"Determinants of Knowledge and Opinions About Abortion Law Among Men and Women in Rajasthan, India"

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INTRODUCTION

The Medical Termination of Pregnancy (MTP) Act of 1971 entitled women in India to legal abortion services. This landmark legislation sought to ensure women safe, legal medical services for pregnancy termination for a broad range of socio-medical conditions. However, over thirty years later, a majority of women continue to seek abortion services from unlicensed providers and often in unsafe conditions. Consequently, abortion continues to be a major cause of maternal morbidity and mortality in India.

Even when safe abortion services are available, both individual and public attitudes and opinions about abortion may hinder or facilitate women's access to safe abortion services. Women may seek unsafe abortions because they or their families are unaware that they are entitled to legal services or unfamiliar with the specific conditions under which they may obtain a legal abortion or (Alan Guttmacher Institute (AGI), 1999). In areas where abortion is highly stigmatized, even legal abortion providers may be hesitant to advertise their services. An assessment of information, education and communication materials about abortion in Rajasthan found that some newspapers refused to run advertisements for a clinic offering safe and legal abortion services (Nidadavolu and Bracken, undated). Where there is great stigma attached to an abortion, providers may be hesitant to offer services or demand extra fees for the procedure. Fear of social opprobrium may pressure a woman to hide her abortion from friends and family or seek abortion services secretly from an unsafe provider.

Most studies on public knowledge and attitudes concerning the legality of abortion have been conducted in developed countries (e.g. Boggess, 2000; Henshaw 1982; Singh 1978; Lynxwiler, 1996; Wiggins 1990; Miller 1994). Only a few studies have examined attitudes toward abortion in developing countries (Becker, 2002; Takeshita, 1986) A few studies have examined knowledge and opinions about abortion in India. A survey conducted in Madhya Pradesh found that only nine percent of women knew that abortion was legal and could correctly identify the time period within which it was legal to terminate a pregnancy (Malhotra et al, 2003). Qualitative studies also suggest a lack of knowledge or widespread confusion among both women and men about the legal status of abortion in India (Nair and Krup, 1985). For some, the "legality" of an abortion rested on the women's social standing, specifically her marital status (Clark, unpublished).

In particular, little is known about Indian men's attitudes and knowledge about abortion. Most research has focused on women, the direct consumers of abortion services. However, men clearly play an important role in the decisions of whether, when, where and from whom women seek an abortion. In India, male family members may play a crucial role in facilitating women's access to safe abortion services. Amongst married women, the husband is often the first person consulted about an unwanted pregnancy (Sinha, Khan, Patel et al. 1998). Even when women confide in a female relative or friend first, the decision to terminate an unwanted pregnancy is often made jointly by husband and wife (Ganatra, 1998). Indeed when a woman decides alone to undergo an induced abortion, it may be a result of a woman's lack of decision-making ability in the household, rather than a demonstration of her autonomy (Gupte, Bandewar & Pisal, 1996).

Men may also be instrumental in arranging and facilitating the abortion process -- either through the provision of funds, transportation or moral support.

Both men's and women attitudes and knowledge about the legal status of abortion may affect women's access to safe abortion services. Using data obtained from a community-based survey of women and men in Rajasthan, we explore determinants of women and men's knowledge and opinions about the legal status of abortion. In particular, the paper addresses several questions: Do men and women in Rajasthan know the legal status of abortion in India? What factors are associated with men and women's knowledge of abortion law? What are men and women's opinions about abortion? What factors are associated with conservative or liberal opinions about abortion? The answers to these questions may be particularly important given recent legislative efforts to expand access to abortion services in India.

ABORTION IN INDIA

Before 1971, abortion was a criminal offence in India. The medical termination of pregnancy came under the provision of the India Penal Code of 1862. Under the IPC both the woman and the service provider were help culpable, regardless of the woman's circumstances or will. The only exception existed in cases where a medical emergency threatened a pregnant woman's survival (Chhabra and Nuna, 1994).

The Medical Termination of Pregnancy (MTP) Act of 1971 sought to ensure women safe, legal medical services for pregnancy termination when required. Unlike in many western countries, the liberalization of abortion services in India occurred relatively separate from the women's movement. Rather, the movement to legalize abortion was spearheaded by demographers and physicians. Supporters of family planning and birth control favored liberalization as a means to lower the birth rate. Medical practitioners were concerned with the deleterious effects of abortions conducted by non-qualified, untrained and ill-equipped medical practitioners under unhygienic conditions (Chhabra and Nuna, 1994).

The MTP Act does not repeal the IPC penalizing abortion, but provides additional exemptions (Bandewar, 1998). The Act legalized induced abortion or the medical termination of pregnancy (MTP) on a wide-range of medical and social grounds. Doctors are required to assess the "pregnant women's actual or reasonable foreseeable environment" when granting authorization. MTP can be performed if the medical practitioner believes that continuation of the pregnancy involves risk to the life of the pregnant woman or risk of injury to her physical or mental health. The continuation of a pregnancy could endanger a woman's mental health if the pregnancy resulted from rape or if contraception failed to prevent pregnancy among married women. Termination of pregnancy can also be performed if there is a substantial risk of mental or physical abnormalities in the foetus.

The MTP Act empowered the medical profession with greater legal and normative authority in the provision of abortion services (Jesani and Iyer, 1993). The Act permits termination of pregnancies by registered medical practitioners up to 20 weeks gestational age. Pregnancies up to 12 weeks require the authorization of one doctor. Pregnancies between 12 and 20 weeks require the opinions of two doctors. (Government of India, 1971).

Legally, only certified medical practitioners with appropriate training in gynecology and obstetrics working at authorized health centers may provide abortion services.[1] Since 1972 the number of approved MTP centers has risen dramatically: In 1997 there were 9,467 authorized centers compared to 1,877 at the time of legalization (Ganatra, 1999). Despite abortion's legal status, women still face a number of barriers in obtaining legal abortion services. The regional distribution of certified services varies widely. Only 16 percent of all approved MTP centers are located in Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh, although 40 percent of the nation's population lives in these areas (Khan et al, 1999). Within states, there are also substantial disparities. Although three-quarters of the population live in rural areas, most of these approved centers are located in urban areas (Chhabra and Nuna, 1994).

In 1998, a substantial proportion of the approved primary health clinics (24 to 40) percent had provided MTP services in the past but were not doing so at the time of the survey. Some of these centers (16-52 percent) after having been approved as MTP clinics, never offered the services (Khan et al, 1999). While all community health centers, postpartum centers and similar higher level health facilities are expected to provide abortion services, a situational analysis conducted in Gujarat, Maharashtra, Uttar Pradesh and Tamil Nadu revealed that service provision is uneven across facilities (Barge et al, 1998).

Since 1972, state and central governments have not made a concerted effort to train doctors to provide abortion services. A 1999 study suggests that a paucity of state funds for training, lack of housing facilities at the training institutions and inadequate case loads hinder the training of future abortion providers. At the same time, even with a trained provider, facilities often lack the necessary supplies to consistently provide abortion services (Barge et al, 1998; Khan et al, 1999).

With the poor availability of legal, government-approved facilities, the demand for abortion services is met by a wide array of illegal abortion providers. Studies have estimated the proportion of illegal abortion to be 2-10 times larger than the legal component (Ganatra, 1999). Illegal providers include a vast array of medical practitioners including traditional birth attendants (dais), registered medical practitioners, nurses, physicians qualified in other systems of medicine, allopathic doctors without training in MTP, and paramedics such as Auxiliary Nurse Midwives (ANM). In Rajasthan, a study performed by the Indian Council of Medical Research (ICMR) showed that indigenous providers performed more abortions than government doctors and private doctors *combined* (ICMR, 1989).

Recently, the Government of India has undertaken a number of efforts to increase access to safe abortion services in both rural and urban areas. In 2000, the Government's National Population Policy recommended enhancing it service provision at Primary Health Centers (PHCs). Then, again acting on the recommendations of the NPP, the Drug Controller of India approved mifepristone coupled with the prostaglandin misoprostol, for pregnancy termination in gestation

[1] The Act defines a Registered Medical Practitioner (RMP) as one possessing any recognized medical qualifications as defined in Clause (h) of Section 2 of the Indian Medical Council Act of 1956. The name must be enrolled on the State Medical Register. The medical practitioner must have such experience in gynecology as prescribed by the rules of the Act. Individual states may supplement this Act. R. Chhabra and S. Nuna. *Abortion in India: An Overview*. New Delhi: Ford Foundation, 1994.

of 7 weeks or less. Shortly after approval, four Indian pharmaceutical companies began marketing the drugs to gynecologists nationwide. In May 2003, the rules and regulations governing the MTP were amended to allow certified providers in unregistered facilities to provide medical abortion, assuming they have access to a registered facility for back-up (Government of India, 2003). Each of these efforts mark an important step in increasing access to safe abortion services. However, if women and men are unaware of the legal status of abortion, these efforts may not be fruitful.

DATA AND METHODS

Data are drawn from a cross-sectional community-based survey of a random sample of ever married women aged 15-44 years (n=3,266) and a convenience sample of a sub- group of these women's husbands (n=602) conducted in six purposely selected districts of Rajasthan. This study was conducted as part of a larger evaluation of a national-level organization providing abortion and family planning services in Rajasthan: Three districts were selected where the provider would be opening clinics and providing outreach services were selected as 'experimental' districts. The remaining three 'control' districts were selected based on matching key socio-economic indicators, including population density, literacy rate and sex ratio.

Respondents were selected using multi-stage stratified cluster sampling. In the first stage, the sample was stratified geographically into rural and urban areas. Although Rajasthan is largely rural, urban areas were over-sampled (~60 percent) as the provider's interventions are largely urban-focused. Moreover, as urban areas are more heterogeneous, increasing the size of the urban sample improved the reliability of the estimates for these localities.

In the second stage of sampling, primary sampling units (PSUs) were distributed in district headquarters and villages within a 20-km radius of the district headquarters, and in pre-selected medium-size towns and villages within a five km radius of these towns. The final sample was spread across 25 PSUs in each district, 13 in urban areas and 12 in rural areas. Data collection was completed by a team of male and female investigators from the study area in September and October, 2001.

A total of 3,781 households were approached to participate in the study and household questionnaires were completed in 3,703. In the participating 3,703 households, 3,682 eligible women (ever married between 15-44 years of age) were identified and interviews completed with 3,266 (89 percent). Of the 606 husbands contacted, 602 (99 percent) were interviewed.

The survey documented women's socio-demographic characteristics, reproductive and abortion experiences, knowledge of abortion legislation, attitudes to abortion, preferences for abortion providers, and contraceptive (including emergency contraception) knowledge, attitudes and practices. Information on women's reproductive experiences was obtained through a detailed pregnancy history. The men's questionnaire covered similar topics as the women's questionnaire. However, men were not asked to report in detail on abortions their wives may have had.

Awareness of the legality of abortion was determined using two questions: "As far as you know is abortion legal or illegal?" Respondents answered either "yes", "no" or "I don't know". Respondents who answered "no" or "I don't know" were subsequently asked if a law existed sanctioning abortion, as one exists regarding the permissible age of marriage. If the respondent was aware that abortion is legal in India, or they did not know if abortion was legal but did know that there was a law on abortion, they were considered aware. Respondents who did not respond to the questions were excluded from the analysis.

A summary measure was similarly developed to explore abortion opinions. Respondents were asked under which of eight situations they thought a woman should be able to have an abortion. Of these eight, four were conditions under which abortion is permissible by law in India, including contraceptive failure, rape, endangerment of maternal health, and chance of defect in baby. The other four conditions included not wanting another child, not being able to afford the child, woman is unmarried, and the woman is more than 20 weeks pregnant. Respondents were considered to have liberal views if they supported abortion in six or more of these situations, including all four currently sanctioned by law. Conservatives were defined as those who supported abortion in three or fewer conditions, and only two or fewer of these could pertain to the law. Respondents who were neither conservative nor liberal were classified as moderate.

Logistic regression was used to identify socio-demographic and other characteristics associated with participants' knowledge of the legal status of abortion, separately for women and men. Logistic regression was also used to examine characteristics associated with participants' opinions about abortion law. As we were interested in whether there was an association between knowledge about the legal status of abortion and abortion opinions independent of other covariates, the variable measuring information on the legal status of abortion was forced into the final opinion model, regardless of its significance level. Similarly, the variable measuring a person's opinion about abortion was also forced into the final knowledge model, regardless of its significance level.

The independent variables considered in the analyses were the participant's age, caste, religion, place of residence, socioeconomic status, parity, education or literacy, family planning use, whether the participant or his wife had reported an abortion and familiarity with the practice of sex selective abortion. In order to assess the effect, if any, of the practice of sex selective abortion on women and men's opinions and knowledge, awareness of the practice was included as an independent variable in the models. If respondents knew that it was possible to determine the sex of a fetus, they were asked if they had ever heard of anyone having an abortion because the fetus was female. Those that did know someone who had an abortion under this circumstance were regarded as aware of sex selection, and those that had not, or who did not know that fetal sex-determination was possible, were regarded as unaware of sex selection.

The impact of each independent variable on the three outcomes was investigated at the bivariate level. All independent variables significant in the bivariate models at the .20 level or lower were included in multivariate models. Stepwise selection was used to select variables significant at the .05 level or lower. We tested for evidence of confounding and effect modification. No factors were effect modifiers. All models were considered to have good fit on the basis of the Hosmer-Lemeshow test, Pearson chi-square test and deviance statistic.

RESULTS

Description of the sample

Table 1 provides the description of the sample. Almost two-thirds of both male and female respondents were from urban areas (64 and 61 percent, respectively). Most men and women were relatively well off; only 27 percent of women and 25 percent of men reported a low standard of living. About one-third of each sample were from scheduled castes or tribes, other backward classes and other or upper castes. A greater percentage of men than women were from other or upper castes ($p<.001$).

The women in our sample had a mean age of 30 years. The men in the study were significantly older than the women with a mean age of 34 years ($p<.001$). Both men and women reported having a mean number of 2.7 children. Not surprisingly, there was a great difference in the education level of men and women in the study. Almost 80 percent of men reported that they were able to read and write compared with only 40 percent of women ($p<.001$).

Almost fifty percent of women and 58 percent of men reported that they were currently using family planning at the time of the survey a statistically significant difference ($p<.001$). Only six percent of women and seven percent of men reported they or their wives had experienced an induced abortion in the five years preceding the survey. Most of the men (61 percent) and women (57 percent) knew someone who had undergone a sex determination test and had decided to undergo an induced abortion based on the sex of the foetus.

Abortion knowledge

Based on our composite measure, 17 percent of women and 16 percent of men were aware that abortion is legal in India. Most women who knew abortion was legal also believed that it was legal if the woman was unmarried, the pregnancy was a result of rape, a woman's health was endangered by the pregnancy or there was a chance of defect in the baby. Almost most women (98 percent) and men (94 percent) believed incorrectly that a husband's consent is necessary for a woman to obtain an abortion (not shown).

Table 2 shows the result of bivariate and multivariate analyses of the factors associated with women's knowledge of abortion legality in India. At the bivariate level, literate women were more than twice as likely to have accurate information than those unable to read and write (odds ratios: 2.72). Women living in urban areas and those of a higher standard of living also had increased odds of knowing the correct legal status of abortion. Women who were currently using family planning, had reported an abortion in the last five years or had ever heard of sex selective abortion also were more likely to have correct knowledge. Women with liberal opinions about abortion also had significantly increased odds of knowing the legal status of abortion than women with moderate opinions (odds ratio, 2.07).

After controlling for potential confounders, religion and a higher standard of living were more likely to have accurate information about the legal status of abortion. Literacy and awareness of

the practice of sex selective abortion were also significantly associated with correct knowledge of the legal status of abortion. Women who reported experiencing an abortion in the last five years were also more likely to have correct knowledge when controlling for other socio-demographic characteristics (odds ratio, 1.71). Women with more liberal opinions about abortion also had significantly increased odds of knowing the legal status of abortion than women with moderate opinions (odds ratio, 1.83).

Table 3 shows the result of bivariate and multivariate analyses of the factors associated with men's knowledge of abortion legality in India. At the bivariate level, literacy was associated with increased odds of knowing the legal status of abortion. While correct knowledge of the legal status of abortion was significantly associated with current family planning use among women, men who reported currently using contraception were not more likely to have accurate information. Not surprisingly, men who reported that their wife experienced an induced abortion in the last five years were also more than twice as likely to know the legal status of abortion when compared to men or women who had not reported an abortion (odds ratio: 2.2). Men with liberal opinions about abortion were also almost twice as likely to know the correct legal status of abortion than those with moderate views (odds ratios: 1.78). Results of multivariate analysis reveal that the odds of knowing the legal status of abortion increase with literacy and a history of an induced abortion in the last five years. When controlling for other factors, men with more liberal opinions about abortion were almost twice as likely to know the correct legal status when compared with men with moderate views (odds ratio: 1.81).

Abortion opinions

In our second set of analyses, we examined associations between respondents' socio-demographic characteristics and their opinions of abortion law. Of those respondents included in the summary opinion analysis, 8 percent of women and 9 percent of men were categorized as conservative, 37 percent of women and 39 percent of men were categorized as moderate and 55 percent of women and 52 percent of men were categorized as liberal.

Table 4a shows odds ratios from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of women having conservative, rather than moderate, opinions about abortion. At the bivariate level, higher caste, urban residence and a higher standard of living were associated with decreased odds of conservative, rather than moderate, views on abortion. Literacy, family planning use, knowledge of the practice of sex selective abortion, a history of induced abortion in the last five years and an awareness of the legal status of abortion were also associated with more moderate, rather than conservative, views. Results from the multivariate analyses reveal that the odds of being conservative rather than moderate declined significantly as standard of living increased. The odds of having conservative, rather than moderate opinions, were also significantly lower among women who reported an induced abortion in the last five years (odds ratio, .20). The odds of having conservative, rather than moderate views, were also significantly reduced for women who had ever heard of sex selective abortion (odds ratio, .42) or were aware that abortion is legal (odds ratio, .33).

We also examined factors associated with women having liberal, rather than moderate, opinions about abortion (Table 4b). In the bivariate analyses, caste, place of residence, standard of living

and literacy were all significantly associated with more liberal views. Women who reported currently using family planning or a history of an induced abortion in the last five years were also more likely to have liberal, rather than moderate, views about abortion. Awareness of the practice of sex selective abortion and the legal status of abortion were also associated with more liberal opinions. In the multivariate analyses, there was a significant association between caste and the likelihood of having liberal versus moderate attitudes. Women from other backward classes or other castes were significantly more likely that women from scheduled castes or tribes to hold liberal opinions (odds ratios, 1.29-1.58). Literacy was also significantly associated with liberal opinions about abortion (odds ratio, 1.27). Even when controlling for socio-demographic factors, women who reported having an induced abortion in the last five years, were aware of the practice of sex selective abortion or were aware of the correct legal status of abortion were significantly more likely to hold liberal rather than moderate opinions. By contrast, when compared with women from a lower socio-economic group, only women from a higher socio-economic group were significantly *less* likely to have liberal rather than moderate opinions (odds ratio, .77).

Table 5a provides the result of the bivariate and multivariate analyses of the association between selected characteristics and the likelihood of men having conservative, rather than moderate, opinions about abortion. Only awareness of the practice of sex selective abortion was significantly associated with men having conservative, rather than moderate, opinions about abortion (Table 5a). We also examined factors associated with men having liberal, rather than moderate, opinions about abortion (Table 5b). At the multivariate level, men who were aware of the correct legal status of abortion were significantly more likely to hold liberal rather than moderate opinions (odds ratio, 1.84). By contrast, an increase in standard of living was significantly associated with decreased odds of men holding liberal rather than moderate opinions about abortion (odds ratios, .51-.56).

DISCUSSION

This study is one of the first to examine knowledge and attitudes about abortion law among both men and women in India. Women's knowledge and attitudes of these issues, as well as the opinions of their family and community, may shape women's access to safe abortion services. We found that most men and women were not aware that abortion is legal in India. Our analysis identified several socio-demographic factors associated with women's knowledge of the legal status of abortion including religion, standard of living and literacy. Other variables, including experiencing an induced abortion in the last five years and knowledge of the practice of sex selection were also significant in predicting whether a woman knew that abortion is legal. Men's awareness of the legal status of abortion was significantly associated with place of residence, literacy, and knowledge of sex selection.

While few men and women were aware that abortion is legal, most women and men held opinions of abortion that are as or more liberal than existing law. Among women, a higher standard of living and literacy were associated with conservative, rather than moderate, opinions. Even when controlling for demographic factors, awareness of sex selective abortion, a history of abortion and knowledge of the legal status of abortion were all significantly associated with moderate, rather than conservative opinions, and liberal, rather than moderate, opinions. Women

from a high standard of living were more likely to hold liberal, rather than moderate opinions, when compared to women from a lower standard of living. Literacy and age were also associated with liberal, rather that moderate opinions among women. Among men, awareness of the legal status of abortion was only significantly associated with having liberal, rather than moderate, opinions.

Study limitations

For several reasons, the results of our study may not be representative of the regional or national picture. First, both districts and sampling areas were purposefully selected. Moreover, the women's survey data also was not weighted to account for different response rates among districts in Rajasthan. Finally, the men's sample was a convenience sample and not designed to be representative.

The variable used to measure familiarity with abortion law also has limitations. Even when respondents know that abortion is 'legal' according to government law, they may be unfamiliar with the specific conditions under which a woman is permitted to have an abortion or the particular types of providers and facilities that provide 'legal' abortions. Knowledge of these specific conditions, rather than more general knowledge of legal status, may be more important in determining whether a woman is able to obtain a safe abortion.

Also, opinions about abortion were measured by dividing participants into three groups. Given that the majority of participants held opinions that were either moderate or liberal, this analysis may not accurately assess the particular differences within either of these groups. At the same time, as this study was conducted at a single point in time, our indices do not measure either the strength or consistency of particular knowledge or attitudes. For example, some individuals may be more or less likely to change their attitudes over time and this dynamism is not measured here.

We decided to force the variables for both knowledge of the legal status of abortion and abortion opinions into the final models. However, as these data were collected at a single point in time, it is difficult, if not impossible, to identify causation or the specific nature of the association between dependent and independent variables. That is, respondents may believe abortion is legal if they have more liberal attitudes and think it *should* be legal. Conversely, a respondent could believe abortion is acceptable because they know the state condones the practice.

Our study did not collect data on many other independent factors that may influence either knowledge of the legal status of abortion or opinions about abortion. First, the presence or absence of a legal provider in the area may influence awareness of abortion services and perhaps knowledge of the legal status of abortion. Place of residence also may only serve as a proxy for the actual availability of services. Second, interpersonal factors and a person's social network – including the knowledge and opinions of friends and family – may have greater influence on an individual's knowledge and attitudes. Our study did directly measure the size of a respondent's social network or the respondent's perception of the knowledge and attitudes held by individuals within this network.

Abortion Knowledge

Only 17 percent of women and 16 percent of men were aware of the correct legal status of abortion in India. These findings are slightly higher than the results from community-based surveys from other states in India. A large community-based study in Madhya Pradesh found that almost half of the women thought that abortion was illegal and an additional 36 percent had no idea regarding its legal status (Malhotra et al, 2003).

Regional variation in levels of knowledge may be the result of a number of factors including the availability of abortion services, public information campaigns and media coverage about abortion or topics related to abortion. For example, in recent years, the Government of Rajasthan has been engaged in an information campaign to raise awareness about the Prenatal Diagnostic Techniques (PNDT) Act and the practice of sex selective abortion. The PNDT Act does not forbid sex selective abortion per se. Rather, the Act states that determining and communicating the sex of a foetus is illegal; that genetic tests may only be performed in registered facilities; and the tests only offered to women who have specific medical needs (The Gazette of India, 2003). While the aim of the campaign has been to increase awareness of the legislation, anecdotal evidence suggests that one unintended consequence may be confusion about the legal status of all abortions (Nidadavolu and Bracken, undated). The results of this analysis have important implications for public health interventions aimed to increase utilization of certified abortion providers. Efforts to promote public awareness of the legal status of abortion may have been complicated by the movement to ban sex-selective abortions. Clearly, education efforts need to address this issue and disseminate accurate information to both health care providers and the communities they serve.

Not surprisingly, for both men and women, literacy was strongly associated with correct knowledge of the legal status of abortion. Studies in other low resource countries have also found that level of education is strongly associated with familiarity with abortion law (Becker et al, 2002). Other socio-demographic factors, such as religion and standard of living, were also significantly associated with women's correct knowledge of the legal status of abortion.

Women who reported experiencing an induced abortion in the last five years were also more likely to correctly know the legal status of the procedure. This finding should be viewed with caution, however. The experience of obtaining an abortion may have led them to obtain information about abortion laws. Also, these women may be more likely to believe that abortion *should* be legal because they had the procedure performed. In addition, our study may underestimate the prevalence of induced abortion in the study population as women may be hesitant to report an induced abortion -- particularly if they believe the procedure to be illegal.

For both men and women, awareness of the practice of sex selective abortion was also significantly associated with correct knowledge. These findings are both surprising and suggestive. On the one hand, anecdotal evidence suggests that the campaign against sex selective abortion has contributed to widespread confusion about the legal status of abortion (Nidadavolu and Bracken, undated). Our findings suggest the opposite, however. While our results are only preliminary, it may be that knowledge about sex selective abortion and the legal status of abortion are communicated in a similar fashion. The findings suggest that correct knowledge

may be more associated with social networks and communication between individuals than with broad social or demographic characteristics. Other studies have also found that social networks, rather than socio-demographic characteristics, may be a better indicator of abortion knowledge and opinions (Becker et al, 2002).

Among women, liberal opinions about abortion were also significantly associated with accurate knowledge of the legal status of abortion. On the one hand, those with liberal attitudes about abortion may be more informed about reproductive health issues and seek out information about legal issues. On the other hand, it is difficult to determine the nature of this association because the converse also appears to be true: Those with correct knowledge of legal status are also likely to have liberal rather than conservative opinions about abortion.

Abortion Opinion

A majority of both women and men held moderate or liberal opinions about abortion. While very few men and women in our sample were aware of the legal status of abortion, public opinion appears to be as or more liberal than existing abortion law. Further research is necessary to assess whether there are noticeable differences in support for legal abortion and how these differences among and within different regions and how these differences are related to the availability of abortion services or, particularly with the passage of the PNDT Act, the practice of sex selective abortion.

Our analyses suggest a relationship between standard of living and opinions about abortion. Women from a medium standard of living were significantly less likely than those from a low standard of living to hold conservative rather than moderate views. In addition, when controlling for other factors, women from a high standard of living were significantly less likely than women from a low standard of living to hold liberal rather than moderate views. The findings suggest that women with more extreme opinions – whether liberal or conservative – tend to be from low rather than high standards of living.

By contrast, men from a high or medium standard of living are significantly less likely then men from a low standard of living to hold liberal, rather than moderate, opinions about abortion. There is no significant association between standard of living and the likelihood of having conservative rather than moderate opinions. While men with more liberal opinions appear to be from a low standard of living, socio-economic status may be less important in distinguishing between those with moderate and conservative opinions. These findings are only suggestive, however, as the men's sample was not random.

Awareness of the legal status of abortion was significantly associated with the likelihood of women holding more liberal than moderate and more moderate than conservative opinions about abortion. Among men, correct knowledge was only significantly associated with holding liberal, rather than moderate, opinions. This data does suggest that, particularly among women, knowledge of abortion law may be associated with more liberal opinions toward abortion. However, the data also suggests that facts gained from personal experience – particularly the practice of abortion and sex selective abortion – may also influence women's opinions.

When controlling for socio-demographic factors, women who have reported undergoing an induced abortion in the last five years were significantly more likely to hold moderate, rather than conservative, and liberal, rather than moderate opinions. Similarly, women who were aware of the practice of sex selective abortion were also significantly more likely to hold more liberal views. In both cases, the more personal or intimate knowledge of the experience of abortion or sex selective abortion – including related information about complications – may help to shape women's opinion. It is less clear to what extent these factors influence men's opinions. Further research is necessary to understand how these more personal abortion facts are communicated in men's social networks.

References

Alan Guttmacher Institute (AGI). 1999. Sharing Responsibility: Women, Society and Abortion Worldwide. New York: AGI.

Bandewar, Sunita. 1998. "Menstrual Regulation As An Abortion Method: A Socio-Medical and Legal Evaluation to Explore Its Promotion in India" Paper presented for The State Level Consultation on Issues Related to Safe and Legal Abortion, Pune, June 7, 1998.

Barge S, Khan ME, Rajagopal S, Kumar N, Kumber S. 1998. Availability and quality of MTP services in Gujarat, Maharashtra, Tamil Nadu and Uttar Pradesh: An in-depth study. Paper presented at the International Workshop on Abortion Facilities and Post-Abortion Care in the Context of RCH Programme. New Delhi, India.

Becker, Davida, Sandra G. Garcia and Ulla Larsen. 2002. "Knowledge and Opinions About Abortion Law Among Mexican Youth" *International Family Planning Perspectives*. 28(4).

Bogges, Scott and Carolyn Bradner. 2000 "Trends in Adolescent Males' Abortion Attitudes, 1988-1995: Differences by Race and Ethnicity" *Family Planning Perspectives*. 32(3): 118-123.

Chabra, R. and Nuna, S.C.. 1994. Abortion in India: An Overview. New Delhi: Ford Foundation.

Clark, S., B. Elul, S. Ambardekar et al. "The role of men in their wives' abortion experiences in India" Population Council, unpublished paper.

Cook, Elizabeth Adell, Ted Jelen and Clyde Wilcox. "Measuring Public Attitudes on Abortion: Methodological and Substantive Considerations" *Family Planning Perspectives*. 25(3): 119-121.

Ganatra, B. 1999. "Abortion Research in India: What We Know, and What We Need to Know" in S. Pachauri, ed. *Implementing a Reproductive Health Agenda in India*: *The Beginning*. New Delhi: Population Council.

Ganatra, B. 2000. Abortion research in India–what we know, what we need to know. In: S Jejeebhoy, R Ramasubban, editors. *Women's Reproductive Health in India.* New Delhi, India: Rawat Publications..

Government of India (GOI). 1971 The Medical Termination of Pregnancy Act (Act. No. 34).

Government of India. 2003. The Medical Termination of Pregnancy Rules (amendment).

Gupte, M., Bandewar S. and H. Pisal, 1997. "Abortion Needs of Women in India: A case study of rural Maharashtra". *Reproductive Health Matters*, 9: 77-86.

Gupte, M. Bandewar S. and H. Pisal. 1996. "Womens' Role in Decision Making in Abortion: Profiles from Rural Maharashtra" Paper presented for XIV International Conference on Social Science and Medicine at Peebles, Scotland, Sept 2-6, 1996.

Henshaw, Stanley K and Greg Martire. 1982. "Morality and Legality" *Family Planning Perspectives*. 14(2): 53-55, 59-60.

Indian Council of Medical Research (ICMR). 1991. Illegal abortion in rural areas: A task force study. New Delhi: ICMR.

Jesanti, A. and A. Iyer. 1993. "Women and Abortion" *Economic and Political Weekly*. November 27, 2591-94.

Khan, ME, Barge S., Kumar N. et al. 1999. Abortion in India: Current Situation and future challenges" *In Implementing a Reproductive Health Agenda in India: The Beginning*. Edited by S. Pachauri, New Delhi: Population Council.

Lynxwiler, J. David Gay. 1996 "The abortion Attitudes of Black Women: 1972-1991". *Journal of Black Studies*. 27(2), 260-277.

Malhotra A, Nyblade L, Parasuraman S, MacQuarrie K, Kashyap N, and Walia S. 2003. Realizing Reproductive Choice and Rights: Abortion and Contraception in India. ICRW Research Report. Washington DC: International Center for Research on Women.

Miller, Warren. 1994. "The Relationship Between Childbearing Motivations and Attitude Toward Abortion Among Married Men and Women" *Family Planning Perspectives*. 26(4) 165-168.

Nair PS and Kurup, KB. 1985. "Factors influencing low performance of legal abortion in India: A community Study" *Journal of Family Welfare*. 32(1): 30-40.

Singh, B. Krishna, Peter J. Leahy. 1978. "Contextual and Ideological Dimensions of Attitudes Toward Discretionary Abortion" *Demography*. 3, 381-388.

Sinha, R. M.E. Khan, B.C. Patel, S. Lakhanpal and P. Khanna. 1998. "Decision making in acceptance and seeking abortion of unwanted pregnancies. Paper presented at the International Workshop on Abortion Facilities and Post-Abortion Care in the Context of RCH Program. New Delhi.

Takeshita YJ. Tan Boon, Ann, Areshat H. 1986. "Attitudes towards induced abortion in Peninsular Malaysia – A Guttman scale analysis" *Malaya Journal of Reproductive Health*. 4(2): 73-90.

United Nations. 1993. Abortion Policies: A Global Review. Vol. 2, New York: United Nations.

Wiggins, R.D. K. Ashworth, et al. 1990 "Multilevel analysis of attitudes to abortion" *The Statistican*. 40, 225-234.

Table 1. Percentage distribution of respondents, by selected characteristics, Rajasthan, India

Characteristic	*Women* % n=3250	*Men* % n=600
Caste		
Scheduled caste and scheduled tribe	29.3	30.5
Other backward class	38.6	31.3
Other caste	32.1	38.2
Religion		
Muslim and other	16.9	17.0
Hindu	83.1	83.0
Residence		
Rural	39.5	35.7
Urban	60.5	64.3
Standard of living		
Low	26.6	25.0
Medium	37.9	37.8
High	35.5	37.2
Age		
15-24	27.7	10.7
25-34	42.0	40.5
35+	30.3	48.8
Parity (mean)	2.8	2.7
Literacy		
Unable to read/write	60.6	20.2
Able to read/write	39.4	79.8
Current use of family planning		
No	50.9	42.5
Yes	49.1	57.5
Ever heard of sex selection		
No	42.8	39.3
Yes	57.2	60.7
Abortion History		
No induced abortion in last 5 years	93.7	92.8
Induced abortion in last 5 years	6.3	7.2
Opinion about abortion		
Moderate	37.1	38.8
Conservative	8.4	9.2
Liberal	54.5	52.0
Awareness of abortion law		
Unaware	83.5	84.2
Aware	16.5	15.8
Total	100.0	100.0

Table 2. Odds ratios (and 95% confidence intervals) from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of women being aware of abortion law.

	Bivariate		*Multivariate*	
Characteristic	**Odds ratio**	**p-value**	**Odds ratio**	**p-value**
Caste		0.0001	na	
Scheduled caste and scheduled tribe (ref)	1.00			
Other backward class	1.10 (0.86-1.42)			
Other caste	1.60 (1.25-2.04)			
Religion		0.0943		0.0240
Muslim and other (ref)	1.00		1.00	
Hindu	1.25 (0.96-1.64)		1.37 (1.04-1.81)	
Residence		0.0001	na	
Rural (ref)	1.00			
Urban	1.50 (1.22-1.84)			
Standard of living		<0.0001		0.0077
Low (ref)	1.00		1.00	
Medium	1.43 (1.09-1.88)		1.13 (0.84-1.50)	
High	2.37 (1.82-3.08)		1.45 (1.07-1.97)	
Age		0.6374	na	
15-24	1.00			
25-34	.99 (.79-1.25)			
35-44	1.10 (0.86-1.39)			
Parity	0.97 (0.92-1.02)	0.2070	na	
Literacy		<0.0001		
Unable to read/write (ref)	1.00		1.00	
Able to read/write	2.10 (1.74-2.54)		1.42 (1.14-1.79)	0.0020
Current use of family planning		<0.0001	na	
No (ref)	1.00			
Yes	1.59 (1.31-1.93)			
Ever heard of sex selection		<0.0001		<0.0001
No (ref)	1.00		1.00	
Yes	2.25 (1.83-2.77)		1.66 (1.32-2.08)	
Abortion history				
No induced abortion in last 5 years (ref)	1.00	<0.0001	1.00	0.0015
Induced abortion in last 5 years	2.10 (1.52-2.89)		1.71 (1.23-2.38)	
Opinion about abortion		<0.0001		<0.0001
Moderate (ref)	1.00		1.00	
Conservative	0.26 (0.13-0.51)		0.33 (0.16-0.66)	
Liberal	2.07 (1.68-2.57)		1.83(1.47-2.27)	

Notes: All p-values are from the Wald test. ref=reference group, na=not applicable, because not included in the model. Estimates take into account design effect of clustering by household.

Table 3. Odds ratios (and 95% confidence intervals) from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of men being aware of abortion law.

	Bivariate		*Multivariate*	
Characteristic	**Odds ratio**	**p-value**	**Odds ratio**	**p-value**
Caste		0.6766	na	
Scheduled caste and scheduled tribe (ref)	1.00			
Other backward class	1.29(0.73-2.25)			
Other caste	1.13(0.65-1.95)			
Religion		0.5157	na	
Muslim and other (ref)	1.00			
Hindu	1.22(0.66-2.25)			
Residence			na	
Rural (ref)	1.00	0.6224		
Urban	0.89 (0.57-1.40)			
Standard of living		0.2436	na	
Low (ref)	1.00			
Medium	1.38 (0.75-2.54)			
High	1.65 (0.91-3.00)			
Age		0.8922	na	
15-24 (ref)	1.00			
25-34	1.13 (0.51-2.48)			
35+	1.19 (0.55-2.58)			
Parity	0.99 (0.88-1.12)	0.9540	na	
Literacy		0.0023		0.0100
Unable to read/write (ref)	1.00		1.00	
Able to read/write	2.72 (1.33-5.58)		2.59(1.26-5.3)	
Current use of family plannning		0.4436	NA	
No (ref)	1.00			
Yes	1.19 (0.76-1.86)			
Ever heard of sex selection		0.0038	na	
No (ref)	1.00			
Yes	2.01 (1.23-3.28)			
Abortion History		0.0366		0.0460
No induced abortion in last 5 years (ref)	1.00		1.00	
Induced abortion in last 5 years	2.21 (1.09-4.48)		2.08 (1.01-4.25)	
Opinion about Abortion		0.0319		0.0132
Moderate (ref)	1.00		1.00	
Conservative	0.90 (0.35-2.28)		0.97 (.37-2.49)	
Liberal	1.78 (1.10-2.89)		1.81 (1.11-2.94)	

Notes: P-values from the likelihood ratio test. ref=reference group, na=not applicable, because variable not included in the final model.

Table 4a. Odds ratios (and 95% confidence intervals) from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of women having conservative, rather than moderate, opinions about abortion

	Bivariate		Multivariate	
Characteristic	**Odds ratio**	**p-value**	**Odds ratio**	**p-value**
Caste		0.0008	na	
Scheduled caste and scheduled tribe(ref)	1.00			
Other backward class	0.73(0.54-0.99)			
Other caste	0.50(0.34-0.72)			
Religion		0.2439	na	
Muslim and Other (ref)	1.00			
Hindu	1.26(0.85-1.89)			
Residence		0.0162	na	
Rural (ref)	1.00			
Urban	0.52(0.39-0.69)			
Standard of Living		<0.0001		0.0070
Low (ref)	1.00		1.00	
Medium	0.48(0.35-0.65)		0.58(0.42-0.80)	
High	0.34(0.24-0.49)		0.64(0.43-0.95)	
Age		0.1665	na	
15-24	1.00			
25-34	0.85(0.62-1.19)			
35-44	1.17(0.84-1.62)			
Parity	1.06	0.0929	na	
Literacy		<0.0001		0.0107
Unable to read/write (ref)	1.00		1.00	
Able to read/write	0.36(0.25-0.52)		0.61(0.42-0.89)	
Current Use of FP		0.0003	na	
No (ref)	1.00			
Yes	0.59(0.45-0.78)			
Ever heard of sex selection		<0.0001		<0.0001
No (ref)	1.00		1.00	
Yes	0.31(0.23-0.43)		0.42(0.31-0.57)	
Abortion History		0.0072		0.0301
No induced abortion in last 5 years (ref)	1.00		1.00	
Induced abortion in last 5 years	0.14(0.03-0.59)		.20(.05-.86)	
Awareness of Legality		0.0001		0.0019
Unaware (ref)	1.00		1.00	
Aware	0.26(0.13-0.51)		0.33(0.16-0.67)	

Notes: All p-values are from an adjusted Wald's test, ref=reference group; na=not applicable, because variable not included in the model. Estimates for women take into account design effect of clustering by household.

Table 4b. Odds ratios (and 95% confidence intervals) from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of women having liberal, rather than moderate, opinions about abortion

	Bivariate		Multivariate	
Characteristic	**Odds ratio**	**p-value**	**Odds ratio**	**p-value**
Caste		<0.0001		<0.0001
Scheduled caste and scheduled tribe (ref)	1.00		1.00	
Other backward class	1.36(1.12-1.64)		1.29(1.07-1.57)	
Other caste	1.91(1.57-2.32)		1.58(1.27-1.98)	
Religion		0.4546	na	
Muslim and other (ref)	1.00			
Hindu	0.93(0.76-1.13)			
Residence		<0.0001	na	
Rural (ref)	1.00			
Urban	1.45(1.24-1.69)			
Standard of Living		0.0024		0.0405
Low (ref)	1.00		1.00	
Medium	1.26(1.04-1.53)		1.04(0.85-1.27)	
High	1.41(1.16-1.73)		0.77(0.61-0.98)	
Age		0.0091		0.0225
15-24	1.00		1.00	
25-34	1.27(1.05-1.51)		1.20(.99-1.45)	
35-44	1.32(1.09-1.60)		1.28(1.04-1.56)	
Parity	1.00(.96-1.04)	0.9155	na	
Literacy		<0.0001		0.0131
Unable to read/write (ref)	1.00		1.00	
Able to read/write	1.61(1.38-1.88)		1.27(1.05-1.54)	
Current Use of FP		0.0003	na	
No (ref)	1.00			
Yes	1.32(1.14-1.53)			
Ever heard of sex selection		<0.0001		<0.0001
No (ref)	1.00		1.00	
Yes	1.99(1.71-2.32)		1.76(1.5-2.05)	
Abortion History		0.0010		0.0240
No induced abortion in last 5 years (ref)	1.00		1.00	
Induced abortion in last 5 years	1.69(1.23-2.31)		1.46(1.06-2.02)	
Awareness of Legality		<0.0001		<0.0001
Unaware (ref)	1.00		1.00	
Aware	2.07(1.67-2.57)		1.85(1.49-2.29)	

Notes: All p-values are from an adjusted Wald's test. ref=reference group; na=not applicable, because variable not included in the model. Estimates for women take into account design effect of clustering by household.

Table 5a. Odds ratios (and 95% confidence intervals) from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of men having conservative, rather than moderate, opinions about abortion

	Bivariate		Multivariate	
Characteristic	**Odds ratio**	**p-value**	**Odds ratio**	**p-value**
Caste		0.0614	na	
Scheduled caste and scheduled tribe (ref)	1.00			
Other backward class	0.44(0.19-1.01)			
Other caste	1.04(0.53-2.03)			
Religion		0.3200	na	
Muslim and other (ref)	1.00			
Hindu	0.70(0.35-1.39)			
Residence		0.1790	na	
Rural (ref)	1.00			
Urban	0.66(0.35-1.2)			
Standard of Living		0.1563	na	
Low (ref)	1.00			
Medium	0.64(0.31-1.33)			
High	0.46(0.21-1.01)			
Age		0.8841	na	
15-24	1.00			
25-34	1.19(0.41-3.47)			
35-44	1.02(0.36-2.94)			
Parity	1.05(0.89-1.22)	0.5321	na	
Literacy		0.1211	na	
Unable to read/write (ref)	1.00			
Able to read/write	0.58(0.29-1.13)			
Current Use of FP		0.5375	na	
No (ref)	1.00			
Yes	0.84(0.46-1.52)			
Ever heard of sex selection				
No (ref)	1.00	0.0033	1.00	0.0033
Yes	0.44(0.22-.75)		0.41(0.22-0.75)	
Abortion History		0.9952	na	
No induced abortion in last 5 years (ref)	1.00			
Induced abortion in last 5 years	0.99(0.32-3.08)			
Awareness of Legality		0.8173		0.9250
Unaware (ref)	1.00		1.00	
Aware	0.89(0.35-2.28)		1.04(.40-2.72)	

Notes: All p-values are from the likelihood ratio test, ref=reference group; na=not applicable, na=not applicable, because variable not included in the model.

Table 5b. Odds ratios (and 95% confidence intervals) from bivariate and multivariate analyses of the association between selected characteristics and the likelihood of men having liberal, rather than moderate, opinions about abortion

	Bivariate		Multivariate	
Characteristic	**Odds ratio**	**p-value**	**Odds ratio**	**p-value**
Caste		0.8176	na	
Scheduled caste and scheduled tribe (ref)	1.00			
Other backward class	0.94(0.61-1.44)			
Other caste	1.07(0.71-1.63)			
Religion		0.0840	na	
Muslim and other (ref)	1.00			
Hindu	1.49(0.94-2.36)			
Residence		0.0438	na	
Rural (ref)	1.00			
Urban	0.69(0.48-0.99)			
Standard of Living		0.0128		0.0365
Low (ref)	1.00		1.00	
Medium	0.52(0.33-0.82)		0.51(.32-.81)	
High	0.58(0.37-0.91)		0.56(0.35-0.88)	
Age		0.4422	na	
15-24	1.00			
25-34	0.94(0.52-1.69)			
35-44	0.76(0.43-1.36)			
Parity	0.97(0.88-1.06)	0.4670	na	
Literacy		0.9807	na	
Unable to read/write (ref)	1.00			
Able to read/write	1.01(0.65-1.55)			
Current Use of FP		0.2359	na	
No (ref)	1.00			
Yes	0.81(0.58-1.15)			
Ever heard of sex selection		0.2344	na	
No (ref)	1.00			
Yes	1.23(0.87-1.75)			
Abortion History		0.9127	na	
No induced abortion in last 5 years (ref)	1.00			
Induced abortion in last 5 years	0.96(0.49-1.86)			
Awareness of Legality		0.0171		0.014
Unaware (ref)	1.00		1.00	
Aware	1.77(1.09-2.88)		1.84(1.13-3.00)	

Notes: All p-values are from the likelihood ratio test, ref=reference group; na=not applicable, na=not applicable, because variable not included in the model.