

Pre-marital sexual relations among youth in India: Findings from the *Youth in India, Situations and Needs Study*

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In India, research attention on youth sexual behaviour has increased considerably in recent years. Several small and large scale studies, including the recent National Family Health Survey and the National Behavioural Surveillance Survey have explored pre-marital sexual behaviour of young people. Evidence from these studies indicates that despite socio-cultural taboos, youth in India do engage in pre-marital sex and that for many young people, pre-marital sexual experiences are characterised by multiple partnerships, lack of contraception or condom use and for young women, by coercion as well. Studies that shed light on the correlates of pre-marital sexual experiences among young people are, however, few in India. Drawing on data from a sub-nationally representative study undertaken for the first time in India of key transitions experienced by young people, this paper examines the extent and nature of pre-marital sexual experiences and factors associated with the initiation of pre-marital sexual experience.

Context

Young people (aged 10-24) constituted almost 315 million in 2001 and represent 31% of the Indian population (Office of the Registrar General and Census Commissioner, 2001a). Numbers are projected to increase and peak at around 358 million in 2011 before stabilising at around 336 million by 2026 (Office of the Registrar General and Census Commissioner, 2006). Today's youth are better educated than earlier generations; for example, 31% and 43% of 20-24 year-old women and men, respectively, had completed at least high school in 2005-06, compared to 19% and 38%, respectively, in 1992-93 (IIPS and Macro International, 2007; IIPS, 1995). A substantial proportion of young people, including young women are absorbed into the formal or informal labour market (Office of the Registrar General and Census Commissioner, 2001b). Moreover, youth live in an increasingly urbanised and globalised society. At the same time, adolescence occurs earlier than in previous generations; for example, evidence from different parts of the country indicates that girls experience puberty at younger ages than in the past (Khanna and Kapoor, 2004; Sengupta, Gogoi and Chetry, 1996; Chakraborti and Sinha, 1991; Singh and Malhotra, 1988). In addition, although the transition to marriage continues to occur early both for young women and men, age at marriage is clearly rising among younger cohorts (IIPS and Macro International, 2007). These changes provide an expanded window of opportunity for opposite-sex interactions, including the formation of pre-marital romantic and sexual partnerships for young people in India. Indeed, evidence from a growing body of research indicates that between one in seven and one in three young men and fewer than one in ten young women had ever engaged in pre-marital sex (Abraham and Kumar, 1999; Alexander et al., 2006; Awasthi, Nichter and Pande, 2000; Brahme et al., 2005; Collumbien, Das and Bohidar, 2001; Jaya, Hindin and Ahmed, 2008; IIPS and Macro International, 2007; Jejeebhoy and Sebastian, 2004; National Institute of Medical Statistics and National AIDS Control Organisation, 2008; Potdar and Koenig, 2005; Pradhan and Ram, 2007; Ram, Bhat and Dwivedi, 2007; Santhya, Jejeebhoy and Ghosh, 2008; Sujay, 2009).

Although studies on pre-marital sexual behaviour of young people have increased considerably in India in recent years, these studies differ substantively and methodologically. Just a couple of studies were nationally representative, a few were representative of districts in which they were conducted and almost all others were small-scale studies. Some focused on community-based samples of unmarried and married youth, while others focused on institution-based samples of special groups such as college students or young men seeking treatment for sexually transmitted infections. Hence, findings from most of these studies were not intended to be generalised to the country as a whole.

Studies differ in their approaches for gathering data on sexual behaviour as well. Most studies including the nationally representative studies such as the National Family Health Survey and the National Behavioural Surveillance Survey relied on just face-to-face interviews, although it is known that gathering data on sensitive behaviours through face-to-face interviews is especially prone to social desirability bias (Fenton et al., 2001; Ghanem et al., 2005; Gregson et al., 2002; Kissinger et al., 1999; Richman et al., 1999; Mensch et al., 2008; Potdar and Koenig, 2005). Few others that have used different approaches to minimize such biases (Alexander et al., 2006; Jaya, Hindin and Ahmed, 2008; Potdar and Koenig, 2005; Santhya, Jejeebhoy and Ghosh, 2008) are not nationally representative. Indeed, there are no studies in India that are sub-nationally or nationally representative and that have used a combination of approaches to minimize reporting biases with regard to pre-marital sexual behaviour of young people. The *Youth in India: Situation and Needs* study from which data presented in this paper were drawn is an exception; the study has used the face-to-face interview approach as well as anonymous reporting, using the sealed envelope approach.

While existing studies have documented the prevalence of pre-marital sexual experiences among young people in India, little work has been done to explore the factors that hasten young people's transition to sexual life before marriage. Much of the evidence currently available comes from studies conducted largely in developed countries or African countries among the developing nations. Indeed, an extensive search of such databases as JSTOR, POPLINE and PUBMED located just two studies that shed light on factors associated with pre-marital sexual initiation among young men and pre-marital physical intimacy, including sex among young women in India (Abraham and Kumar, 1999; Alexander et al., 2007). There is clearly a need for further research to gain a better understanding of the factors associated with pre-marital sexual initiation among young people in India.

The literature currently available suggests that a number of individual, family, peer and community level factors are associated with pre-marital sexual experiences among young people. At the individual level, studies suggest that education is inversely associated with the initiation of pre-marital sex (Alexander et al., 2007; Gupta, 2000), while engaging in economic activities is directly associated with it (Abraham and Kumar, 1999; Kayembe et al., 2008; Rich and Kim, 2002). Self-efficacy in sexual matters and engaging in pro-social activities are inversely correlated with initiation of pre-marital sex (Ramirez-Valles, Zimmerman and Newcomb, 1998; Tenkorang and Maticka-Tyndale, 2008), while substance use is directly correlated with it (Alexander et al., 2007; Coker et al., 1994; Devries et al., 2009; Fatusi and Blum, 2008; Kayembe et al., 2008; Liu et al., 2006; Mott et al., 1996).

At the family level, such factors as co-residence with a parent, parental disapproval of pre-marital sexual activities, and parental connectedness tend to prevent or delay pre-marital sexual initiation among young people, although the associations are found to be significant more often for young women than young men (Babalola, Tambashe and Vondrasek, 2005; Jaccard, Dittus and Gordon,

1996; Kayembe et al., 2008; Liu et al., 2006; Markham et al., 2003; McLanahan and Bumpass, 1988; Ramirez-Valles, Zimmerman and Newcomb, 1998; Romer et al., 1994). Evidence is, however, mixed with regard to the association between parental communication and pre-marital sexual initiation (Babalola, Tamashe and Vondrasek, 2005; Jaccard, Dittus and Gordon, 1996).

Youth sexual behaviours are also influenced by peer-related factors such as the norms espoused by, and behaviours of friends. For example, young people who believe that their peers are sexually experienced are more likely than others to be sexually experienced (Murray et al., 1998). Additionally, studies from India suggest that greater peer acceptance of pre-marital sex and increased frequency of peer contact are directly associated with pre-marital sexual initiation (Abraham and Kumar, 1999; Alexander et al., 2007).

Evidence also suggest that such community level factors as neighbourhood poverty are directly associated with pre-marital sexual initiation among young people (Ramirez-Valles, Zimmerman and Newcomb, 1998).

Study setting

The study was conducted in both rural and urban settings of six states in India, namely Andhra Pradesh, Bihar, Jharkhand, Maharashtra, Rajasthan and Tamil Nadu. Young people in these states together account for 39% of the total youth population in the country (Office of the Registrar General and Census Commissioner, 2001a). Distributions of the youth population in these states taken together by age, level of literacy, religion, caste and marital status were similar to that of the youth population nationally.

Nonetheless, we note that the six states differed in many respects. Andhra Pradesh, Maharashtra and Tamil Nadu are among the more economically progressive states in the country, accounting for 7-13% each of the national Gross Domestic Product, while Bihar, Jharkhand and Rajasthan are among the lesser developed states, accounting for 2-4% each (Ministry of Statistics and Programme Implementation, 2008). Maharashtra and Tamil Nadu are among the most urbanised states, with over two-fifths of their populations living in urban areas. In contrast, Bihar, Jharkhand and Rajasthan are characterised by large rural populations, with just one-tenth to one-fifth of their populations living in urban areas (Office of the Registrar General and Census Commissioner, 2001c). These states also represent settings in which women's status is particularly low and gender relations particularly inegalitarian. Child marriages are extremely common in Andhra Pradesh, Bihar, Jharkhand and Rajasthan and somewhat common in Maharashtra; between two-fifths and two-thirds of young women aged 20-24 were married before age 18 in these five states, compared to just over one-fifth in Tamil Nadu. Likewise, the percentage of 15-19 year-old girls who had begun childbearing ranged between 14% and 28% in these five states, compared to just 8% in Tamil Nadu (IIPS and Macro International, 2007). HIV prevalence among women attending antenatal clinics ranged from zero percent in Jharkhand to 1% in Andhra Pradesh (NACO, 2008).

Methodology

Study design

The study comprised three phases: a pre-survey qualitative phase, a survey and post-survey in-depth interviews with selected survey respondents. Data presented in this paper are drawn from the survey.

The survey focused on married and unmarried young women and unmarried young men aged 15-24 and, because of the paucity of married young men in the younger ages, married young men

aged 15-29. The study treated rural and urban areas as independent sampling domains and a systematic, multi-stage sampling design was adopted to draw sample areas independently for each of these two domains. In order to avoid potential risks associated with interviewing both women and men from the same primary sampling unit (PSU)¹, interviews were conducted in separate but neighbouring PSUs for female and male respondents. In each PSU, households to be interviewed were selected by systematic sampling. Within each selected household, no more than one married and one unmarried respondent was interviewed. In case more than one married or unmarried respondent was found in the household, one respondent was selected randomly, and no replacement of the respondent selected was allowed.

Fieldwork was undertaken in two phases (in Jharkhand, Maharashtra and Tamil Nadu during 2006-07 and Andhra Pradesh, Bihar and Rajasthan during 2007-08). A total of 174,037 households were enumerated and a total of 50,848 young people were successfully interviewed from these households (13,912 married young women, 17,362 unmarried young women, 8,052 married young men and 11,522 unmarried young men). Response rates for individual interviews were in the range of 84-86%.²

The development of the survey instrument was informed by other survey instruments and insights obtained in the pre-survey qualitative phase; the questionnaire was finalized after extensive pre-testing. Of relevance to this paper, the questionnaire contained questions on background characteristics, parental interaction, gender role attitudes and self-efficacy, awareness of sexual and reproductive matters, connectedness and friendship, pre-marital sexual relationships, marriage processes and married life, and substance use and violence.

Acknowledging that young people may have been reluctant to disclose pre-marital sex, a behaviour perceived as socially unacceptable, we undertook several measures to reduce potential under-reporting. First, pre-survey focus group discussions probed the vocabulary used by youth to describe their romantic relationships and the nature of situations in which sex was experienced, and the survey instrument, correspondingly, adapted the scenarios and terminologies described by youth while framing the questions related to romantic and sexual relationships. Second, the instrument sought to ask potentially sensitive or embarrassing questions in a gradual way (e.g. nature of interaction with same-sex friends, nature of interaction with opposite-sex friends, romantic and sexual experiences). Similarly, questions probing respondents' experiences with physical intimacy were posed on a continuum, starting with hand-holding and extending to sexual relations. Third, sexual experiences in romantic relationships were asked separately from experiences within other relationships. Fourth, the study included three approaches to elicit data on sexual behaviours – face-to-face interviews, anonymous reporting of respondents' own experiences via reporting in a sealed envelope³ and anonymous third-party reporting of peer experiences⁴. Finally, efforts were made to ensure that youth were comfortable revealing sensitive behaviours. Interviewers were young and trained to build rapport, discuss sensitive experiences in

¹ In rural areas, a Primary Sampling Unit (PSU) refers to a village or a group of several small villages and in urban areas it refers to a census enumeration block.

² The main reason for non-response was that the respondent was not at home; fewer than one percent of respondents refused to participate in the interview.

³ At the conclusion of the interview, youth were asked to mark a blank card indicating whether or not they had ever experienced pre-marital sex, place the card in an envelope, seal it and return it to the interviewer. Respondents were informed that the envelope would not be opened in the field, and that only the principal investigators would be able to link the information provided in the envelope with what was provided in the main body of the questionnaire.

⁴ The respondents were probed about romantic and sexual experiences of up to five same-sex friends.

empathetic and matter-of-fact ways and generally make respondents feel comfortable about the topics to be discussed during the interview. As far as possible, interviews were held at times and places that assured the respondent maximum confidentiality. In cases in which family members attempted to participate in or overhear the interview, another interviewer was called upon to conduct an informal discussion or interview with other family members so as to ensure privacy for the interview.

Data presented in this paper are restricted to married and unmarried young women and men aged 15-24, i.e., married young men aged 25-29 were excluded in the analysis. A total of 31,274 young women and 14,281 young men constituted the sub-sample used for analysis presented in this paper.

Variables

To derive age at initiation of pre-marital sex, the key outcome indicator used in the analysis, respondents were first asked whether they had ever engaged in sexual intercourse with a romantic partner. They were also asked whether they had ever experienced sexual intercourse with other partners, including casual partners and spouse before marriage, and in situations characterised by force and exchange of gifts or favours, and for young men, with same-sex partners, sex workers and married women as well. Married respondents were asked to recall the situation prior to marriage. All those who reported pre-marital sexual experiences with any of these partners or in any of these situations were further probed about the partner with whom they first experienced sexual intercourse and the age at which they experienced sexual intercourse for the very first time. We recognise that the frequently used indicator of pre-marital sex, namely, the proportion of youth reporting pre-marital experience, is fraught with methodological limitations, including, for example, the fact that we are capturing experiences of youth at different ages and thus with various lengths of exposure in the ages 15-24. While we do present this indicator, we focus our analysis on a more rigorous measure, that is, cumulative percentages of youth who experienced first pre-marital sex at selected ages (among all youth in the sample) calculated using life table techniques, with censoring taking place at the time of marriage for married youth and at the time of the survey for unmarried youth. For youth who reported pre-marital sex only through the anonymous sealed envelope method, age at first premarital sex was imputed conservatively, using age at marriage (for the married) and current age (for the unmarried) as age at initiation of pre-marital sex.

Our selection of explanatory variables is informed by the available literature discussed earlier. At the individual level, we included educational attainment as measured by years of schooling successfully completed, work status (defined as ever worked with or without pay before age 15), place of residence, religion (categorized into Hindu, Muslim and others) and caste (categorized into scheduled tribes, scheduled castes, other backward castes and general castes). Also included is a variable measuring young people's experience of substance use; respondents were asked whether they had ever consumed alcohol or drugs.

Four indicators, namely, peer connectedness, frequency of peer interaction, pre-marital sexual experience of peers and youth norms regarding non-acceptance of pre-marital sex were used to measure the influence of peers on youth sexual behaviours. Peer connectedness was measured by a dichotomous variable indicating whether young people would confide in a peer on problems with friends or boy-girl relationships. Respondents aged 20 and above were asked to recall the situation when they were about 15-18 years of age. Frequency of peer interaction was captured by responses to a single question on how frequently respondents went out with their same-sex friends (for the married, before marriage). Pre-marital sexual experience of peers was captured by anonymous third-party reporting in which respondents reported the sexual experiences of up to

five same-sex peers (for the married, peers before marriage). Youth norms regarding non-acceptance of pre-marital sex were based on responses to a question pertaining to whether they agreed that engaging in pre-marital sex will ruin a girl's future, and individual responses were aggregated at the primary sampling unit level to construct this measure. The index case was removed while aggregating individual responses (the jackknife method).

We included mother's education, parental connectedness, extent of parental disapproval of social interactions with opposite-sex peers, witnessing of parental violence and experience of violence while growing up to explore the influence of parental or family level factors on young people's sexual behaviours. Mother's education was measured by a continuous variable indicating the highest level of schooling successfully completed. Parental connectedness was measured by a dichotomous variable indicating whether young people would confide either in their father or mother on problems with friends or boy-girl relationships. Again, respondents aged 20 and above were asked to recall the situation when they were about 15-18 years of age. Parental disapproval of social interactions with opposite-sex peers was measured by an index that took into consideration young peoples' responses to questions on whether their father or mother would be angry if youth brought opposite-sex friends home, talked to an opposite-sex person from outside the home, went to a film etc with opposite-sex friends or had a love marriage. Married respondents were asked to recall the situation before marriage. For this index, the normalised score obtained from factor analysis was used in the multivariate analyses. The question on witnessing parental violence probed whether respondents had ever witnessed their father beating their mother, and the question on their experience of violence probed whether respondents had ever been beaten by their father or mother since the age of 12.

To capture community level effects on youth sexual behaviours, we included a variable indicating the economic status of the village/urban ward in which respondents were residing at the time of the interview. We first calculated the respondent's household economic status (measured by a wealth index, composed of household asset data on ownership of selected durable goods, including means of transportation, as well as a number of amenities. The wealth index was constructed by allocating appropriate scores to a household's reported assets or amenities and the value of the index ranged from 0 to 54). To calculate the economic status of the village/urban ward, we aggregated individual scores at the primary sampling unit level, removing the index case (the jackknife method). We note that information on household economic status before marriage was not collected for the married, and hence, this measure of economic status of the village/urban ward should be treated as a proxy, especially for married young women.

Finally, to account for socio-economic and cultural differences among study states described earlier, a variable indicating region was also included in the multi-variate analyses (categorized into northern states comprising Bihar, Jharkhand and Rajasthan, southern states comprising Andhra Pradesh and Tamil Nadu, and the western state of Maharashtra).

Analysis

Univariate analysis was first carried out to calculate the proportion of sexually experienced young women and men, the proportion of youth reporting multiple partner relations, ever use of condoms, consistent use of condoms and sex by force or coercion, and the proportion reporting selected individual, peer and family characteristics. Gender differences were assessed using chi-square tests or t-tests, depending on the type of variable under consideration.

Correlates of age at pre-marital sexual initiation were assessed separately for young women and men, using Cox proportional hazards regression analysis, an approach considered best suited for censored observations.⁵

Results

Selected characteristics of surveyed youth, presented in Table 1, suggest that young women and men were on average similarly aged (mean of 19.3). Young women were about as educated as young men (median years of schooling of 8 and 9 years). Distributions by work before age 15, place of residence, religion and caste were also similar among young women and men. Young women were, however, less likely than young men to report ever use of alcohol or drugs (1% versus 18%).

Significant gender differences were apparent in peer-related variables. Young women were considerably less likely than young men to report peers as confidantes on problems with friends or boy-girl relationships (52% versus 87%), frequent peer interaction (7% versus 16%) and peers who were sexually experienced before marriage (7% versus 22%). Youth norms about pre-marital sex remained traditional among both young women and men; even so, more young women than men adhered to such norms (mean score of 0.94 versus 0.82).

Gender differences were evident in most parental or family level variables as well. For example, young women were more likely than young men to report parents as confidante on such matters as problems with friends or boy-girl relationships (48% versus 43%). They were, moreover, more likely than young men to report that their parents would disapprove social interactions with opposite-sex peers; for example 85% of young women compared to 70% of young men reported that their parents would disapprove three of the four activities probed in the survey (not shown in tabular form). In contrast, young women were slightly less likely than young men to report having ever witnessed parental violence and considerably less likely than young men to have experienced beating at the hands of their parents (19% versus 47%). Over half of the mothers of both young women and men had received no formal education.

Finally, findings suggest that the majority of youth, irrespective of sex, resided in economically poor villages or urban wards (mean score 17-18).

Extent of pre-marital sexual experiences

Findings indicate that 4% of young women and 15% of young men had ever experienced sex before marriage (Table 2). Specifically, pre-marital sex occurred in a romantic relationship with a person of the opposite sex for 2% of young women and 8% of young men. In addition, 2% of married young women and men each reported sex with their spouse before marriage (some of these include youth who had sex with a romantic partner whom they later married). Forced sex and sex in exchange for money or favours were rarely reported (0.5% or less). Casual sex was reported by hardly any young women (0.2%) and 2% of young men. Additionally, less than 1% of young men reported same-sex relations, while relations with sex workers and married women were reported by 1% and 3% of young men, respectively.

A comparison of any pre-marital sexual experience reported in face-to-face interviews and via the anonymous sealed envelope format suggests that 2% or fewer youth who had not admitted sexual experience in the face-to-face interview did so in the anonymous format. In other words, 27% of young women and 17% of young men who reported sexual experience did so only in this more

⁵ Preliminary analysis did not reveal any substantial violations in the proportionality assumption

anonymous format. Overall, it would appear that the sealed envelope technique did indeed enable a considerable number of sexually active young women and men who opted not to disclose their sexual experiences in face-to-face questioning the opportunity to do so.

Age at initiation of pre-marital sex

Figure 1 presents cumulative percentages of youth who had experienced first pre-marital sex by selected ages. Findings indicate that young women tended to initiate pre-marital sex later than young men and that notable increases in initiation of pre-marital sexual activity occurred as young people transitioned from early adolescence (before age 15) to late adolescence (before age 20) to young adulthood (before age 25). While just 0.4% of young women and 0.6% of young men initiated pre-marital sex before age 15, 5% of young women and 11% of young men experienced first pre-marital sex before age 20. Finally, 10% of young women and 30% of young men had initiated pre-marital sex before age 25.

Extent of uninformed, unsafe and unwanted sexual experiences

Findings confirm that many young people had initiated sexual activity uninformed (Table 3). For example, just three-fifths of young women and two-fifths of young men who were sexually experienced before marriage knew at the time of the interview that a woman can get pregnant at first sex. In-depth awareness of contraceptive methods was also somewhat limited, particularly among sexually experienced young women. While 76% of young women who were sexually experienced before marriage had heard of condoms, just 40% knew that one condom can be used for only one sexual act. Among young men, the corresponding percentages were 95 and 85. Likewise, awareness of sexually transmitted infections, including HIV/AIDS was limited among sexually experienced youth, especially among young women. Just three-quarters of young women who reported pre-marital sexual experiences had ever heard of HIV/AIDS, over one-quarter had comprehensive knowledge of HIV/AIDS⁶ and about one-fifth had ever heard of STIs other than HIV. Among young men, while the majority had heard of HIV (91%), only 43% of young men reported comprehensive knowledge of HIV/AIDS and just 26% had ever heard of STIs other than HIV.

Findings show that where pre-marital sex was experienced, it was by and large unsafe. Of those who were sexually experienced before marriage, over one-fifth of young women and one-quarter of young men had sex with two or more partners. Ever use and consistent use of condoms were also limited. Of youth who had experienced pre-marital sex, only 7% of young women and 27% of young men reported that they had ever used a condom in their pre-marital sexual relationships, and 3% of young women and 13% of young men reported that they had always used a condom.

Pre-marital sexual experience was non-consensual for substantial minorities of young people, particularly young women. Of those who had engaged in pre-marital sexual relations, as many as 18% of young women reported that they were forced to engage in sex, and 33% reported that they were either persuaded or forced to engage in sex. The corresponding percentages among young men were 3 and 6, respectively.

Correlates of age at initiation of pre-marital sex

Findings from the multivariate analyses suggest that a number of individual, peer and family level factors were significantly correlated with the initiation of pre-marital sex among young women

⁶ Comprehensive awareness is defined as knowledge of two ways of preventing HIV (specifically, condom use and single partner relations), rejection of common misconceptions about HIV transmission (namely, that HIV can be transmitted through mosquito bites, sharing food or hugging) and awareness that one cannot tell by looking at a person whether he or she has HIV.

and men (Table 4). At the individual level, better educated youth were less likely than the less educated to have engaged in pre-marital sex (hazard ratio of 0.96 and 0.98 for women and men, respectively). Conversely, youth who reported ever use of such substances as alcohol and drugs were more likely than those who did not to have engaged in sex before marriage (hazard ratio of 2.06 and 1.57 for women and men, respectively). A few other individual level factors were correlated with age at pre-marital sexual initiation among either young women or men. For example among young women, those who had engaged in paid or unpaid work before age 15 were more likely than those who had not to report pre-marital sexual initiation (hazard ratio of 1.66). In contrast, young women belonging to scheduled castes, other backward castes and general castes were less likely than those belonging to scheduled tribes to have engaged in pre-marital sex (hazard ratio of 0.70, 0.52 and 0.60 for scheduled caste, other backward caste and general caste, respectively). Among young men, those residing in rural areas were more at risk of pre-marital sexual initiation than their urban counterparts (hazard ratio of 1.55).

Of the peer level factors, youth who reported having friends who were sexually experienced before marriage were more likely than those who did not to have initiated sex before marriage (hazard ratio of 5.74 and 3.91 for women and men, respectively). Additionally for young women, frequent peer interaction was found to be directly correlated with pre-marital sexual initiation (hazard ratio of 1.47 and 2.01 for young women who went out with peers sometimes and often, respectively).

Associations between parental level factors and age at initiation of pre-marital sex were found to be significant more frequently for young women than men, although some of the associations were significant for both. For both young women and men, mother's education was inversely associated with pre-marital sexual initiation (hazard ratio of 0.97 and 0.98, respectively). Conversely, witnessing parental violence was directly associated with initiation of pre-marital sex among young women and men (hazard ratio of 1.38 and 1.16, respectively). Additionally among young women, those who confided in their parents on problems with friends or boy-girl relationships were less likely than others to have initiated sex before marriage (hazard ratio of 0.80). In contrast, those who experienced beatings at the hands of their parents since the age 12 were more likely than those who did not to have initiated sex before marriage (hazard ratio of 1.26).

Findings also highlight community level influences on the timing of initiation of pre-marital sex; the risk of sexual initiation before marriage was lower among youth residing in wealthier villages or urban wards, compared to those from poorer villages or urban wards (hazard ratio of 0.97 and 0.98 for women and men, respectively).

Finally, findings suggest regional variation in the risk of sexual initiation before marriage among young men after controlling for other confounding factors. Compared to young men in northern states, those in southern and western states were less likely to report pre-marital sexual initiation (hazard ratio of 0.55 and 0.77, respectively). No such differences were apparent for young women.

Discussion

Findings highlight that a considerable proportion of young men (15%) and a small minority of young women (4%) had engaged in pre-marital sex, Cumulative percentages of youth who had experienced pre-marital sex at various ages suggest that pre-marital sexual initiation occurred in adolescence (before age 20) for one in 20 young women and one in 10 young men and in young adulthood (before age 25) for one in 10 young women and almost one in three young men. For the majority of these youth, such experiences occurred within romantic relationships. Findings

also suggest that many sexually experienced youth had engaged in sexual relations poorly informed about sexual and reproductive matters. Sexual relations, moreover, were unsafe for the majority and unwanted for significant minorities, especially of young women. While fewer young women than men had engaged in sexual relations, those who had done so were evidently more vulnerable than were young men. They were less likely to have in-depth awareness of sexual and reproductive matters, almost as likely as young men to have multiple partners, less likely to have ever used a condom, or to have used one consistently, and more likely to have experienced sex by force or persuasion.

Our study has identified a number of correlates of sex before marriage, evidence about which is sparse in India. Findings underline the importance of education in delaying sexual initiation before marriage among both young women and men, as observed in other studies (Alexander et al., 2007; Gupta, 2000). It is likely that better educated youth spend more of their youth under the direct supervision of gatekeepers – parents and teachers – than do those who discontinue their education prematurely; and that they are more reluctant than others to deviate from social norms relating to pre-marital sexual initiation. Findings that early transition to work roles was directly associated with sexual initiation before marriage among young women may be attributed to increased independence from parents and wider opportunities for engaging in adult behaviours on the one hand and to the vulnerability to sexual exploitation of young women belonging to lower economic strata who tend to initiate work in childhood or early adolescence on the other. Our finding that pre-marital sex is more likely to be observed among working young women than others concurs with observations from studies conducted in other settings (Kayembe et al., 2008; Rich and Kim, 2002). These findings, taken together, underscore the need for investing in schooling for young people on the one hand and enforcing existing laws on prohibition of child labour more vigorously on the other.

While studies conducted in African and Latin American countries have observed that urban residence is directly associated with age at initiation of pre-marital sex (Gupta, 2000; Mahy and Gupta, 2002), our findings suggest that rural residence was directly associated with initiation of sex before marriage for both young women (though not statistically significant) and men. We believe that this may be attributed to the greater opportunities for privacy in rural areas. These findings underscore that programmes intended to delay sexual initiation before marriage must pay special attention to young people in rural areas.

Findings that young women belonging to scheduled tribes were more likely than others to have engaged in sex before marriage may be attributed partially to more liberal attitudes towards pre-marital sex observed among tribal populations in India (Nag, 1996). It may also be attributed to a tendency among young women belonging to other castes and their families to conform to norms that place high value on pre-marital chastity and sexual fidelity among women as a symbol of the family's 'honour'.

Substance use was directly associated with the initiation of sex before marriage among both young women and men. We note that our measure of substance use may or may not actually reflect substance use prior to pre-marital sexual initiation; however, our findings are consistent with several previous studies (Alexander et al., 2007; Coker et al., 1994; Devries et al., 2009; Fatusi and Blum, 2008; Fergusson and Lynskey, 1996; Kayembe et al., 2008; Liu et al., 2006; Mott et al., 1996). This may reflect young people's risk-taking tendencies or personality, including the tendency to act in unconventional ways (Donovan, Jessor and Costa, 1991).

Findings highlight the role of peers in influencing the timing of pre-marital sexual initiation, as observed in several studies (Abraham and Kumar, 1999; Alexander et al., 2007; Murray et al.,

1998). Having peers who were sexually experienced before marriage was directly associated with initiation of sex before marriage among both young women and men, as was frequent peer interaction for young women. We note that it is not possible to disentangle from our data set whether or not young people had chosen peers whom they perceived to be similar to themselves in terms of sexual behaviour and attitudes. However, the possibility of peer support enabling young people to defy traditional norms and to engage in nonconformist behaviours cannot be ruled out. These findings emphasize that sexual and reproductive health programmes for young people must aim to evolve new youth norms about safe practices and engage peers who could serve as positive role models.

Findings underscore the role that a supportive family environment plays in delaying the onset of pre-marital sex, findings corroborated in several other studies (Babalola, Tambahe and Vondrasek, 2005; Jaccard, Dittus and Gordon, 1996; Kayembe et al., 2008; Liu et al., 2006; Markham et al., 2003; McLanahan and Bumpass, 1988; Ramirez-Valles, Zimmerman and Newcomb, 1998; Romer et al., 1994). The mother's education was found to be a protective factor for both young women and men, and our findings are consistent with previous studies (Miller and Sneesby, 1988; Thornton and Camburn, 1987). It is likely that educated mothers have greater educational aspirations for their children and may discourage them from engaging in activities, including pre-marital sexual activity that might affect realization of those aspirations. Moreover, having parents as confidantes on such matters as problems with friends or boy-girl relationships appeared to delay the initiation of pre-marital sex for young women and men (though not statistically significant for the latter). Conversely, those who reported parental violence were more likely than others to have initiated sex before marriage. These findings clearly underscore that efforts must be made to create a supportive family environment for young people. Programmes are needed that address parental inhibitions about sexual matters with their children and that encourage greater openness and interaction between parents and children.

Also evident was the influence of community-level factors on youth sexual behaviours. The economic status of villages or urban wards in which young people resided was inversely associated with sexual initiation before marriage for both young women and men. Several studies conducted in the United States have reported similar findings and have suggested that these findings may reflect the lack of positive role models and lack of parental supervision for youth residing in poor neighbourhoods (Brewster, 1994; Browning, Leventhal and Brooks-Gunn, 2004; Ramirez-Valles, Zimmerman and Newcomb, 1998).

Findings that young men in southern and western states were less likely than those in northern states may be attributed partially to the considerable investment made by these states in programmes to raise awareness of HIV and related risk behaviour and promote safe sex practices among the general population, including young people. It may also reflect differences in sexual norms and practices; for example, though not extensively documented, there exists some evidence that the special relationship often observed between a young man and his elder brother's wife in some parts of north India provides young men opportunities for pre-marital sex with married young women in their family (Ramasubban, 1992; Nag, 1996). Indeed, a larger proportion of young men in northern than southern and western states in our study reported a married woman as their pre-marital sexual partner.

Finally, it is notable that our study shows considerable gender differences in correlates of age at initiation of pre-marital sex; the associations between both peer- and parent-level factors and age at initiation of pre-marital sex were found more often to be significant for young women than young men. We argue that young women may be more likely than young men to require peer support in order both to deviate from social norms and also to obtain opportunities to meet their

romantic partner. Moreover, at the family level, unmarried young women are far more likely to be secluded than young men and therefore far more likely than young men to spend time at home and with parents; their behaviours, thus, may be more responsive to parental supportiveness. As such, they may be likelier than young men to conform to social norms when relations with parents are close and deviate from them when they are not.

Limitations

The study had a number of limitations. Although the opportunity for reporting pre-marital sex anonymously via the sealed envelope approach did indeed enable a considerable number of sexually active young women and men who opted not to disclose their sexual experiences in face-to-face questioning the opportunity to do so, we note that, as in many studies, pre-marital sexual experience may have been under-reported, particularly by young women. Moreover, among young men, it is possible that sex worker, exchange, forced and same-sex relationships were under-reported.

We also note that given the cross-sectional nature of our study, it is not possible to infer causation; however, in some cases – notably parental or family level factors – temporal ordering tends to suggest causality.

Conclusion

Despite these limitations, our study makes several new and important contributions to understanding the correlates of age at initiation of pre-marital sex among both young women and men about which information is scant in India. Programmatically, findings underscore the need for sexual and reproductive health interventions to target not only young people but also their peers and the influential adults in their life, including parents. Methodologically, the study emphasises the need to continue the search for appropriate methodologies to measure sensitive behaviours among youth as well as the need for prospective or panel study designs that capture the ways in which the situation and experiences in adolescence influence their life courses at later ages.

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Table 1: Selected background characteristics of surveyed young women and men

Characteristics	Women (N=31,274)	Men (N=14,281)
Mean age	19.3	19.3
Median years of schooling completed	8	9
Worked before age 15 (%)	29	28
Residing in urban area (%)	29	30
Religion (%)		
Hindu	83	85
Muslim	10	10
Other religion	7	5
Caste (%)		
Scheduled castes	21	20
Scheduled tribes	7	9
Other backward castes	50	49
General castes	21	21
Ever used alcohol or drugs (%)***	1	18
Reported having peers as confidante (%)***	52	87
Reported frequent peer interaction (%)***	7	16
Reported peers who were sexually experienced before marriage (%)***	7	22
Youth disapproval of pre-marital sex (mean score)***	0.94	0.82
Reported having parents as confidante (%)***	48	43
Index of parental disapproval of social interactions with opposite-sex peers (mean normalised score)*	0.76	0.64
Witnessed parental violence (%)*	21	23
Experienced violence at the hands of parents (%)***	19	47
Median years of schooling completed by mothers	NC	NC
Economic status of village/urban wards (mean score)	17.0	17.6

Note: NC – Median not calculates as more than 50% had no formal education; * gender difference was significant at $p \leq 0.05$ level; ***gender difference was significant at $p \leq 0.001$ level

Table 2: Percentage of youth who reported pre-marital sexual experiences with any partner and via different reporting methods

Pre-marital sexual experiences	Women (N=31,274)	Men (N=14,281)
Type of partner		
Opposite-sex romantic partner	2.2	7.9
Spouse before marriage (among the married)	1.6	1.9
Someone who forced respondent to have sex	0.5	0.4
Someone in exchange for money/ favour	0.1	0.2
Casual partner	0.2	1.8
Girl whom respondent forced	NA	0.4
Same-sex partner	NA	0.3
Sex worker	NA	1.4
Married woman ¹	NA	3.2
Reporting methods		
Face-to-face interview	2.5	12.4
Anonymous format (sealed envelope)	3.1	12.2
Face-to-face interview or anonymous format	3.5	14.8

Note:¹ Sex with a married woman excludes sex with wife before marriage

Figure 1: Cumulative percentage of youth by age at first pre-marital sexual experience

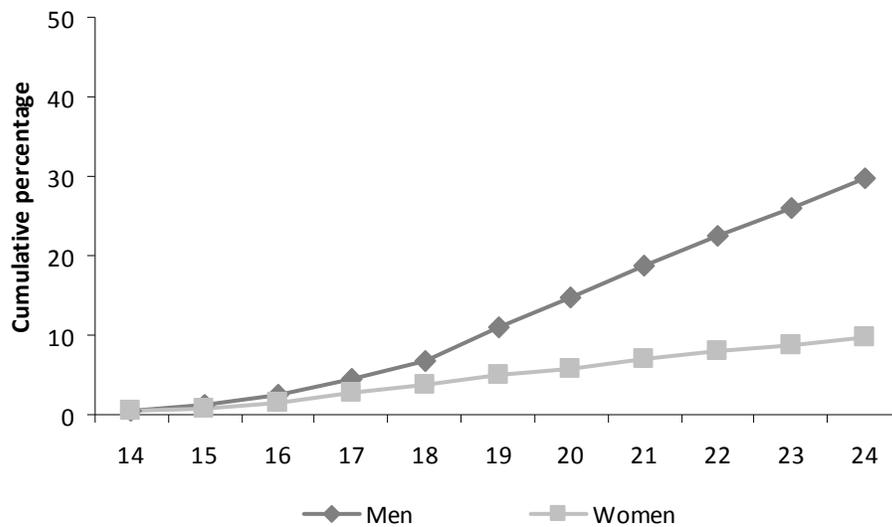


Table 3: Extent of uninformed, unsafe and unwanted sexual experiences among youth who ever experienced pre-marital sex

Of those who reported pre-marital sexual experience via face-to-interview or anonymous format:	Women (N=1,070)	Men (N=1,944)
Knew that a woman can get pregnant at first sex***	59	43
Heard of condoms***	76	95
Knew that one condom can be used for only one sexual act***	40	85
Heard of HIV/AIDS***	75	91
Had comprehensive knowledge of HIV/AIDS***	29	43
Heard of STIs other than HIV***	18	26
Of those who reported pre-marital sexual experience in face to-face interview:	Women (N=821)	Men (N=1,587)
Reported 2 or more pre-marital sexual partners	22.0	24.5
Reported ever use of condoms in pre-marital sex***	6.8	26.7
Reported consistent condom use with pre-marital sexual partners***	2.5	12.7
Experienced forced sex***	18.4	3.0
Experienced sex by force or persuasion***	32.6	5.9

*Note: ***gender difference was significant at $p \leq 0.001$ level*

Table 4: Correlates of age at initiation of pre-marital sex

Factors	Women (N=31,268)		Men (N=14,265)	
	Hazard ratio	95% confidence interval	Hazard ratio	95% confidence interval
Years of schooling successfully completed	0.959***	0.94 – 0.98	0.976**	0.96 – 0.99
Worked before age 15 (ref. not worked)	1.655***	1.37 – 2.01	1.064	0.92 – 1.23
Rural residence (ref. urban)	1.255	0.97 – 1.62	1.547***	1.33 – 1.80
Religion				
Hindu (ref)				
Muslim	0.868	0.60 – 1.25	1.033	0.83 – 1.28
Others	0.861	0.66 – 1.12	1.110	0.89 – 1.38
Caste				
Scheduled tribes (ref)				
Scheduled castes	0.698*	0.52 – 0.93	1.145	0.91 – 1.45
Other backward castes	0.524***	0.39 – 0.70	0.888	0.71 – 1.11
General castes	0.596**	0.42 – 0.85	0.776	0.59 – 1.03
Substance use (drug/alcohol) (ref. no substance use)	2.060***	1.38 – 3.09	1.572***	1.40 – 1.76
Having peers as confidante (ref. No)	1.131	0.94 – 1.36	1.157	0.92 – 1.45
Frequency of peer interaction				
Never (ref)				
Sometimes	1.473***	1.18 – 1.84	1.015	0.79 – 1.30
Often	2.012***	1.50 – 2.70	1.331	0.99 – 1.79
Having peers who are sexually experienced before marriage (ref. No)	5.739***	4.80 – 6.86	3.914***	3.47 – 4.42
Youth disapproval of pre-marital sex	0.335	0.07 – 1.66	0.873	0.58 – 1.32
Mother's education	0.970*	0.94 – 1.00	0.978*	0.96 – 1.00
Having parents as confidante (ref. No)	0.795**	0.68 – 0.93	0.901	0.80 – 1.01
Index of parental disapproval of interactions with opposite-sex peers	0.773	0.58 – 1.03	0.856	0.72 – 1.02
Witnessed parental violence (ref. No)	1.380***	1.16 – 1.65	1.162*	1.02 – 1.32
Experienced violence in adolescence (ref. No)	1.258*	1.05 – 1.51	1.078	0.97 – 1.20
Economic status of neighbourhood	0.973*	0.95 – 1.00	0.984*	0.97 – 1.00
Regions				
Northern (ref)				
Southern	0.989	0.77 – 1.27	0.545***	0.46 – 0.65
Western	0.836	0.62 – 1.13	0.773**	0.64 – 0.93

Note: * difference was significant at $p \leq 0.05$ level; ** difference was significant at $p \leq 0.01$ level;

***difference was significant at $p \leq 0.001$ level

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