regard, but the way that specific indicators operate depends on the cultural and socioeconomic context within which women are embedded. For example, within patrilineal and patriarchal Northern Indian contexts, contact with natal kin, freedom of mobility, and economic autonomy promote women's use of maternal health care (Bloom, Wypij, & Das Gupta, 2001). In Southern Indian contexts, contact with natal kin and freedom of mobility are socially more normative and may not influence women's power of self-determination as in the North. In the South, lower education, lack of personal autonomy, lack of economic resources, and lower status within the family are linked with less knowledge, perception, and reporting of reproductive symptoms (Abraham et al., 2005). Additional evidence from diverse contexts is thus needed to clarify the nature of the linkages among women's societal position, reproductive health, and care use.

An important indicator of women's empowerment is their experience of violence, and greater analyses of the role of this factor in a comprehensive framework of female empowerment and reproductive health is called for (review in Malhotra, Schuler, & Bender, 2002). The role of violence against women in increasing reproductive health burden has been examined (Fernandez & Krueger, 1999; Finkler, 1997; Heise & Ellsberg, 2001), as have factors associated with women's experience of violence in India (Krishnan, 2005; Rao, 1997). The role of violence against women in inhibiting appropriate health care use has been less examined, however, especially in the Indian context.

Gender inequality and the comparatively low status of women within the overall societal context of South Asia also foster a “culture of silence” surrounding reproductive and urinary tract diseases. This is due to a combination of embarrassment, shame associated with sexuality, and ignorance regarding bodies and normal vs. abnormal symptoms and statuses. This culture of silence has been identified as a major barrier for women's recognition and reporting of disease symptoms, and seeking and receiving treatment (United Nations Population Fund [UNFPA], 1999).

The significance of analyzing women's self-reported reproductive ill health symptoms needs to be clarified because of its inconsistent relationship to actual disease proven by laboratory test results or physician diagnoses. Some authors argue that self-reports underestimate the prevalence of RTIs. A study of pregnant women in Delhi reported that more than half the women with a proven RTI did not report any symptoms, due to the asymptomatic nature of the disease or lack of knowledge of normal symptoms (Mayank, Bahl, & Bhandari, 2001). A study of 385 women with children aged between 6 and 12 months, conducted in a Karnataka district, also showed that 36% of women met clinical criteria for reproductive tract disease, laboratory test results showed reproductive tract infections in 56% of cases, while only 29% of women self-reported symptoms associated with such disease (Bhatia, Cleland, Bhagavan, & Rao, 1997). Other researchers found that in Bangladesh, however, more women reported symptoms than were actually diagnosed with disease, and overtreatment of women carried financial and social costs (the latter including increased risk of family disruption and violence if women were perceived to have an STI; Hawkes et al., 1999). Thus, although researchers seek greater standardization in a checklist

of self-reported measures, to be accompanied by laboratory and physician testing protocols (Bulut, Yolsal, Filippi, & Graham, 1995), analysis of self-reports of reproductive symptoms is supported to clarify its associations with women's social position, risk factors, and inappropriate health care or medication use (Boonmongkon, Nichter, & Pylypa, 2001; Jejeebhoy, Koenig, & Elias, 2003).

Cultural Context

Kerala state, on India's Southwest coast, is typically lauded for superior social and demographic achievements: high literacy, long life expectancy, and low fertility and mortality, at a comparatively low level of economic development (Dreze & Sen, 1998; Raj, 1998; Sen, 1992). Kerala's social and demographic achievements have been largely attributed to high women's status, said to derive from its matrilineal traditions. However, doubt is being cast on these long-held notions. Some scholars argue that the Kerala model of development has not fully included women, tribals, and lower castes (Deshpande, 2000; Omvedt, 1998; Saradamoni, 1994). Economic development has produced marked gender disparities in poverty and access to resources. Unemployment rates are high for both men and women (Gumber, 2000; Pandey, 1999). High literacy and matrilineal traditions have not led to adequate political participation of Kerala women (Erwer, 1999). Further, matrilineal traditions, while associated with female value, usually did not promote female self-determination or empowerment. Moreover, Kerala's matrilineal and matrilocal systems were dismantled over the last century, and patrilineal inheritance, patrilocal residence, and dowry payments are now near universal. High female literacy has not stemmed greater social conservatism or violence against women. Thus, societal changes in Kerala are associated with diminishing status of women in some domains, despite higher education and lower fertility. Against this backdrop of societal change affecting women in different ways, we examine the situation of women reporting RTI symptoms and seeking treatment for them.

METHODS

Data

We used Kerala state data from the second wave of India's National Family Health Survey (NFHS-2), conducted in 1998–1999. The NFHS surveys detail information on fertility, mortality, family planning, health status, nutrition, and health care.[1] Respondents were chosen by systematic multistage, stratified, random sampling within each of two sampling domains (urban and rural). Most nonresponses were due to the fact that the selected respondent was not at home despite repeated visits, that is, the rate of refusal was negligible. The data from Kerala state includes a sample of 2,834 households, with 2,884 ever-married women of reproductive age. The questions of interest for this study were asked of 2,678 currently married women.

[1] NFHS-2 covers more than 99% of India's population in the 26 states (excluding Union Territories) that existed at the time of the survey, with a sample of 98,000 households, from which 90,000 ever-married women aged 15–49 were interviewed in-depth. The study was conducted by Indian Institute for Population Sciences, Mumbai (designated by the Government of India Ministry of Health and Family Welfare as the nodal agency to co-ordinate and conduct the study with the help of 13 field organizations), with funding support from USAID and UNICEF, technical assistance from ORC Macro (Maryland, USA), and East-West Center (Hawaii, USA).

Variables of Interest

Dependent Variables

To measure reporting of RTI symptoms, ever-married women were asked, “During the past 3 months, have you had any of the following problems with your vaginal discharge: any itching or irritation in the vaginal area with the discharge; a bad odor along with the discharge; severe lower abdominal pain along with the discharge; a fever along with the discharge; any other problems with the discharge?” The next question ascertained, “During the past 3 months, have you had a problem with pain or burning while urinating, or have you had more frequent or difficult urination?” Currently married women were further asked, “Another problem some women have is feeling pain in their abdomen or vagina during intercourse. Do you often experience this kind of pain,” and “Do you ever see blood after having sex, at times when you are not menstruating?” We combine those reporting only one symptom with those reporting none to exclude symptoms that may not amount to a potentially major RTI (Gorbach, Hoa, Tsui, & Nhan, 1998). Women reporting “yes” to zero or one symptoms were coded 0; and women reporting two or more symptoms were coded 1.

To measure treatment seeking, currently married women in Kerala who had at least one symptom of RTIs (N = 1,128) were asked, “Have you seen anyone for advice or treatment to help you with this problem/these problems?” This variable was coded 1 if treatment was sought from any provider, including a government sector doctor, public health nurse, auxiliary nurse midwife/lay health volunteer, male public health worker (MPW)/supervisor, anganwadi (community) worker, village health guide, other public sector source, nongovernmental organization worker, private sector doctor or nurse, compounder/pharmacist, vaid/hakim/homeopath (non-Western practitioners), dai (traditional birth attendant), traditional healer, other private provider, or any other person. If no treatment was received, the variable was coded 0.

Independent Variables

The independent variables for analysis of reporting symptoms included respondent's demographic characteristics: age (those aged 15–34 coded 1, contrasted with those aged 34–49 coded 0); whether the respondent had borne children (0 for no children and 1 if any) and household socioeconomic characteristics; rural residence (1 if rural and 0 if urban residence); household standard of living index.[2] We included families with medium and high standards of living (a dummy variable each), with a comparison group of those with a low standard of living. Additional family socioeconomic status variables included contrasting members of scheduled caste/tribe groups (who are historically disadvantaged, coded 1) with others (coded 0). The religion variable contrasted those who were Christian (coded 1) vs Hindu and Muslim (coded 0).

[2] The variable “household standard of living index” is calculated in the original database—a summary measure that includes scores for house type (i.e., constructed of more or less durable materials), sanitation facilities, lighting source, cooking fuel, drinking water source, separate kitchen, house ownership, land ownership, livestock ownership, and durable consumer goods ownership (IIPS and ORC Macro, 2001, pp. 24–28). The index is subdivided to contrast families with low, medium, and high standard of living.

We also included whether husband's education was primary or lower (coded 1) or more (coded 0). A third group of independent variables included woman's socioeconomic characteristics: education (those with primary or lower schooling coded 1, and those above this level, coded 0); and work status (1 if working for pay, 0 otherwise.

Other independent variables included indicators of women's autonomy and personal empowerment. These included (a) measures of women's freedom of mobility, health care decision-making autonomy, and role in household decision making (grouped together for parsimony, since preliminary analyses indicated no differences in their impact on the outcome); (b) freedom of contact with natal kin; and (c) economic autonomy (having money set aside for them, and having a say in decision making on expenditures). Higher scores indicated higher autonomy. An additional variable was experience of domestic violence: whether the respondent had ever been beaten or physically mistreated since she was 15 years of age. A final variable in this group measured respondents' acceptance of any justification for domestic violence: whether the woman believed that the husband was entitled to beat his wife under any of the following circumstances (coded 0 if no and 1 if yes to any situation): suspects her of being unfaithful, if her natal family does not give expected jewelry money or other items, if she shows disrespect for in-laws, if she goes out without telling him, if she neglects house or children, or if she does not cook food properly.

The independent variables for treatment seeking include all of these variables, and an additional group of variables indicating health program effects, including whether the respondent had accurate information regarding modes of HIV transmission. This included whether the respondent mentioned the following as modes of any person *avoiding* getting AIDS: abstain from sex, use condoms during sex, have only one sex partner, avoid sex with sex workers, avoid blood transfusions, avoid injections, and avoid IV drug use.[3] The more modes mentioned, the higher the score. The respondent's media exposure was measured: if she read a newspaper/magazine at least once a week *or* listened to the radio once a week *or* watched TV once a week or saw a movie once a month, she was coded 1; otherwise 0. Third, health service contact was measured by whether a family planning worker had visited the respondent at least once in the last 12 months or whether she had visited a health facility for any reason (coded 1 if yes and 0 if no). Finally, the number of RTI symptoms the respondent had (2 or more vs. 0; the dependent variable in analysis 1) is also included.

Data were analyzed with the SPSS statistical program. Since the dependent variables are dichotomous (0 and 1) for each research question, we conducted logistic regression analyses to estimate the likelihood that women would (1) report two or more RTI symptoms and (2) seek treatment (if they had at least one symptom). We included appropriate sample weights provided in the public use dataset to take the complex sampling framework into account and generate unbiased estimates.

RESULTS

[3] NFHS-2 also included questions to measure participants' misperceptions of modes of HIV transmission. We have not included them since preliminary examination indicated no relationship with the outcome.

Descriptive Statistics and Bivariate Associations

In Table 1 we describe the reporting of different symptoms among women in the study (N = 2,678): 42.1% of women report at least one symptom; and about 21.2% report two or more symptoms. The most commonly reported symptoms included itching/irritation, abdominal pain, pain or burning while urinating, and pain during intercourse. (See Table 2). We also note that less than half of the women in Table 1 with at least one symptom received treatment.

TABLE 1. Symptom Characteristics of Kerala Women

	All Women		Women with at least 1*	
RTI Symptoms	**Frequency**	**Percent**	**Frequency**	**Percent**
0	1550	57.9	—	—
1	562	21.0	562	49.8
2	273	10.2	273	24.2
3	150	5.6	150	13.3
4	88	3.3	88	7.8
5	39	1.5	39	3.5
6	11	0.4	11	1.0
7	4	0.1	4	0.4
8	1	0.0	1	0.1
Total	2678	100.0	1128	100.0

*Mean number of symptoms = 1.96. SD = 1.24.

TABLE 2. Specific Symptoms of Kerala Women With at Least One Symptom (N = 1,128)

Specific symptoms	**Percent**
“Pain or burning while urinating”	46.7
“Abdominal pain”	41.7
“Pain during intercourse”	39.5
“Itching/irritation”:	32.4
“Fever”	10.9
“Blood visible after sex”	8.8
“Bad odor”	9.0
“Other problem”	6.6

Among the women in the first analysis, 9.3% reported having ever experienced abuse; and 63.1% accepted at least one justification for wife beating; only 36% did not need permission for contact with natal kin (Table 3, Panel A). Women scored an average of 3.09 on the composite autonomy measure and 1.48 on indicators of economic autonomy. Of these characteristics, we see that rural residents were significantly more likely to report two or more symptoms, as did those with a lower household standard of living index, women whose own or husband's education was of a lower level, those who had experienced any abuse, and those who accepted any justification for wife beating. Women's contact with natal kin and composite autonomy scores also were linked significantly to reporting two or more RTIs, although economic autonomy did not appear associated.

TABLE 3. Bivariate Relationship between Independent Variables and RTI Symptom Reporting and RTI Treatment in Kerala State Women

Variable name	Total%	% reporting RTI	*p* value
Panel A: Bivariate relationships between women's characteristics and reporting 2+ symptoms			
Total		21.1	
Age group 15 to 34	36.4	20.8	.747
Any children ever born	90.1	20.8	.193
Rural resident	70.3	22.7	.002
Household standard of living index			
High	13.7	26.4	
Medium	54.8	23.6	
Low	31.5	14.6	.000
Scheduled caste or schedule tribe	9.5	22.8	.486
Religion			
Hindu	51.8	48.2	
Muslim	31.4	36.2	
Christian	16.7	15.7	.089
Education at primary or lower level	39.5	29.4	.000
Working for pay	23.4	22.0	.524
Husband's education at primary or lower level	41.9	25.5	.000
Accepting any justification for wife beating	63.1	23.4	.000
Ever experienced physical abuse since age 15	9.3	35.5	.000
Contact with natal kin	36.3	18.2	.003
	Mean (SD)		***p* value**
Autonomy composite (range 0–5)	3.09 (1.44)		.009
Economic autonomy (range 0–4)	1.48 (1.19)		.130
Panel B: Bivariate relationships between women's characteristics and RTI treatment			
Total		45.7	
Age group 15 to 34	37.3	48.2	.310
Any children ever born	89.5	49.7	.351
Rural resident	73.6	61.4	.155
Household standard of living index			
High	15.5	55.4	
Medium	59.0	52.0	
Low	25.5	42.7	.010
Scheduled caste or schedule tribe	11.4	45.0	.208
Religion			
Hindu	51.3	51.3	
Muslim	33.3	37.3	
Christian	15.3	11.5	.001
Education at primary or lower level	42.8	55.7	.001
Working for pay	24.7	49.5	.783
Husband's education at primary or lower level	45.7	55.4	.001
Accepting any justification for wife beating	67.1	62.3	.041
Ever experienced physical abuse since age 15	12.9	60.3	.009
Media exposure	91.0	49.7	.267
Any visit to health facility or from family planning worker in last 12 months	88.7	49.6	.278
Contact with natal kin	32.5	48.2	.127

Variable name	Total%	% reporting RTI	*p* value
	Mean (SD)		
Autonomy composite (range 0–5)	1.44 (3.10)		.573 [b]
Economic autonomy (range 0–4)	1.20 (1.40)		.141 [b]
Accurate knowledge of modes of HIV transmission (range 0–5)	1.29 (1.21)		.000 [b]
Number of RTI symptoms (range 1–8)	1.96 (1.24)		.000 [b]

[b] One way ANOVA; all others: Pearson chi sq.

Among women with at least one RTI symptom, 67.1% accepted at least one reason as justification for wife beating; and 12.9% have ever experienced abuse (Table 3, Panel B). These women mentioned an average of 1.29 accurate methods of avoiding HIV, with a standard deviation of 1.21; 88% had either visited a family planning clinic or had a visit from a family planning worker in the last month. The main reasons given by women for their health care contact included having discussed/received immunization (49.5%/43.3%, respectively), having discussed/received disease prevention information (31.4%/25.4%), and having discussed/received treatment for a health problem (14.3%/11.4%). Based on bivariate associations with reporting treatment we suggest that women in households with a higher standard of living index, or *lower* education of self or husband, were more likely to be treated. Women who accepted any justification for wife beating, or who had ever experienced abuse, were less likely to be treated. Religion appeared to be significantly associated with treatment. None of the autonomy indicators appeared to be associated with treatment seeking. Greater knowledge of modes of HIV transmission was associated with being treated, however, as was increasing number of symptoms.

Multivariate Analysis

We report the results of multivariate analyses of the likelihood of women reporting two or more RTI symptoms in Table 4. Odds ratios greater than 1 indicate increased likelihood; those less than 1 indicate decreased chance.

Women who had borne children, and those from households with a higher standard of living, were less likely to report RTI symptoms. Those in rural areas and those with primary or lower education were more likely to report RTI symptoms. Women who had ever experienced physical violence since age 15, or those who accepted any justification for wife beating, were significantly more likely to report RTI symptoms. Those who had experienced violence were almost twice as likely (OR 1.9) to report RTI symptoms. Other indicators of women's autonomy, religion and caste indicators, women's work status, and husband's education, had no statistically significant impact on reporting RTI symptoms.

These results are consistent with general ideas that women from lower socioeconomic backgrounds (as indicated by rural residence, lower household standard of living, and lower education) are more likely to experience RTI symptoms. Some indicators of women's autonomy such as work status and economic or personal autonomy did not show any significant effect once the previously mentioned socioeconomic- and violence-related factors were accounted for. Women who were disadvantaged by actual experience of violence or by internalization of the notion that abuse is justifiable, however, were significantly more likely to report symptoms.

TABLE 4. Logistic Regression Analysis for Variables Predicting Reporting of Two or More RTI Symptoms

			95.0% C.I. for EXP(B)	
Variable	**Sig.**	**Exp(B)**	**Lower**	**Upper**
Age group 15—34	.802	1.029	.825	1.283
Any children ever born	.013	.667	.485	.917
Rural resident	.047	1.213	1.066	1.524
Household standard of living index—medium	.960	.993	.765	1.289
Household standard of living index—high	.019	.676	.487	.937
Christian	.822	1.029	.800	1.324
Scheduled caste/scheduled tribe	.481	.895	.656	1.220
Education at primary or lower level	.114	1.192	.959	1.482
Working for pay	.532	1.081	.847	1.380
Husband's education at primary or lower level	.178	1.160	.935	1.438
Does not need permission for contact with natal kin	.022	.783	.635	.965
Autonomy composite	.133	1.057	.983	1.136
Economic autonomy	.211	.944	.862	1.033
Accepting any justification for wife beating	.012	1.288	1.057	1.568
Ever experienced physical abuse since age 15	.000	1.935	1.471	2.545
Constant	.000	.249		

TABLE 5. Logistic Regression Analysis for Variables Predicting the Likelihood of Treatment for Symptoms of RTI

			95.0% C.I. for EXP(B)	
Variable	**Sig.**	**Exp(B)**	**Lower**	**Upper**
Age group 15 to 34	.153	.812	.611	1.080
Any children ever born	.838	.957	.629	1.458
Rural resident	.652	.935	.699	1.251
Household standard of living index—medium	.974	.994	.710	1.393
Household standard of living index—high	.039	1.558	1.022	2.375
Christian	.000	.542	.386	.762
Scheduled caste/scheduled tribe	.656	.918	.631	1.337
Education at primary or lower level	.026	1.407	1.042	1.900
Working for pay	.465	.889	.649	1.218
Husband's education at primary or lower level	.635	1.071	.807	1.421
Does not need permission for contact with natal kin	.174	1.205	.921	1.577
Autonomy composite measure	.087	.920	.836	1.012
Economic autonomy	.626	1.029	.917	1.155
Accepting any justification for wife beating	.018	.739	.575	.949
Ever experienced physical abuse since age 15	.570	.902	.633	1.286
Any media exposure	.846	1.042	.686	1.583
Accurate knowledge of modes of HIV transmission	.172	1.079	.968	1.203
Any contact with family planning worker or health clinic	.014	1.606	1.099	2.347
Number of RTI symptoms	.000	1.286	1.167	1.416
Constant	.055	.429		

In Table 5 we present results of the multivariate analysis of the factors associated with treatment seeking among women who report at least one symptom of RTI. There appeared no significant

impact of rural residence, household standard of living, caste status, or husband's education. Christian women, however, appeared much less likely to seek treatment than Hindu and Muslim women. We found no association between women's age and having borne children, and the likelihood of getting treatment. Women's work status did not appear to have any impact either. Women's *lower* education, however, was associated with greater likelihood of treatment seeking; this finding is counter to expectations that women's higher education directly increases health-seeking behavior. We believe this finding is in line with other studies indicating greater conservatism among educated women, who are more likely to be aware of and embarrassed by symptoms attributable to reproductive or sexual behavior rather than to sanitation availability or to indigenous health concepts such as "heat." Most women's autonomy indicators had no impact on treatment seeking, including experience of abuse. If women accepted any justification for wife beating, however, their chance of being treated was significantly lowered. Media exposure and HIV-related knowledge had no impact. Contact with a health worker or health facility, however, had a strong positive impact on treatment. Finally, having two or more symptoms led to being treated: women apparently waited until conditions multiplied and became potentially dangerous.

DISCUSSION

Even in a region with high women's literacy and wide availability of health care facilities, factors indicative of women's empowerment, specifically their experience of physical violence or internalization of its justification, influence reporting of symptoms and of treatment. Regarding symptoms, in this South Indian region with its history of matrilineal kinship, lack of female seclusion, and historic promotion of women's education and work participation, indicators of women's autonomy that are important in other settings, such as contact with natal kin and freedom of personal mobility, were not significantly associated with reporting of symptoms. However, other important aspects of women's societal worth—their empowerment in terms of experience of domestic violence and their internalization of accepting any justification of violence—played an important role in their reporting symptoms. Women of relatively lower socioeconomic background (household standard of living, rural residents, and those less educated) are likely to have poorer reproductive health, which may be expected.

Regarding treatment for symptoms, women did not appear barred by poverty or rural residence from being treated. Women appeared to wait, however, until they had multiple symptoms. While contact with a provider increased the chances of treatment, knowledge of health issues such as HIV, or exposure to media, did not play a role. Unexpectedly, women's higher education appeared to inhibit treatment. This finding can be interpreted in the context of long-standing indications that women's formal education in South Asia does not automatically index their power of self-determination. In fact, women's access to education is determined by their families, in line with expectations for their marriage and contributory role in the family. The content and context of formal schooling do not promote individual liberty (Jeffery & Basu, 1996). Rajan, Ramanathan, and Mishra (1996) have shown that Kerala women's schooling is partially responsible for promoting female autonomy in domains such as property ownership, control of income, and seeking health care for children. But as Kabeer (2000) points out, in cultural contexts where such domains were more within female control, these aspects of women's autonomy may not indicate greater self-determination. We know little about the relationship of

Kerala women's education with self-determination in societally challenging domains such as marriage, or even seeking or receiving health care for oneself.

The conservatism of South Asia society regarding sexuality, especially of women, leads to lack of knowledge among substantial sections of the female population on normal health status and disease symptoms. Studies elsewhere in South Asia have found that women attributed their symptoms to deprivations caused by poverty, "melting bones," imbalance of "heat," lack of sanitation facilities, or undergoing procedures such as D&C or abortion. None attributed their symptoms to an sexually transmitted infection (STI) (Bhatti & Fikree, 2002; Oomman, 1995). In Vietnam, women who perceived STIs as stigmatizing were less likely to seek care for symptoms (Go et al., 2002). In Kerala, too, ethnographic research suggests that women of lower socioeconomic classes who experience reproductive disease symptoms also attribute them to "melting bones" or "heat," or to poverty, with attendant inadequate nutrition, sanitation facilities, and access to health care. When health education activities revealed the possible connection between disease symptoms and sexual transmission, many women responded by ceasing to seek treatment. Women's perceptions of RTIs and possible STD revealed a view that "other" women, that is, those of questionable sexual mores, would be at risk of infection and women like themselves (presumably monogamous) would not. Openly addressing the connection between their spouses' sexual activities and their own health risks would be very difficult. Formal education did not remedy the situation: female college students appeared to have very limited information on sexuality (Situational Analysis of Sexual Health in India [SASHI], 1998). Women with formal education, who make the connection between sexual behavior and infection symptoms, may be disinclined to seek treatment for fear of being perceived as transgressing sexual norms, or show a reluctance to discuss their husband's behaviors because of the risk of familial disruption or domestic violence.

Experiencing domestic violence did not play a significant role in seeking treatment once other factors were controlled. Women's acceptance of any justification for wife beating lowered their chance of seeking treatment, however, and thus played an additional role in inhibiting their reproductive health. We thus suggest that the role of violence against women in affecting reproductive health is broader than previously considered. In addition to increasing women's health burden through injuries, the acceptance of violence discourages women from seeking treatment. Thus, violence against women is not merely an outcome of women's lower societal position, but it also plays a role in creating and reinforcing further female disadvantage. Actual experience of violence may not even be necessary to negatively influence women's health status and behavior: a mindset in which violence is perceived as justified is sufficient. Therefore, research on violence against women should be broadened to include consideration of attitudes toward violence, and additional research should include this factor among indicators of women's empowerment. In this case, too, ethnographic research potentially could provide clarification.

CONCLUSION

We believe that our study reinforces arguments that women's societal position influences both reproductive ill health symptoms and treatment for the symptoms. In particular, we add to the evidence that violence against women, whether actually experienced or simply internalized as acceptance of its justification, is associated with increased ill health symptoms and less chance of

treatment. The contention that reproductive health programs must take domestic violence prevalence and responses into account is thereby strengthened. Women's formal education, while necessary as a developmental input and human right, may work to reduce treatment seeking for reproductive ill health unless the stigma associated with STD is reduced.

These findings, particularly in a society noted for high female literacy rates, should lead us to reexamine some of the conventional strategies for health promotion aimed at women in developing regions, and support approaches based on frameworks such as the "theory of gender and power" (Wingood & DiClemente, 2002). Provision of education and information are necessary, but they are not sufficient to tackle widespread lack of treatment for potentially serious conditions. In addition to these conventional measures, gender inequality must be addressed, including eliminating domestic violence and spreading health information in a manner that overcomes issues of shame and stigma. As scholars in the field of gender and development have long argued, without attention to some of the fundamental inequalities in society, simpler measures may compound the problem. We thus add our voices to those calling for greater consideration of the role of gender inequality in general, and violence against women in particular, in the global struggle against reproductive illness, including HIV.

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