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Studies in Family Planning, Vol. 29, No. 4 (Dec., 1998), 388-399.

REPORTS

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To enhance the reproductive health status of couples in developing countries, the knowledge, attitudes, and behavior of both women and men must be investigated, especially where women depend on men for the decision to seek care. This study analyzes data from a survey of 6,727 husbands from five districts in the northern state of Uttar Pradesh, India. Data are presented on men's knowledge of women's health and on their own sexual behavior outside the context of marriage, on their perceptions of sexual morbidity and their attempts at treatment for specific conditions, and on their opinions concerning the social role of wives. Findings indicate that men know little about maternal morbidity or sexual morbidity conditions. Few husbands reported that they had had sexual experience outside of marriage and the majority of these few said they had had such a relationship with more than one partner. Of men who said they had had reproductive morbidity symptoms, many said they had not sought treatment. Men's views concerning the role of wives indicate a low level of women's autonomy in this region of India. Results indicate a pressing need for reproductive health education that targets both women and men in Uttar Pradesh. (STUDIES IN FAMILY PLANNING 1998; 29, 4: 388–399).

The Safe Motherhood Conference held in Nairobi in 1987 led to a wave of research on maternal mortality, and significant advances have been made since then in documenting its levels and causes around the world. Attention is now focused on the need for broadening the concept of women's health beyond the limits of maternity-related death and morbidity (Koblinsky et al., 1993; Koblinsky, 1995). Realigning the focus of research objectives on women's health to a notion more general than pregnancy and childbirth was one of the major agenda items at the International Conference on Population and Development (ICPD) held in Cairo in 1994 (United Nations, 1995) and the impetus behind the recent body of work on female reproductive morbidity (Hill et al. [1995] provide an extensive review). However, in an effort to rectify the dearth of information on the health and general well-being of women, men's concerns with and connection to reproductive health issues have largely been bypassed.

The biological link between male and female reproductive health status is obvious. Less apparent, but equally important, is the impact of men's knowledge, attitudes, and behavior on women's health. In regions where underlying socioeconomic structures such as kinship and marriage allocate power and authority primarily to men, women are dependent on men for access to food, health services, and other things that contribute positively to health status. Although the causal pathways of influence have been difficult to identify, studies from all over the world have shown that maternal and child health outcomes tend to be poor in areas where female social status is low (Santow, 1995).

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The recent call for a gender-based program of research and services is based on an increasing awareness of the interdependence of female and male health status: If the needs of men with respect to reproductive health education and services are not considered, progress toward better health for people of both sexes will be hampered (Basu, 1996; United Nations, 1995). A gender-based program of research that takes both female and male roles into account will benefit the social and physical health of the entire family and contribute to the empowerment of women (De Bruyn, 1995; Hardon, 1995).

The need for reaching men with reproductive health programs was affirmed at both the ICPD and the Fourth World Conference on Women held in Beijing in 1995 (United Nations, 1995; Khorram and Wells, 1997). International studies from a variety of regions have shown that reproductive health programs are likely to be more effective for women when men are involved in some way (Gordon, 1995; Mbizvo and Bassett, 1996). A study conducted in Bombay found that women made a greater number of antenatal maternal health clinic visits when their husbands had attended an informational session at the clinic, compared with those whose husbands did not attend (Bhalerao et al., 1984). Much research on married couples has focused on outcomes related to family planning. Results of most of those studies demonstrate that when men are actively involved and informed, fertility tends to drop and contraceptive acceptance increases (Becker, 1996). An analysis of male involvement in family planning in five generations of an extended family in South India similarly revealed that the sharpest drops in fertility occurred when men were most involved in family planning decisions (Karra et al., 1997).

In India, where women's autonomy is particularly low, educating and involving men in reproductive health matters may be the only effective means of influencing change in the poor health outcomes of women and girls. Practices that contribute to poor female health status, such as the preferential allocation of food and health resources to boys, are deeply rooted in cultural norms and persist despite changes in other factors known to contribute to women's status. For example, mothers' selective discrimination against girls of higher birth order was observed in Punjab across all educational levels (Das Gupta, 1987). Results of the intergenerational study of the South Indian family demonstrated that male involvement was not dependent upon better interspousal communication, but rather that the participation of men led to progressive changes in the social roles of spouses over time (Karra et al., 1997). This finding suggests that involving men in reproductive health interventions might help foster a better understanding between husbands and wives.

A gender-based approach to reproductive health requires an understanding of both male and female health-related knowledge, attitudes, and behavior. Studies of women in India have indicated that the prevalence of reproductive tract infections among females in the general population is high (Bang et al., 1989; Bhatia et al., 1997; Bhatia and Cleland, 1995; Koenig et al., 1996; Wasserheit et al., 1989). The patterns of sexual behavior for selected populations in India, such as truck drivers and sex workers—those at high risk for the transmission of HIV/AIDS—have become a focus of recent research (Asthana and Oostvogels, 1996; Singh and Malaviya, 1994). Apart from sporadic observations, little is known about the sexual behaviors and reproductive health status of men in the general population (Jaswal and Harpham, 1997). A magazine survey in India that solicited anonymous responses from its readers (upper-class urban Indian men) reported a high prevalence of premarital and extramarital sexual activity among participants (Savara and Sridhar, 1992). A qualitative study noted that in an urban area of India, men were treated so poorly by the medical staff that they resisted seeking health care for infections even when symptoms were persistent (Nataraj, 1994). In order to involve men in their own and in their wives' reproductive health concerns, an understanding of what they know and feel about these issues and what they do about perceived problems is important.

This report is based on the results of a reproductive health survey that was conducted in the northern state of Uttar Pradesh, India, among 6,727 married men. In addition to the more frequently explored topics related to family planning, men were asked about their knowledge, attitudes, and behavior regarding several aspects of reproductive health. The descriptive analyses presented here are based on the data pertaining to men's knowledge of women's health, to their own sexual behavior outside the context of marriage, to their perceptions of conditions of sexual morbidity and their attempts at treatment for specific conditions, and to their opinions concerning the social role of wives. These issues have never before been explored in a large-scale survey in India.

Methods

Data for the Uttar Pradesh Male Reproductive Health Survey (MRHS) were collected from November 1995 to April 1996 in five districts of Uttar Pradesh (UP) that represent the five major regions of the state. The MRHS was the second-phase survey of the Program Evaluation Review for Organizational Resource Management (PER-

FORM) System of Indicators Survey, which had been conducted from June to September 1995 (Tsui et al., 1996). The districts selected for the MRHS were Nainital, Aligarh, Kanpur Nagar, Gonda, and Banda, representing the hill, western, central, eastern, and Bundelkhand regions, respectively. Kanpur Nagar is predominantly urban and includes one of the largest cities in Uttar Pradesh, Kanpur, with 2.1 million inhabitants, according to the 1991 census (Government of India, 1992). The other four districts are primarily rural.

The 1991 population of Uttar Pradesh was 139 million (Government of India, 1992), the largest of any state in India. UP is one of the least-developed states; socioeconomic, demographic, and health outcomes generally lag behind those of the rest of the country. The proportion of households with electricity in the state is only 32 percent, compared with 51 percent in India overall. The proportion of literate inhabitants is also lower, at 42 percent, compared with 52 percent for all India. Fertility is higher: The total fertility rate for UP is 4.8 children per woman of reproductive age, whereas for India, the rate is 3.4 children. Mortality statistics are also comparatively worse. Of all the states of India, UP has the second-highest infant mortality rate (99.9 deaths per 1,000 live births; India: 78.5 deaths per 1,000) and the third-highest child mortality rate (UP: 46.0 deaths per 1,000 live births; India: 33.4 deaths per 1,000). A similar picture exists for maternal health-care statistics: Relative to the rest of India, Uttar Pradesh is worse off; women have less antenatal and delivery care, and rates of childhood immunizations are lower (IIPS, 1995; PRC and IIPS, 1994).

The sampling frame for the MRHS was based on the one used for the PERFORM survey, which was based on a stratified, multistage cluster sampling design that enabled representative indicators to be calculated at the state, regional, divisional, and district levels (Tsui et al., 1996). Currently married men between the ages of 15 and 59 residing in the five selected districts were identified from the household listing and enumeration of the PERFORM survey. The fieldwork was carried out by the same organizations that were responsible for the PERFORM survey. Field teams were composed of three to four male interviewers, an editor, and a supervisor. In total, 8,296 husbands were identified as eligible for interviews and 6,727 were successfully interviewed (83.2 percent). In the main, husbands who were not interviewed were temporarily absent from the household at the time of interview (7.4 percent). Other reasons (8.0 percent) included their no longer residing at the household or their not being contacted after three attempts.

The questionnaire covered a variety of areas pertaining to reproductive health. Basic sociodemographic characteristics and detailed questions about knowledge and use of contraceptives were recorded for each husband. Men were also asked about their beliefs regarding the ability to control fertility and about their attitudes regarding social norms concerning wives. The last sections of the questionnaire addressed men's reproductive health knowledge, the occurrence of sexual morbidity symptoms, and sexual activity.

Data

Descriptive statistics were generated from the portions of the questionnaire that pertained to four major areas: husbands' knowledge about reproductive health issues; their sexual activity outside of marriage; their sexual morbidity symptoms and associated health-seeking behavior; and their attitudes regarding the expected role of wives within the household. These four issues were examined across respondents' selected background characteristics.[1] Information is presented on urban versus rural residence and on the educational level and age of the respondent at the time of interview. A proxy for household economic level was used, based on a count of possessions in the household. Six groups of items were counted: clock or watch, fan, radio or transistor, television, bicycle, and motorized vehicles (motorcycle, scooter, car, or tractor). A score of one was assigned for each group if the household possessed at least one of the items included in it. The scores were then added and categorized into three levels: zero to one, two to three, four or more. The results presented have been weighted, based on household-selection probabilities and levels of nonresponse within districts. Therefore, the data are representative of eligible husbands for each of the five selected districts. Trends and patterns for the total sample are also presented, but because the districts were selected by a convenience sampling procedure, these results should not be generalized to represent all eligible husbands in the state of Uttar Pradesh. Despite this limitation on generalization, the MRHS is the first large-scale survey of its kind conducted in India. The information can be used to describe a general picture of the reproductive health status and characteristics of married men of reproductive age in the region.

Results

The sociodemographic characteristics of the sample appear in Table 1. Overall, about one-fourth of the men interviewed lived in urban areas. This proportion is higher than the 20 percent recorded for UP in the 1991 census (Government of India, 1992), likely the result of

Table 1 Percentage distribution of husbands interviewed, by selected sociodemographic characteristics, according to district of residence, Uttar Pradesh, 1995–96

	District					
Characteristic	**Nainital (N = 1,324)**	**Aligarh (N = 1,176)**	**Kanpur Nagar (N = 1,145)**	**Banda (N = 1,807)**	**Gonda (N = 1,275)**	**Total (N = 6,727)**
Residence						
Urban	24.5	19.3	81.6	6.2	2.0	24.1
Rural	75.5	80.7	18.4	93.8	98.0	75.9
Education						
None	25.5	28.6	19.7	32.1	47.3	31.0
Primary	25.9	18.8	19.3	20.5	25.4	21.9
Middle	17.5	19.4	18.8	15.1	11.5	16.3
High school+	31.0	33.3	42.2	32.3	15.9	30.8
Age group						
15–19	0.7	1.3	0.3	2.5	5.5	2.1
20–29	19.6	24.8	17.4	30.4	30.3	25.1
30–39	38.7	28.8	33.1	33.5	28.4	32.6
40–49	27.8	22.6	25.1	20.1	22.4	23.3
50+	13.2	22.5	24.2	13.6	13.3	16.8
Household assets						
0–1	16.8	24.0	13.2	41.2	47.9	29.9
2–3	34.6	38.9	21.5	43.1	41.7	36.8
4+	48.6	37.1	65.3	15.7	10.3	33.3

including Kanpur Nagar as one of the survey districts. In contrast to the other four districts, the majority of men in Kanpur Nagar (82 percent) live in an urban area; the remaining four districts are more typical of the rest of Uttar Pradesh in the way urban–rural residence varies. Among them, Gonda is the least urbanized (2 percent) and Nainital the most (26 percent).

Apart from Kanpur Nagar, which has the largest proportion of respondents who completed high school (42 percent), the patterns of husbands' educational levels across districts are similar. The lowest proportion of men in the highest schooling category live in Gonda (16 percent). Nainital, Aligarh, and Banda have equivalent proportions of men who are either highly educated or have not attended school (about 30 percent each). The difference between Kanpur Nagar and the other districts is a result of the way educational patterns vary between rural and urban areas; compared with rural areas, larger proportions of individuals living in cities and towns of India tend to be literate and more educated (IIPS, 1995).

Age distributions of respondents were similar for Banda and Gonda, where larger proportions of married men tend to be younger than those in the other three districts. Kanpur Nagar and Aligarh both had the largest proportions of respondents in the oldest categories; about one-half of the men surveyed in these two districts were 40 years old or older. Considerable variation was observed in household assets across the five districts. Both Banda and Gonda have much higher proportions of households in the two lower categories than do the other three districts—nearly half of all Gonda households had no or only one asset. Part of this pattern may be attributed to the similarly low levels of urbanization in these two districts, compared with the remaining three. Urban households are much more likely to have a greater number of the possessions counted in the survey, as exemplified by the large majority of households in Kanpur Nagar (65 percent) that had four or more assets. These differences are important to consider when exploring the reproductive knowledge, attitudes, and behaviors of the husbands surveyed.

Men's Knowledge About Reproductive Health Issues

Husbands were asked when during the menstrual cycle women are most likely to conceive a child and about their knowledge of warning signs of serious pregnancy and delivery complications. Table 2 summarizes what husbands said they knew about these issues. Overall, only 22 percent of husbands responded correctly (from choices that were read to them) that women are most likely to become pregnant two weeks after their menstrual period begins. Most husbands (49 percent) thought that women are most likely to become pregnant one week after the start of their menstrual period (not shown). The urban–rural differential was small, with only a slightly larger proportion of urban (25 percent) versus rural respondents (20 percent) naming the correct period. This knowledge among husbands tended to increase with years of education, but fewer than a third of husbands in the highest category responded correctly. Husbands younger than 20 tended to know less than older men, but little variation was found between the remaining age groups. The proportion of men from

Table 2 Percentage of husbands who responded correctly to questions about reproductive health, by selected sociodemographic characteristics, Uttar Pradesh, 1995–96

		Warning symptoms of pregnancy and delivery complications[a]				
Characteristic	Fertile period	Bleeding	Fever	Swelling of hands/ face	Long labor	Don't know any
Total	21.5	18.1	16.8	11.3	10.3	52.5
Residence						
Urban	24.7	23.7	19.7	13.5	13.4	41.1
Rural	20.4	16.3	15.9	10.7	9.3	56.2
Education						
None	14.4	9.8	12.9	7.9	5.6	68.3
Primary	19.7	15.2	15.5	9.4	8.2	58.4
Middle	22.6	18.6	18.2	11.3	10.2	47.3
High school+	29.3	28.3	21.0	16.2	16.6	35.3
Age group						
15–19	10.9	8.7	13.5	5.9	4.8	72.1
20–29	17.4	15.6	16.6	10.3	9.1	57.2
30–39	23.4	20.2	17.6	12.2	10.1	50.0
40–49	23.7	19.4	15.8	12.2	12.8	50.1
50+	21.9	17.2	17.4	10.8	9.8	51.5
Household assets						
0–1	15.2	13.5	14.5	9.2	7.5	62.1
2–3	19.1	16.3	17.5	11.7	9.1	54.9
4+	29.7	24.2	18.1	12.9	14.2	41.3

[a]Multiple responses are possible.

households with four or more assets that gave the correct response (30 percent) was double that of men from homes with the fewest assets.

According to their spontaneous responses to the survey questions, husbands knew very little about signs of dangerous conditions that can occur during pregnancy or childbirth. As shown in the table, about half of all respondents could not name one warning symptom. Among the husbands who could name one or more signs, the largest number were aware of bleeding (18 percent) and fever (17 percent); only one in ten named swelling of the hands and face or long labor. A fair amount of variation occurred across the selected background characteristics. The urban–rural difference in knowledge was greater for the warning-symptoms responses than for those about the fertile period, with a larger proportion of urban husbands being able to name at least one sign. The inverse trend observed in educational levels was expected: The proportions of men who could not name one symptom decreased in the higher categories of completed schooling. However, more than one-third of the men who had completed high school or more could not name one danger sign. Husbands in the youngest age category were the least informed about these conditions, but little variation was seen among husbands aged 20 or older. The pattern observed for household assets was similar to that for education. Ownership of more assets was associated with lower proportions of respondents who stated that they did not know any symptoms. The patterns of knowledge about the particular symptoms across these factors were similar.

Respondents were also asked whether or not certain facts pertaining to sexually transmitted diseases (STDs) were true or not. Table 3 shows the proportions of men who gave the correct responses about the following statements: Gonorrhea can be contracted only once because individuals become immune to the disease; syphilis can be treated with medication; STDs can pass from mother to baby before or during birth; some people who have STDs show no symptoms at all. Fewer than 30 percent of respondents overall knew that a person with an STD can be asymptomatic and that syphilis can be treated with antibiotics. More than one-half responded correctly to the question pertaining to perinatal STD transmission. Fewer than 20 percent of all men interviewed understood that immunity to gonorrhea is not conferred with a single incidence of the disease.

The differentials observed in the sociodemographic factors were as expected. Except for the statement pertaining to asymptomatic STDs, where little variation was found, larger proportions of husbands in urban areas gave correct responses than did those living in rural areas. The positive association with the level of education across all four statements is clear: Larger proportions of better-educated men answered correctly. However, even in the most highly educated category, men are relatively

Table 3 Percentage of husbands who responded correctly to questions about selected aspects of sexually transmitted diseases, by selected sociodemographic characteristics, Uttar Pradesh, 1995–96

	Statements regarding sexually transmitted disease			
Characteristic	Asymptomatic STD possible	Perinatal STD transmission possible	Syphilis treatable	Immunity to gonorrhea possible
Total	29.3	52.9	29.6	19.7
Residence				
Urban	29.8	57.7	36.0	25.1
Rural	29.1	51.4	27.5	18.0
Education				
None	23.2	46.0	18.7	12.9
Primary	30.2	50.3	27.8	19.4
Middle	28.8	54.0	32.0	17.4
High school+	34.9	61.2	40.5	28.1
Age group				
15–19	31.0	52.4	29.8	17.6
20–29	30.2	50.2	27.5	16.3
30–39	28.9	53.0	29.3	20.3
40–49	28.5	53.6	31.4	21.1
50+	29.2	56.0	30.5	22.5
Household assets				
0–1	25.6	44.1	19.6	15.1
2–3	29.2	51.3	28.8	17.2
4+	32.6	62.7	39.4	26.8

Note: "Don't know" answers were grouped with incorrect answers.

ill-informed about these aspects of STDs; fewer than one-half of men with a high school or higher education gave the correct response to three of the statements. Even less variation was found by age than was observed for the other areas of husbands' knowledge. The pattern for household assets was similar to that for education: Larger proportions of respondents from households with more assets answered correctly.

Sexual Activity Outside of Marriage

Little is known about patterns of sexual behavior outside the context of marriage in India. Because both premarital and extramarital sexual activity lie outside social norms and expectations, this information is difficult to obtain. Reported levels in the survey are likely to be underestimates for the general population of men. These data are especially helpful, however, in elucidating patterns of related behavior among men who report at least a single experience of sexual activity with someone other than their spouse. If a man is willing to report any incidence of this activity, he probably feels comfortable enough to respond to the other questions about it.

Table 4 shows the patterns of husbands' reported premarital and extramarital sexual activity. The majority of men surveyed (84 percent) reported none. Among those who reported any experience, the largest proportion reported having engaged in premarital sex only (12 percent). Very small proportions of men stated that they had had extramarital sex only or both pre- and extramarital sexual contact. About half of the men who reported any extramarital sexual contact said they had had relations with more than one woman. Almost a third stated that they had paid for extramarital sex, and only about one in ten said he had ever used a condom during extramarital sex.

The proportions of husbands shown in Table 4 reporting extramarital sex only or reporting both pre- and extramarital sexual contact were so small that the results across sociodemographic factors should be interpreted with caution. Men in rural areas and those with at least some education were more likely to report experience of sexual contact of any type outside marriage, compared with those living in urban areas and those with no education. A downward trend in age and little variation by the number of assets was observed. The patterns observed for multiple partners, payment for sex, and condom use among men who reported experiencing any extramarital sex were inconsistent, a result which may be due to the small number of men reporting such activity. Both condom use and payment for sex were reported by larger proportions of men in urban than in rural areas. An inverse trend is seen in payment for sex by education, as larger proportions of men with less education reported this type of experience. The opposite was true for condoms: A much larger proportion of better-educated men reported using condoms during extramarital sex, compared with those with no education.

Table 4 Percentage of husbands who reported engaging in sexual activity outside the context of marriage and of those, percentage who said they had multiple partners, paid for sex, and ever used condoms, by selected sociodemographic characteristics, Uttar Pradesh, 1995–96

Characteristic	None (N = 5,637)	Premarital only	Extramarital only	Both types (N = 153)	Multiple partners[a]	Payment ever made[a]	Condoms ever used[a]
Total	83.7	12.2	1.8	2.3	48.0	30.7	12.8
Residence							
Urban	86.1	11.1	1.3	1.5	43.4	35.5	24.4
Rural	83.0	12.5	1.9	2.5	48.7	29.8	10.6
Education							
None	86.9	9.9	1.4	1.8	45.6	41.2	8.8
Primary	82.3	13.2	2.5	2.9	53.0	34.8	6.1
Middle	81.9	12.6	2.5	2.9	41.3	25.0	14.3
High school+	82.7	13.7	1.2	2.5	50.7	23.7	20.0
Age group							
15–19	71.1	19.0	6.3	3.5	(50.0)	(14.3)	(7.1)
20–29	76.5	18.0	1.5	4.0	39.8	38.3	17.2
30–39	82.9	12.7	2.2	2.2	50.0	27.1	11.4
40–49	87.9	9.8	1.1	1.2	55.6	27.0	11.2
50+	92.0	5.0	1.8	1.1	54.5	28.2	6.0
Household assets							
0–1	82.1	13.1	2.5	2.3	51.5	34.0	11.4
2–3	83.1	12.3	1.8	2.8	48.2	27.5	8.0
4+	85.9	11.3	1.2	1.6	44.4	31.7	22.6

Note: Numbers in parentheses are percentages based on fewer than 25 respondents (N = 23). [a]Includes only husbands who reported extramarital sexual experience (N = 273).

Even among the better-educated men, however, only one in five said he had ever used a condom; only 5 percent reported that they always used one (not shown).

Sexual Morbidity Symptoms and Health-seeking Behavior

Men were asked whether they had experienced any of various conditions known to be associated with sexually transmitted disease at three different periods: before marriage, after marriage, and at the time of the interview (currently). If they reported that they had experienced such a condition, they were asked whether they had sought any treatment at the time the condition occurred. Table 5 shows the proportion of men who reported any of six different symptoms at each of the three times, and of those, the proportion who reported seeking some kind of treatment for conditions experienced before or after marriage. Very few men reported that they had experienced these conditions at any time. Only 9 percent of men surveyed stated that they currently had any symptom, 12 percent said they had experienced at least one symptom before marriage, and 13 percent reported that one had occurred after marriage. Some variation was seen across background characteristics among husbands who reported these symptoms. The differences in the proportions of men reporting the occurrence of various conditions were fairly consistent for all three time periods: The smallest proportions were those who reported having a genital sore (before marriage, 2.6 percent; after marriage, 2 percent; currently, 0.4 percent). More men reported symptoms associated with urinating (frequent, painful, or with difficulty) and swelling of the testes or groin across all three time periods (between 2.5 percent and 5 percent). Urethral discharge was more commonly reported as having occurred before marriage (5 percent) than at any other time period. Respondents were also asked whether they had ever had a positive syphilis test during the three time periods (data not shown). Few men reported ever having had a positive test: The proportions were 0.5 percent, 0.4 percent, and 0.2 percent for before marriage, after marriage, and currently, respectively.

Men who reported one or more conditions were also asked whether they had sought any treatment at the time the symptom occurred. Among all individuals consulted, an allopathic[2] practitioner was named by the majority of men for all the different conditions. Others consulted for these conditions included practitioners of traditional systems of medicine, medical shops, and friends. Although general consultation rates were similar for a sexual morbidity condition before and after marriage, the type of practitioner sought for treatment varied between these periods. Overall, men were more likely to consult with allopathic practitioners after than before marriage (not shown).

Only between 60 and 70 percent of men reported that they had sought any treatment for symptoms before or after marriage. Before marriage, men were most likely to have sought treatment for symptoms associated with urination and swelling in the genital area. After marriage, men with genital sores and those who had painful urination were most likely to have sought treatment. Overall, greater numbers of men with symptoms sought treatment when they occurred after marriage.

Table 5 Percentage of husbands who reported symptoms associated with sexually transmitted diseases that they had experienced before marriage, after marriage, and on the day of interview (currently), by type of condition reported, Uttar Pradesh, 1995–96

	Reported symptoms (N = 6,726)			Treatment sought[a,b]	
	Before marriage	After marriage	Currently	Before marriage	After marriage
Any symptom	12.4	13.1	8.9	61.5	63.8
Urethral discharge	5.1	3.3	1.5	60.4	61.9
Genital sore	2.6	2.0	0.4	61.4	75.2
Difficult urination	3.6	4.5	2.4	65.7	68.5
Painful urination	3.8	4.6	2.8	70.9	72.1
Frequent urination	3.2	3.8	2.8	60.7	67.7
Testes/groin swelling	3.3	5.2	4.1	66.7	61.8

[a]Includes only those husbands who reported a symptom: *Before marriage:* (any symptom, N = 834; urethral discharge, N = 341; genital sore, N = 176; difficult urination, N = 239; painful urination, N = 254; frequent urination, N = 214; testes/groin swelling, N = 222). *After marriage:* (any symptom, N = 881; urethral discharge, N = 223; genital sore, N = 134; difficult urination, N = 302; painful urination, N = 308; frequent urination, N = 257; testes/groin swelling, N = 352). [b]Percentage based on whether husband stated that he had sought some type of care when he experienced the reported condition.

Attitudes Regarding Wives' Social Relations

In North India, the patriarchal, patrilocal kinship system allocates power within the household based on the age and sex of its members: Men and older kin have authority over women and younger family members. Because most married women live in some type of extended household that involves one or more of their husband's elder family members, wives are usually dependent on a number of people for decisionmaking, especially if the decision involves going outside the household or spending money. Regardless of her particular household structure, a woman is usually directly responsible to her husband. Through his authority over her, other kin exert their own influence. Therefore, examining the relationship between spouses is critical for understanding the social dynamics that contribute to women's reproductive health status.

The proportion of husbands who agreed to two related statements pertaining to women's decisionmaking autonomy within the household are shown in Table 6 by selected background characteristics. These questions were asked to ascertain men's feelings about their general expectations of wives' social behavior. Questions about their own wives' actual behavior were not asked. Husbands were asked whether or not they agreed that "the wife should always follow instructions given to her, whether she likes them or not, by elders (or husbands), particularly by her in-laws." Husbands' attitudes were more conservative with regard to wives' deference to elders versus themselves, both overall and across all sociodemographic factors. Husbands in urban areas were slightly more liberal in their thinking than were those in rural areas. Husbands having lower levels of education tended to be more conservative. Although a little more than half (54 percent) of husbands who had finished high school or more felt that wives should always follow instructions given by husbands, almost three-fourths (72 percent) of husbands with no schooling felt this way. Little variation was found according to age. The pattern observed for household assets was similar to that for education. As compared with men from households with very few assets, a much lower proportion of men with four or more assets tended to agree that wives should always follow the instructions of elders or husbands. Results were similar for the statement, "There is no harm if the wife sometimes disagrees with instructions given to her by elders (or husbands), particularly by her in-laws." Overall, a slightly lower proportion of husbands felt that it is acceptable for a wife to disagree with instructions given by elders (46 percent) versus husbands (49 percent); this pattern was also observed across regions. The rural–urban split was greater in this instance, and an age trend was found: More older men felt that their wives should have latitude to disagree with elders or themselves. Patterns for education and household assets were similar to what was observed for the previous statement.

Table 6 Percentage of husbands agreeing with statements concerning wives' behavior in relation to decisionmaking power within the household, Uttar Pradesh, 1995–96

Characteristic	Always follow instructions of[a]		No harm if wife disagrees with[b]	
	Elder	Husband	Elder	Husband
Total	67.4	64.4	46.4	49.2
Residence				
Urban	63.7	56.4	60.8	66.7
Rural	68.5	66.9	41.9	43.6
Education				
None	73.5	71.8	40.8	41.5
Primary	72.3	69.2	42.3	46.0
Middle	67.4	64.4	50.1	52.3
High school+	57.8	53.5	53.2	57.4
Age group				
15–19	66.4	66.2	38.0	41.5
20–29	69.2	66.7	43.3	45.0
30–39	68.4	63.9	44.7	48.7
40–49	66.5	64.5	49.8	52.6
50+	64.1	61.6	50.6	52.5
Household assets				
0–1	72.6	72.1	37.2	38.8
2–3	69.7	67.5	41.8	43.9
4+	60.2	54.1	59.8	64.3

[a]The full text of the statement is: "The wife should always follow instructions given to her, whether she likes them or not, by elders (or her husband), particularly by her in-laws." [b]The full text is: "There is no harm if the wife sometimes disagrees with instructions given to her by elders (or her husband), particularly by her in-laws."

Husbands' attitudes about the social norms of wives' behavior may be related to the type of communication that takes place between spouses on reproductive health matters. Little communication occurs on most issues. Husbands who were not using contraceptives (N = 4,053) at the time of the survey were asked if they agreed with a series of statements that would help explain family planning behavior (data not shown). Overall, 37 percent of husbands agreed that "My wife would have a difficult time negotiating with me about using a method of family planning." More husbands living in rural areas (40 percent) felt this way than did urban residents (26 percent). The trends by educational level were as expected, with larger proportions of less-educated husbands than more-educated ones agreeing with this statement (no schooling, 45 percent, high school or higher, 28 percent). Other questions pertained to communication about reproductive morbidity symptoms (not shown). Few husbands (27 percent) who said they had experienced any STD symptom previous to their marriage reported having discussed it with their wives after marriage. The communication from husbands about any particular STD symptom that occurred after marriage was better (68 percent of husbands). Differences were observed in communication about particular conditions after marriage as well. The majority of husbands (86 percent) had told their wives about a positive syphilis test, but a much smaller number of husbands (65 percent) had told their wives about a urethral discharge.

Discussion

Although the results of the MRHS cannot be generalized to all married men of reproductive age in Uttar Pradesh, the sample of husbands in the survey is comparable to the representative sample drawn by the UP National Family Health Survey (PRC and IIPS, 1994).[3] The selection of five districts that represent the five different regions of the state has allowed for an investigation of how men's reproductive knowledge, attitudes, and behavior vary by sociodemographic factors that characterize the UP population. The relatively low levels of development and education in the state have important consequences for the reproductive health status of couples living there. The results of the survey show what we would expect: Men with higher levels of education and higher economic status and those who reside in urban areas tend to know more about reproductive health matters, seek treatment more often, and protect themselves better from STDs than do other men.

Clearly, husbands in these districts know little about reproductive health. Their responses pertaining to the fertile period during the menstrual cycle illustrate that they have scant knowledge of the physiology of reproduction. Even fewer men recognized danger signs of pregnancy and childbirth. This information is particularly disturbing, because all of the symptoms mentioned in the questionnaire are indicative of dangerous conditions that in most cases require immediate medical attention. Maternal mortality is very high in Uttar Pradesh. A hospital-based study in Lucknow, the capital city of the state, recorded a maternal mortality ratio of more than 1,000 maternal deaths per 100,000 live births (WHO, 1991). A community-based estimate for UP was recorded at 599 maternal deaths per 100,000 live births (unpublished estimate from Tsui et al., 1996). Often, the delay in seeking care is the underlying cause of maternal death (Thaddeus and Maine, 1994). Women in Uttar Pradesh are dependent on their husbands and older household members for decisions such as seeking health care (Das Gupta, 1995; Jeffery et al., 1989). If the individuals who have the power to make decisions do not understand when medical attention is needed, women may not get the care they need in time to save their lives.

The findings show that most men know little about sexually transmitted diseases. Although men with higher levels of education are certainly better informed than those with less schooling, the level of their reproductive health knowledge is still extremely low. Almost three-fourths of men who had completed high school or had more schooling thought that immunity to gonorrhea could be conferred by having the disease once, and fewer than half in the highest educational category knew that syphilis could be treated. The same is true for the other sociodemographic categories: Even though men living in urban areas and those from better-off households know relatively more than other men, their level of knowledge is still very low. The results may represent what men have come to know through personal experience or through contact with others. For example, bleeding was the most commonly cited warning sign for pregnancy and childbirth complications. Among the symptoms listed, it is the most obvious and probably the most common (WHO, 1991). The larger proportion of men who responded correctly to the statement about perinatal transmission of STDs may reflect men's belief in the close psychophysical connection between mother and fetus, common in Uttar Pradesh. This explanation seems likely because little variation is seen according to background characteristics in comparison with responses to the other three questions on STDs. Men were not asked how they came to understand (whether correctly or incorrectly) these issues.

The data on reported sexual behavior indicate that some level of premarital and extramarital activity takes place among the general population. That larger proportions of men stated that they had experienced STD symptoms before and during their marriage may imply that the rates of sexual activity outside of marriage are higher than those reported here. The downward trend in age observed in reported sexual activity outside of marriage may be due to a cohort effect, reflecting a change in sexual behavior among men over the past few decades. However, part of this trend may be the result of younger men's reporting sexual activity outside of marriage differently from older men. Because of the difficulty in soliciting information about premarital and extramarital sexual activity in India, the levels reported in the survey should be understood as only a minimum; trends observed across the sociodemographic characteristics must be interpreted with caution.

More important than the particular level is the information learned about the behavior of men who engage in it. The majority of men who reported having had extramarital sexual activity said they had had relations with more than one partner and few said they had ever used condoms. These findings imply that a certain proportion of married women in the general population of Uttar Pradesh is highly vulnerable to STDs, including HIV. This issue becomes even more important when reproductive-health-seeking behavior among men is considered together with the low level of interspousal communication.

Based on the body of research using demographic and validation surveys to record gynecological symptoms among women around the world, a general conclusion has been reached that self-reports should not be used as estimates of disease prevalence (Koenig et al., 1996; Ronsmans, 1996). Several problems affect self-reported symptoms of reproductive morbidity, ranging from illnesses that may not present physical signs to the differences in the way people perceive them. In the MRHS data, recall biases may have affected reported symptoms and resulting health-seeking behavior. Men who sought treatment may be more likely to remember that they had experienced a condition than those who did not. In addition, because information was collected on conditions perceived at any time before or after marriage, the age of the respondents and numbers of years married may have created differentials in recall periods among the study subjects. The three periods during which symptoms could have occurred were probably not of equal length. The greater length of the pre- and postmarital periods compared with the current situation (reported only as the time of interview) surely explains the comparatively lower levels of current symptoms reported by men. If men report the occurrence of a condition, however, they are likely to report correctly whether or not they have sought treatment for it. Self-reported symptoms have been found to be useful for looking at reproductive-health-seeking behavior and assessing community needs (Bhatia and Cleland, 1995; Ward et al., 1997).

Many of the men in Uttar Pradesh who reported some type of reproductive morbidity did not seek treatment, even after marriage, when they could easily have transmitted a disease to their wives. Among those who did try to get care, a sizable proportion went to practitioners of traditional systems of medicine, who may or may not have been familiar with these conditions and the recommended treatment regimens; probably none of them had facilities for laboratory tests. For conditions that arose before marriage, health-seeking behavior associated with the occurrence of reported symptoms was extremely limited. Nataraj (1994) observed that in a Madras clinic, practitioners treated men very badly and spoke disparagingly of their patients to interviewers. These sorts of barriers are difficult for anyone to overcome, but particularly so for unmarried men who are probably more embarrassed and less secure about seeking treatment for such conditions than are married men.

The level of reproductive health knowledge among husbands overall indicates that most do not realize the consequences of their behavior, that is, that their wives could become ill, lose their ability to have children, or even die. Inhibitions for discussing something as difficult as STD symptoms are probably exacerbated both by a lack of understanding of the possible dangers of keeping silent and by the traditional norms concerning women's social roles. Apart from women's being vulnerable to sexually transmitted diseases that may or may not be treated, the low level of information among husbands about serious conditions that can arise during pregnancy and childbirth means that many women are unlikely to receive treatment for these conditions until it is too late. This situation has implications for the growing AIDS epidemic in India, now spreading from high-risk groups to the general population (Pais, 1996). In areas of India where AIDS is thought to be highly prevalent, one study found only one of every six women surveyed had even heard of the disease (Balk and Lahiri, 1997). Clearly, men do not know much more. Because even many better-educated men are not aware of the basic facts of reproductive health and disease transmission, special efforts are needed to reach them. A desperate need exists in Uttar Pradesh for quality reproductive health services that include educational components where practitioners and paramedical personnel treat patients with respect. Community-based programs should be launched in both rural and urban areas to provide information to adults. Proponents of AIDS prevention in India advocate the integration of health- and sex-education classes into school curriculums at appropriate levels, as well as broad-based measures aimed at the general population, rather than at specific risk groups (Asthana, 1996; Verma at al., 1997).

The results of the MRHS survey have revealed a set of factors that contribute to the poor health status of individuals in Uttar Pradesh. Results of the survey not discussed here indicate that men are generally aware of family planning messages and methods, a finding demonstrating that health messages can be disseminated to and understood by the general population. By fostering a good understanding of reproductive health issues, communication between spouses and the health status of families is likely to be enhanced.

Notes

1 Although district of region was not presented as a background characteristic for the variables of interest, considerable variation was observed in men's knowledge, attitudes, and behavior across the five districts. Part of this variation may result from differences in education and urbanization among the districts, but other factors may influence findings as well, such as access to media, health services, or community-based campaigns.

2 "Allopathic" refers to the Western system of medicine.

3 Men's age was used as a basis for comparison between de facto household residents from the Uttar Pradesh National Family Health Survey and the MRHS, for men aged 15–45. For the seven age groups compared, the index of dissimilarity was 0.053.

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Acknowledgments

The results and description of the study presented in this report are based on the final report of the survey project: *Uttar Pradesh Male Reproductive Health Survey 1995–1996*, published by The EVALUATION Project, Carolina Population Center, University of North Carolina at Chapel Hill (1997). Contributors to the report are: Joseph de Graft-Johnson, Amy Ong Tsui, Bates Buckner, Kaushalendra K. Singh, Christina Fowler, Claire Viadro, Julia Beamish, and Maria Khan. The survey project and production of the report were funded by the United States Agency for International Development (USAID). The authors acknowledge the support of the Office of Population, USAID/New Delhi, and the four organizations conducting the MRHS fieldwork—Center for Population and Development Studies (Hyderabad), Operations Research Group, Marketing and Research Group, and the Indian Institute for Health Management Research (Jaipur). The paper also benefited from support from the National Institute for Child Health and Human Development to the Carolina Population Institute.