

A Knowledge, Attitudes and Practices Survey regarding Sex, Contraception and Sexually Transmitted Diseases among Commerce College Students in Mumbai

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ABSTRACT

Introduction: One in four Indians is a juvenile. Sexual crimes, pre marital sex, sexually transmitted diseases and unwanted pregnancies are on the rise. It has been shown that lack of sexuality education can significantly contribute to the above.

Aim: We conducted this study to determine the knowledge and awareness of college students regarding sex and related matters and the factors affecting the prevalent outlook and practices of youth towards the same.

Methodology: A prospective cross-sectional survey was conducted amongst 500 students of the K.P.B. Hinduja College of Commerce from December 2012 to March 2013 as per the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

Main Outcome Measures: 1. Sex knowledge scores of males and females regarding contraception, sexually transmitted diseases and HIV/AIDS.

2. Percentage response of males and females to questions depicting attitudes and perceptions regarding premarital sex and promiscuity, sexual fantasy and masturbation, unwanted pregnancies and contraception.

3. Responses depicting participant's premarital and high risk sexual activities.

Results: The mean age was 18.6 ±1.6 years, 46% of participants were female. The total sex related knowledge scores of males and females were 8.2±1.2 and 6.2±2.4 (p<0.0001), respectively. 84% males and 72% females disagree that virginity should be preserved till marriage. Premarital sex was reported by 48% males and 18% females. Out of those who had premarital sex, 68% males and none of the females had more than one sex partner and 21% males and 12% females had used a contraceptive during their sexual encounter. 87% males and 82% females disagree that sex education in secondary schools will cause a rise in premarital intercourse. 40% males and 13% females are of the view that birth control is primarily a female's responsibility. 14% of males and 21% of females (p = 0.2) reported being forced to have sex.

Conclusion: Participants, especially females, lacked basic information about sexuality and related concepts. Male participants had a very casual attitude towards having sex with multiple partners. Premarital sex is more common than once believed. In the light of our finds and the current scenario, sexuality education is indispensable in order to guide the youth to develop and adopt healthy and appropriate sexual practices.

Keywords: Epidemiology, HIV/AIDS, Sexuality education, Sex offences, Safe sex

INTRODUCTION

There are about 300 million young people aged 10-24 in India, that is, one amongst every 4 Indians [1]. Mumbai is one of the most westernized cities in India, but talking or discussing about sexual practices is still considered a taboo in majority households. Between these two contrasting scenarios is the youth of Mumbai, whose attitudes toward sex have been changing dramatically with premarital sex and high-risk sexual behaviours becoming commoner than ever [2]. Studies have revealed that premarital sex among teenagers is as high as 60% [3,4].

Increase in the incidence of premarital sex leads to an increase in unwanted pregnancies, abortion morbidity/mortality, sexually transmitted diseases (STDs), secondary infertility and the development of cervical abnormalities in adolescents [5]. Adolescents who become sexually active enter an arena of high-risk behaviour that can lead to physical and emotional damage [6].

Sexual assault and rape cases are on the rise in India. Rape cases have doubled between 1990 and 2008 and in 2012, almost 25,000 rape cases were reported across India [7]. Research has shown

a link between the rise of sexual crimes and the lack of sexual awareness and education among other factors [8].

Thus, in the current scenario, sexuality education and awareness are paramount. Sexuality education comprises of physiological, psychological and social issues related to sex, a lack of which may lead to inappropriate attitudes and practices. Sex education can help children transform into well-adjusted adults with established sexual identity, functioning, and ability.

Previous studies have revealed a less than satisfactory awareness and attitudes towards sexuality and also that the educational background plays a role with the overall knowledge of science students being better compared to that of the commerce and arts students [3,9].

Keeping the above in mind, we conducted this study with the following objectives:

- To determine the knowledge and awareness regarding various aspects of sex.
- To determine the factors affecting the above.
- To provide baseline data that can help in formulating a comprehensive sexuality education program for college students.

Gender	Male (n=270)	Female (n=230)	Total	p value
Score component (Mean ± SEM)				
Contraception	2.03±0.44	1.80±1.26	1.92±0.85	<0.0001
STD	2.80±0.82	2.30±0.43	2.55±0.63	<0.0001
HIV transmission	3.37±0.23	2.10±0.21	2.74±0.22	<0.0001
Total sex knowledge score	8.20±1.2	6.20±2.4	7.20±1.8	<0.0001

* Each correct answer was scored as one point and incorrect as zero. Each of the three sections had four questions, thus total maximum and minimum possible scores were 12 and 0, respectively.

[Table/Fig-1]: Sex related knowledge scores of commerce college students (n=500)

Gender	Male (n= 270)			Female (n=230)			p value	CMLE Odds ratio - n (L,U)
	A (%)	N (%)	DA (%)	A (%)	N (%)	DA (%)		
Questions and responses of participants	16	0	84	28	0	72	0.042*	0.5 (0.2,0.9)
Agenda related to premarital sex and promiscuity								
Virginity should be preserved until marriage.	16	0	84	28	0	72	0.042*	0.5 (0.2,0.9)
Premarital sex is acceptable if the couple is engaged.	86	6	8	63	9	28	0.0005	-
A man loses respect for a woman who has had premarital sex.	48	14	38	51	38	11	0.09	-
Sex education in secondary schools will cause a rise in premarital intercourse.	13	0	87	18	0	82	0.33*	0.7 (0.3,1.5)
Easy access to birth control information and devices encourages promiscuity.	22	0	78	25	15	60	0.62*	0.9 (0.4,1.6)
Pornography, X-rated movies and erotic literature contribute to promiscuity.	44	0	56	23	52	25	0.002*	2.6 (1.4,4.9)
Agenda related to sexual fantasy and masturbation								
It is dangerous to fantasize about sex.	12	0	88	30	28	42	0.002*	0.3 (0.2,0.7)
Those who masturbate are emotionally disturbed	56	0	44	19	61	20	<0.0001*	5.4 (2.9,10.4)
Masturbation causes weakness	64	0	36	30	62	8	<0.0001*	4.2 (2.3,7.5)
Agenda related to premarital pregnancy and contraception								
Birth control before marriage is a female responsibility.	40	12	48	13	25	62	<0.0001	-
Condoms should be available in vending machines in all public toilets.	59	13	28	6	78	16	<0.0001	-

[Table/Fig-2]: Responses of participants, commerce college students (n=500), to various questions depicting sex related attitudes and perceptions
A=Agree, N= Neutral, DA= Disagree; CMLE Odds ratio (L, U) - Conditional maximum likelihood estimate of Odds Ratio (Upper limit, Lower limit).

* Calculated using Mid-P exact test, others calculated using Chi square test

METHODOLOGY

After the Institutional Ethics Committee approval, a prospective cross-sectional survey was conducted amongst 500 commerce students of the K.P.B. Hinduja College of Commerce from December 2012 to March 2013 as per the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. Assuming a prevalence rate of sex related knowledge

to be 30%, and for a permissible error of 5% and 98% confidence levels, the calculated sample size was 445. Hence, we decided to collect 500 completed questionnaires for which we had to administer 538 questionnaires. The analysis of data was done from these 500 completed questionnaires. The study questionnaire was pilot tested amongst a cohort similar to the study participants and its reproducibility and precision were confirmed. It was a self administered paper questionnaire (Annexure I). Teachers and college authorities were not involved in administering the questionnaire. Members of the research team briefed the students about the purpose and significance of the study and that their responses would be confidential. The questionnaire collected information about participant characteristics and their sex related knowledge, attitudes and practices. In the 'Knowledge' section, the total number of correct answers to twelve questions were scored as per a pre-decided scale, with higher scores indicating better knowledge. Its internal consistency was found to be good with a Cronbachs alpha of 0.85.

The analysis was conducted in two parts using the SPSS 16.0 software (Chicago, IL: SPSS Inc.). First, descriptive statistical analysis was conducted to describe participant profiles, sex-related knowledge and attitudes. Next, variations observed in these parameters were tested using chi-square tests for categorical variables and t-tests for continuous variables at the significance level of $p = 0.05$.

RESULTS

The mean age was 18.6 ± 1.6 y. Out of the total, 230 (46%) students were female and the rest males. Seven percent of the participants were born outside the city of Mumbai. None of the participants came from a divorced family and 5% of them reported that either one or both of their parents were deceased. 48% reported a less than satisfactory family life.

Sex Related Knowledge [Table/Fig-1]. Sex related Attitudes and perceptions [Table/Fig-2]. Premarital sex and high-risk sexual activities.

Premarital sexual activity was reported by 48% male and 18% female participants ($p < 0.001$). Out of the participants who had premarital sexual activity:

- 68% of the males and none of the females had more than one sexual partner.
- 22% males and none of the females reported having sex with a casual partner, that is, a person who is neither their live-in partner, boyfriend/girlfriend or fiancé.
- 21% males and 12% females ($p=0.1$) reported having used a contraceptive method during a sexual encounter(s) in the last six months.
- 14% of males and 21% of females ($p=0.2$) reported being forced to have sex
- None reported a premarital pregnancy.

The reasons given for not using contraceptives were, reliance on emergency contraceptive pills after a sexual encounter, standing while performing sexual acts to allow the fluid to flow out, no fear of pregnancy as 'we had sex only once', 'only people with HIV should use condoms', non availability of contraceptives in spur of the moment acts, problem with storage of contraceptives and feeling embarrassed to purchase them from the shops.

DISCUSSION

We found that the participants, i.e., commerce college students, showed less than satisfactory knowledge regarding various aspects of sex and, especially, contraception. A similar study conducted in Hong Kong demonstrated much higher knowledge about

S. No.	Name of Authors	Year of publication	Central theme	Study population	Sample size	Some Key findings
1	Ramadugu S. et al., [4]	2011	Sex and HIV/AIDS	Co-ed School students of class IX to XII	586	<ul style="list-style-type: none"> 30% boys and 17% of girls reported having had sexual contact Average age at first sexual contact for boys and girls was 13.7 and 14 years, respectively 7.8% boys and 13.5% girls reported sexual abuse Only 53.3% boys and 43.7% girls were aware that even a single sexual intercourse can lead to pregnancy Friends were the main source of information on matters related to sex 68% girls and 56% boys would like sex education to be taught at school
2.	Giri P.A. et al., [16]	2012	HIV/AIDS	Commercial female sex workers	103	<ul style="list-style-type: none"> 54.4% of the workers had their first sex encounter below the adult age (<18 years) with mean age at first sex being 20 ±5.9 years Only 24.3% to 36.9% , reported of having used condoms consistently 84.5% were aware about HIV/AIDS and television was the common source of this information Almost 50% believed in various myths about HIV/AIDS
3.	Padhyegurjar M.S. et al., [15]	2012	HIV/AIDS	Class IX students of from the slums of Mumbai	265	<ul style="list-style-type: none"> Only 35.47 % perceived it as a problem which affects their community Majority of the students were of the opinion that 'Early treatment cures AIDS' 43 % said that the use of condom during sex doesn't lower the risk of getting HIV
4.	Ruikar H.A. [3]	2013	STDs	Under-graduate college students (Science, Arts or Commerce)	279	<ul style="list-style-type: none"> Science students performed significantly better Only 41.2% had correct knowledge of the contraceptives Students universally expressed that they would not share utensils, food and swimming pool with a person with STI or HIV Science students: 43.72% students had at least 2 sexual partners, 14.7% had more than 3 while 1.8% had more than 4 sexual partners 28% reported that they had not taken precautions during sex
5.	Menon A. [14]	2013	Sex, STDs, HIV/AIDS	Girls (12-18 yrs) residing in temporary shelters	50	<ul style="list-style-type: none"> Most have little knowledge about STI/HIV Sexual activity began early at around 14 yrs Early adolescents (12-15yrs) had not heard of safe sex and condom use
6.	Our study	2014	Sex, Contraception, STDs	Commerce college students	500	<ul style="list-style-type: none"> Most, especially, females, had poor knowledge regarding almost all aspects Premarital sexual activity was reported by 48% males and 18% females Male participants showed a very casual attitude regarding sex 14% of males and 21% of females reported being forced to have sex Only 21% males and 12% females reported having used a contraceptive Almost all disagreed that sex education in secondary schools will cause a rise in premarital intercourse

[Table/Fig-3]: A summary of the findings of various studies from in and around Mumbai, regarding knowledge, attitudes and practices with respect to sex, contraception and sexually transmitted diseases (STDs)

various aspects of sex, except contraception, for which, even their knowledge was poor [10]. Many other studies from India have also reported low knowledge about contraception [11-13]. A summary of the key findings of some similar studies conducted in and around Mumbai is presented in [Table/Fig-3] [3,4,14-16].

Females faced worse than males in the knowledge scores. Being well informed about contraception is one of the pre-requisites for

successfully regulating fertility, something that has been lacking in India. In our study, 40% of males versus 13% of females were of the opinion that contraception is the sole responsibility of the female partner. With the currently available and commonly used reversible and effective contraceptive measures being mostly female centric, poor contraception knowledge among them is indeed a matter of concern. Another study also showed low knowledge amongst

women but the point to note is that their study was conducted among rural women unlike ours [13]. In our opinion, knowledge regarding contraception was poor because it is not a part of the conventional sex education programs due to the erroneous perception that knowledge about contraception will increase premarital sexual encounters. But most of our participants disagree with this notion. Only 7% of females felt that condoms should be available in vending machines in all public toilets while a significantly larger number (59%) of males felt so. Many a times, procurement related stigma may prevent youngsters from using condoms and this has been rightly pointed out in our study too. A study conducted in Ethiopia concluded that condom machines may be associated with more condom procurement among vulnerable female students and could be an important component of a comprehensive university health policy [17].

Our participants scored relatively better in the STDs and HIV knowledge section compared to contraception. With the HIV/AIDS epidemic looming large, adequate knowledge about its cause, transmission and prevention are extremely important.

When questions depicting attitudes and perceptions towards various aspects of sex were asked, it was found that majority of the women gave neutral answers. This again raises the question as to whether they are less knowledgeable or that they shy away from giving their opinion on issues related to sexuality.

Majority of our participants were open to the thought of premarital sex. They felt that virginity need not be preserved until marriage if the partners were engaged. Yet, almost half of them felt that men lose respect for women who have had premarital sex. In the author's opinion, this ambiguity in the thoughts of our participants is a result of a more deeply rooted tug-of-war between modernization and conservatism. On one hand is the belief in gender equality and social progress, while on the other is, the reactionary desire to preserve tradition, including underlying sexist notions. About half of males and 20% of females confessed to having had premarital sex. Different studies have reported highly variable statistics about premarital sex due to many socio-cultural and educational differences among participants. But in all the studies, more males have reported to have had premarital sex than females [18,19]. Also, in our study, more males have reported to have had sex with more than one partner and also sex with casual partners, whereas none of the females reported either. The reported contraceptive use was found to be very low and this is not surprising given the low knowledge and misconceptions about contraception among our study participants. Given the above, it was surprising that none of the participants reported a premarital pregnancy. The reasons could be that they might not have revealed the truth due to fear of embarrassment or because of the popular use of the 'morning after' pills that have been recently made available 'over-the-counter'.

One very serious finding was that about one fifth of both males and females reported to have been forced to have sex. With the rising incidences of sexual assault and related crimes, it is very important to make youngsters understand their right to firmly deny being part of an undesired sexual encounter and also that forcing someone to have sex is grave offence that will be dealt with in the strictest possible manner. For the later, an effective and stringent law and its strict implementation are indispensable.

More than 80% of the participants said that sex education in secondary schools will not lead to a rise in premarital intercourse. On the contrary, a study has shown that imparting sex education not only delays the time to first sexual intercourse but educated individuals are also more likely to use a contraceptive method [20,21].

In the authors opinion, most Indian parents find it difficult to talk to their children about sexual satisfaction and pleasure, masturbation, pornography, prostitution and safe sex practices. The reasons for

this as reported by a study are, [1] a belief that conversations about sex and reproductive health services encourage sexual activity and promiscuity [2] a presumption that unmarried women are not sexually active and therefore do not require sexual and reproductive health services; and [3] a high value placed on virginity [22]. Thus, a formal sex education program is extremely important.

LIMITATION

Some of the limitations of our study, which are true for any survey based research project, are as follows:

- Although the individuals who volunteered to participate in the survey were randomly sampled, errors due to non responsiveness may exist. That is, people who choose to respond may be different from those who do not respond, thus biasing the estimates.
- Central tendency bias - Participants may avoid using extreme responses.
- Acquiescence bias - Participants may agree with statements as presented to them, especially when in doubt.
- Social desirability bias - Participants may try to portray themselves in a more favourable light.

SUMMARY AND CONCLUSION:

- Participants not only lacked basic information about various sexuality related aspects, but also had many misconceptions, especially about contraception and safe sex practices. The reported use of contraceptives was also dismal.
- Females fared worse than males in the sex related knowledge section, especially, with regards to contraception. The lack of knowledge or fear of embarrassment might be the reason for women mostly choosing neutral answers. Every woman should be empowered with the knowledge to understand contraception and not depend on their male counterparts for such a critical issue.
- About 20% of our participants admitted to have been forced to have sex. This is indeed very serious and requires a thorough bipronged effort by introducing sexuality education and strict laws.
- Male participants have shown a very casual attitude regarding sexual intercourse and have also admitted to having more than one sexual partner. In the times of the current AIDS pandemic, the significance of avoiding multiple sexual partners and safe sex practices should be stressed to them.
- Pre-marital sex is much more common than once thought, again stressing the need for sexuality education and counseling on safe sex practices.

Sexuality education must be a continuous process and regular assessment of the student's knowledge, attitudes and practices is necessary to understand where the emphasis has to be laid. The lack of sexuality education will only lead young people to seek information about their bodies and the sexual act from misinformed sources like peers, media, and pornography. It is important in order to develop an open and healthy approach towards sex and sexuality and assist them to make well-thought judgments.

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