within marriage. Finally, if all married couples who are not seeking to conceive use condoms regularly, 60 million condoms will be needed, and only 3% of the unmet need will be for nonmarital sex.

Discussion

Study Limitations

Levels of condom use presented in this study are estimates; their precision is affected by the sample size, the accuracy of reporting of sex and condom use, and the study design (particularly, the exclusion of certain high-risk groups, a lack of information on consistency of use and the limited age range). Some estimates used in calculating average numbers of condoms per man were based on small numbers, but errors are random in nature and the effect should be minimal and should not lead to bias.

Underreporting of sex outside marriage cannot be ruled out, because strong social norms restrict free discussion of sexual behavior in India. To compensate, interviewers were very well trained; all were involved in qualitative fieldwork preceding the survey and were comfortable talking about sexual practices. One indication that underreporting may not be a serious problem in our study is that while the levels of extramarital and premarital sex we found in Orissa (8% and 27%, respectively) are low, they are about double those reported in the only other Indian study among a representative sample of married men, in Uttar Pradesh (4% and 15%). Our survey estimates are consistent with the findings of the qualitative study that preceded the survey, which showed that sexual encounters outside marriage are mostly unplanned and that opportunities to meet partners and have sex are limited. Once men admit to having nonmarital partners, they are not likely to underreport their coital frequency. Even if the proportion of men having sex outside marriage is underestimated, sex with nonmarital partners remains a fraction of marital sex.

A household-based sample could underestimate sex outside marriage by excluding those who may have more opportunity to engage in activities outside social norms. The relatively low levels of sexual activity reported by the small convenience sample of students and migrant laborers refutes this assumption. However, in a study at stopping points along highways through states including Orissa, 40% of truck drivers reported having paid for sex in the previous year. Although occupational groups with such high levels of sexual activity were missed in our study, they constitute only a small proportion of the total population.

Another concern is the level and consistency of condom use. We probably overestimate use by assuming one condom for every marital sex act. A question asking men about use during the last marital sex act could have overcome this bias by indicating the proportion of encounters in which a condom was used, but such a question was not asked.

The use of condoms during the wife’s periods is an interesting finding. In India, menstrual blood is considered impure and polluting, and is believed to have properties that lead to “illnesses of heat.” It is commonly expected that couples avoid sex during menstruation. The question on condom use during menstruation was asked only of current but inconsistent users. Other men may use condoms to protect themselves from the impurities of menstrual blood, while not reporting use for family planning. This use would partially offset less-consistent use by other men.

Consistency of use for nonmarital sex is not affected, since average use was extrapolated from the proportion of last encounters in which a condom was used. However, condoms used for anal intercourse with other men were not included. Nevertheless, even allowing for underreporting, protection during anal intercourse is low and condom use outside marriage would rise only slightly with the inclusion of men having sex with men.

The age range 18–35 was chosen because risky sexual behavior tends to peak before age 30, and the contraceptive demand for spacing (i.e., for reversible methods) is particularly strong for women younger than 30, but diminishes quickly afterward. Our data confirm this and clearly show that both premarital and extramarital activity peak before age 30. Premarital sex before age 18 or after age 35 is negligible. Since condoms for nonmarital sex were used mainly by single men, the balance for men older than 35 would tip even more toward use within marriage.

The magnitude of these potential biases is unknown. In a “worst-case” simulation, respondents could underreport nonmarital sex by 50%, the sample could miss 5% of the population having nonmarital sex at 20 times the rate of the men interviewed and men having sex with men could have anal intercourse five times per month. Under these conditions, estimated levels of sexual activity and condom use outside marriage would nearly triple. Furthermore, if inconsistent condom users among married men used condoms half the time, total use within marriage would be reduced by 20%. These four adjustments would shift condom use from 10% outside marriage to nearly 29%.

However, men older than 35 do have sex and use condoms. This is by far the largest bias and counteracts the others. A conservative estimate of the total number of condoms used by men older than 35 would equal the number used by men aged 30–35. In this case, use within marriage would increase by half and use outside marriage by 3%. Imposing all five worst-case assumptions would bring condom use for nonmarital sex to a maximum 20% of total use. It is probably less, and mainly determined by the last two assumptions. If inconsistent use is lower than 50%, and use by older men higher, condom use outside marriage could easily be less than 10% of total use.

Despite the above limitations, our study provides some of the best available data for looking at condom use. The finding that only 10% of condoms are used for