

Understanding Reproductive & Sexual Health Knowledge and Awareness amongst First Year Medicine Students: An Observational Study

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ABSTRACT

Background: Reproductive & sexual health is one of the topics which is scarcely discussed in countries like India. Increasing gap between the age of puberty & marriage, early sexual activity & inadequate knowledge might lead to risk of sexually transmitted diseases (STDs) and unwanted pregnancies. The current study explores the knowledge of first year medical students, who represent the late adolescent group, their sources of knowledge & information seeking needs.

Aim: To understand first year medical students' knowledge & awareness about reproductive and sexual health.

Methods: Cross-sectional survey, using a self-administered questionnaire given to 314 1st year students between 17-20 years at SKNMC, Pune. Analysis was done using SPSS software.

Results: 65.9% Students knew about the 'fertile period' during menstrual cycle with more boys answering it correctly than the girls ($p < 0.05$). 44% denied that women can get pregnant during very first intercourse. Students were aware about the various contraceptive methods with 11% agreeing to have used some, indicating sexual activity. Respondents agreed that condoms are an effective way of preventing STD & HIV with males having better knowledge as compared to females ($*p < 0.05$). About 37% said that HIV is curable & 11% said that it transmits via mosquito bite. More females were open to talk with their mothers as compared to males but neither of them was open to interacting with fathers.

Conclusion: students showed mixed levels of knowledge related to sexual health, their sources mainly being friends & media, & expressed willingness to get information through educational programs.

Key words: Medical students, Late adolescence, Reproductive and sexual health knowledge

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INTRODUCTION

Reproductive health is an important component of general health which eventually contributes towards social health as well. This area of health is still considered as a social taboo in our country where seeking information itself becomes a major problem. This might lead to either lack of knowledge or inappropriate knowledge. Adolescence (10-19 years) is a period of dynamic transition, both mental as well as physical. Of all the changes that occur during adolescence, none arouses more interest and anxiety than those surrounding sexuality [1]. Because of early sexual activity and inadequate knowledge about reproductive health and contraception, adolescents are more exposed to the risk of sexually transmitted diseases and unwanted pregnancies [2]. In the studies from

different countries, it was found that adolescents' knowledge about health; especially about reproductive health was insufficient, and the level of knowledge is closely related to the source where they obtain the information [3,4]. Despite this, it is one of the topics which is scarcely discussed especially in developing countries like us.

According to WHO, 250 million new cases of Sexually Transmitted Diseases (STDs) occur worldwide each year with a high rate in the 16-19 years age group. Prevalence of high-risk sexual behavior is higher in this age group [5]. Young people are at risk of HIV/AIDS because they are in the transition phase of their life. Many diseases can occur by lack of awareness, myths; hence there is need for creating awareness about reproductive health among the vulnerable groups [6]. Good SRH knowledge indicates sufficient knowledge of key sexual and reproductive health (SRH) topics and issues. The topics should reflect those of primary importance for protecting and promoting SRH [7]. Various studies conducted in different parts of India to

assess the knowledge of and attitude towards HIV reveal a widespread ignorance and misconceptions about the disease among young adults [8]. Most of the previous studies in India have mainly explored knowledge of adolescents from the early adolescent period belonging to rural areas.

Various studies conducted at medical university level in different countries have proposed that there should be sexual health education programs included in the medical curricula [9,10]. First year medical students are usually in their last years of adolescence and beginning years of youth. So, they are the most suitable groups to find out the lifestyles and behaviors which are acquired during adolescence. Moreover, these medical students of today are the future physicians. They are not different from the sexually active students of similar age from other disciplines [8]. It might be possible that they have some problems or unanswered queries about reproductive behaviours for which a solution can be offered by experts. Knowledge is one of the important factors that may cause behavioural change [8]. With this background, we conducted this study to assess the basic level knowledge of first year medical students, who predominantly belong to the urban adolescent population, right at the beginning of their career. Aim was to assess their knowledge and awareness about sexual & reproductive health, HIV/AIDS, sexually transmitted diseases, contraception, their sources of information and on what topics they feel the need to be informed.

MATERIAL AND METHODS

Objective of the study was to understand the existing state of knowledge about reproductive and sexual health amongst first year medical students.

Study Population: First year MBBS students of Smt. Kashibai Navale Medical college (SKNMC) & GH, Pune, Maharashtra. Total 314 students, admitted between the years 2015-2017 at SKNMC, were enrolled for the study. Study population was from various parts of Maharashtra, predominantly urban, and their age ranged between 17-20 years which corresponds to the age of late adolescence.

Study design: It was conducted as a cross-sectional survey using a self-administered questionnaire.

Study was approved by the Institutional Ethics Committee (IEC).

Design of the survey questionnaire: A systematic search of the literature was made to identify relevant published papers. The questionnaire which we used was largely adopted from a core WHO questionnaire designed by John Cleland [11] and a study questionnaire developed by researchers in a published protocol study in Saudi women [12]. Some modifications were done in the questionnaire to make it suitable for our study population and validated by experts in the field of reproductive medicine. The questionnaire included different sections containing questions about Sexual and reproductive health knowledge, Contraception knowledge and Knowledge about STDs & HIV. The

instrument was first pilot tested on a group of students (n=20).

We conducted this survey in the first-year students before they were exposed to the reproductive physiology lecture series, as that would help in testing their base level knowledge about reproductive health. All the students were first briefed about the overall objective of the study as well as details of the questionnaire to be filled by them anonymously. Written informed consent of the students was taken and they were assured that all the information provided by them will be kept strictly confidential.

Statistical analysis of the questionnaire was done to study gender association for different questions by applying Chi square tests using SPSS software.

RESULTS

Total 314 students within the age group of 17-20 years (mean age of 18.35 years) participated in the study out of which 179 (57%) were females and 135 (43%) were males. Amongst these 74.8% of the students were hostelites & 25.1% were residing locally.

Figure 1 denotes the educational status of their parents. 90% of the fathers and 82% of the mothers belonged to the graduate & above category.

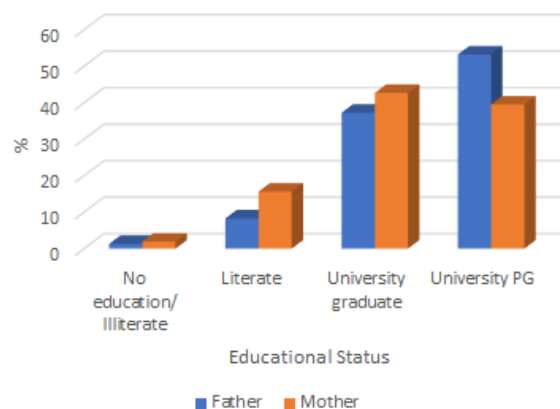


Figure 1: Educational Status of Parents.

Knowledge about pregnancy & contraception

Analysis of the questionnaire [Table 1] revealed that about 65.92% of the students were aware that there exists a fertile period during the menstrual cycle, when there are high chances of a woman getting pregnant, but 34.08 % were still ignorant about it. Statistically significant gender association was seen by applying Chi square test, with more boys (70.37%) answering the question correctly than the girls (62.57%). 55.73% of the respondents agreed that a woman can get pregnant during the very first sexual intercourse but 44.27% marked it false. Percentage of females giving true answers was more as compared to males although the difference was not statistically significant. Almost 90.76 % of the students were aware that sexual intercourse is essential for getting pregnant but 9.24 % responded that

a woman can get pregnant by kissing or hugging. 71.97% agreed that Oral Contraceptive pills are an effective method of preventing pregnancy in females

Number & percentage of students conversant with various contraceptive methods has been denoted in Figure 2. Majority (>80%) of the students showed awareness about the various contraceptive methods except for lactational amenorrhea (52.5%). 11% of the students [out of which 47.05% girls & 52.94% boys] have used some or the other method of contraception indicating that they are sexually active.

Knowledge about Sexually Transmitted Diseases (STD) & HIV/AIDS: [Table 2] denotes that 91.72% of the students stated that sexually transmitted diseases & HIV infection can be prevented, out of which 93.3% were girls and 89.6% boys. Students were aware about the sexual route of transmission and 82.8% of the respondents agreed that condoms are an effective way of preventing these. (78.21% girls & 88.89 % boys). It was observed that males had better knowledge regarding this as compared to females (* $p < 0.05$, chi sq test). Regarding misconceptions about the routes of transmission, although about 98.41% of the participants were aware that HIV infection doesn't transmit by shaking hands or hugging, but 11.78% of them stated that it transmits via mosquito bite. Total 37.9 % of the students felt that HIV infection is curable.

When enquired about their source of knowledge, it was found that female students were more open to talk with their mothers (57.5%) as compared to Male students (17%). On the other hand, neither males nor females were open to interacting with fathers. Similar 'lack of openness to discuss' was observed with teachers, physicians as well as relatives.

Around 70 to 80% of males and females feel comfortable interacting with friends on sexual health matters [Table 3].

Gender wise distribution of students and the knowledge they acquired from their parents on different topics like pubertal changes, menstruation, masturbation, reproductive systems & sexual relationships between males & females and contraception have been denoted in [Table 4].

Figure 3 denotes their common sources of knowledge on sexual health matters.

When enquired whether they had attended any sexual & reproductive health courses either in school or college, 61.15 % responded positively. About 65% of students expressed that they would like to attend such courses. Figure 4 denotes gender wise distribution of various topics on which students feel the need to be informed.

Table 1: Knowledge about pregnancy & contraception.

	Statement	Response	Females (n=179)		Males (n=135)		Total (n=314)		p value
			n	%	n	%	n	%	
1	Within the menstrual cycle there is a fertile period with high probability of pregnancy	TRUE	112	62.57	95	70.4	207	65.9	$p < 0.05^*$
		FALSE	67	37.43	40	29.6	107	34.1	
2	A woman can get pregnant the very first time of sexual intercourse	TRUE	101	56.42	74	54.8	175	55.7	$p > 0.05$
		FALSE	78	43.58	61	45.2	139	44.3	
3	Women can get pregnant through kissing or touching.	TRUE	16	8.94	13	9.63	29	9.24	$p > 0.05$
		FALSE	163	91.06	122	90.4	285	90.8	
4	Oral Pill is an effective method of preventing pregnancy	TRUE	127	70.95	99	73.3	226	72	$p > 0.05$
		FALSE	51	28.49	37	27.4	88	28	

* $p < 0.05$ = Significant

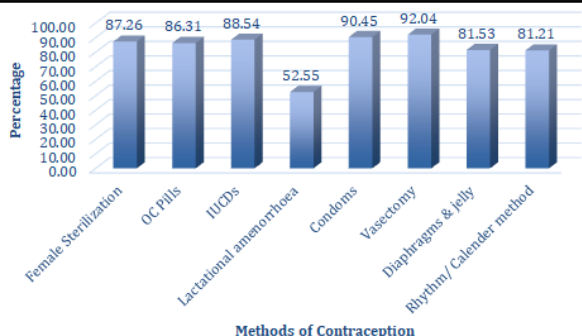


Figure 2: Knowledge about various contraceptive methods.

Table 2: Knowledge about sexually transmitted diseases & HIV/AIDS.

	Statement	Response	Females (n=179)	Males (n=135)	Total (n=314)	p value
			n (%)	n (%)	n (%)	
1	STDs & HIV can be prevented.	YES	167 (93.30)	121(89.63)	288(91.72)	>0.05
		NO	12(6.70)	14(10.37)	26(8.28)	
2	Condoms are effective method of preventing against STD & HIV.	TRUE	140(78.21)	120(88.89)	260(82.80)	<0.05*
		FALSE	39(21.79)	15(11.11)	54(17.20)	
3	A person can get HIV infection by mosquito bite.	YES	23(12.85)	14(10.37)	37(11.78)	>0.05
		NO	156(87.15)	121(89.63)	277(88.22)	
4	Shaking hands or hugging can transmit HIV.	YES	4(2.23)	1(0.74)	5(1.59)	>0.384
		NO	175(97.77)	134(99.26)	309(98.41)	
5	HIV infection is curable.	YES	68(37.99)	51(37.78)	119(37.90)	>0.05
		NO	111(62.01)	84(62.22)	195(61.10)	

*p<0.05=Statistically significant

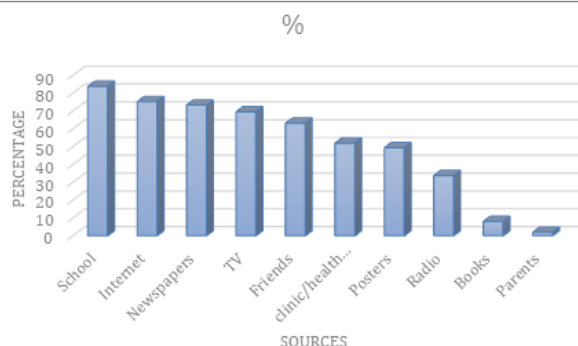


Figure3: Common sources of knowledge.

Table 3: Distribution of students' according to gender & openness to talk with parents about sexual & reproductive health issues.

Open to talk to	No		Yes		p-value
	Males (n=135)	Females (n=179)	Males (n=135)	Females (n=179)	
Open to talk to mother	112 (82.96%)	76 (42.5%)	23 (17.03%)	103 (57.5%)	<0.001*
Open to talk to Father	112 (83%)	164 (91.6%)	23 (17%)	15 (8.4%)	0.02
Open to talk to sister/brother	103 (76.3%)	118 (65.9%)	32 (21.7%)	61 (34.1%)	0.046
Open to talk to Teacher					p-value

	Males (n=135)	122 (90.4%)	13 (9.6%)	0.25
	Females (n=179)	168 (93.9%)	11 (6.1%)	
Open to talk to friends		No	Yes	p-value
	Males (n=135)	28 (20.7%)	107 (79.3%)	0.06
	Females (n=179)	54 (30.2%)	125 (69.8%)	
Open to talk to relatives		No	Yes	p-value
	Males (n=135)	127 (94.1%)	8 (5.4%)	0.561
	Females (n=179)	171 (95.5%)	8 (4.5%)	
Open to talk to physicians		No	Yes	p-value
	Males (n=135)	111 (82.2%)	24 (17.8%)	0.287
	Females (n=179)	155 (86.6%)	24 (13.4%)	

*p value<0.001= Significant

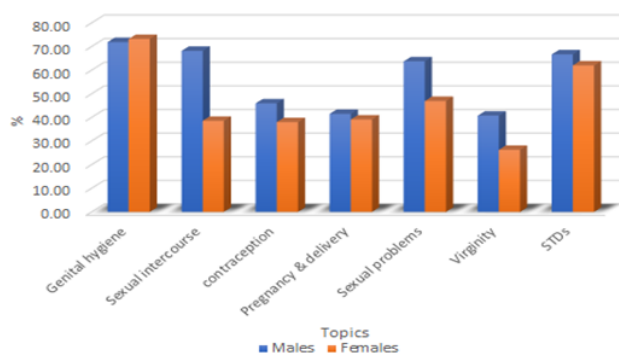


Figure4: Gender wise distribution of topics on which more knowledge is required.

Table 4: Knowledge gained from Parents on different topics.

Topic	Gender	Knowledge from Mother		Knowledge from Father	
		Nothing n (%)	To some extent n (%)	Nothing n (%)	To some extent n (%)
1 Pubertal changes	Males (135)	45 (33)	90 (66.67)	57 (42.2)	78(57.78)
	Females (179)	11(6.15)	168(93.85)	103 (57.54)	76(56.30)
2 Menstruation	Males (135)	81 (61)	54 (40)	101 (74.81)	34(25.19)
	Females (179)	7 (3.91)	172(96.09)	138 (77.09)	41 (30.37)
3 Masturbation	Males (135)	115 (85.19)	20 (14.81)	106 (78.51)	29(21.48)
	Females (179)	135 (75.42)	44 (24.58)	163 (91.06)	16(11.85)
4 Repro. Systems of men & women	Males (135)	60 (44.4)	75 (55.56)	62 (45.92)	73(54.07)
	Females (179)	43(24.02)	136 (75.98)	122 (68.15)	57(42.22)
5 Sexual relationship between male & female	Males (135)	65 (48.5)	50 (37.04)	64 (47.4)	71(52.59)
	Females (179)	66 (36.87)	103 (57.54)	124 (69.27)	55(40.74)
6 Contraception	Males (135)	72 (53.3)	63 (46.67)	81 (60)	54(40)
	Females (179)	75 (41.9)	104 (58.10)	135 (75.41)	44(32.59)

DISCUSSION

In this questionnaire-based observational study, we tried to assess the knowledge of first year medical professionals on various aspects of reproductive & sexual health. This was done prior to their exposure to any kind

of academic training so that baseline knowledge of these adolescent students and their information seeking needs can be known. The demographic profile of our study population (n=314) reflected that, the majority of them belonged to well-educated families mainly from urban areas. About 75% of these students were residing in the

hostel. Adolescents usually tend to get involved in physical relationships either due to peer pressure or due to the kind of freedom they get while staying away from homes. Hence, they need to be aware about various aspects of sexual & reproductive health e.g., pregnancy, contraception, prevention of HIV & sexually transmitted infections etc. 65% of our study participants were aware that there exists a fertile period during the menstrual cycle, around ovulation, where there are high chances of a woman getting pregnant, but 34% of them were ignorant about it. More number of male students (70.37%) were aware about it as compared to female students (62.5%), which seemed to be an interesting finding. Although most students knew that sexual intercourse is necessary for getting pregnant, still few of them (9.24%) of them agreed with the statement that a woman can become pregnant by kissing or hugging. 44% of the respondents stated that a woman can't become pregnant during very first intercourse which showed their inadequacy of knowledge regarding menstruation & pregnancy. These findings amongst adolescents are similar to the one found in various studies conducted across different countries [13-15].

High risk sexual behaviors are common in the adolescent population and unwanted pregnancies are a major health problem in both developing as well as developed countries [16]. When enquired about contraceptives knowledge, more than 80% of the students including both boys & girls, were aware about various methods of contraception, most popularly used being the oral contraceptive pills & condoms. The percentage of students engaging in physical relationships was found to be less. The findings are similar to the ones found by Simsek Y et al and Eaton DK et al in their separate studies [17,18].

STD & HIV knowledge: These medical students are supposed to deal with HIV infected patients as well as patients with STDs in future. So, it was important to explore their knowledge about these diseases, their routes of transmission etc. Students were aware about the different routes of transmission especially the sexual route and most of them agreed that the transmission can be prevented by proper care such as use of condoms. Statistically significant gender association was found with males having better knowledge about 'prevention by use of condoms, as compared to females. Regarding misconceptions about mode of transmission, most of them (98%) knew that HIV infection doesn't spread by shaking hands or hugging, but 11% reported that it can transmit through mosquito bite. Similar findings were reported by Edwin R Amalraj et al in their study on first year students where they have stated that educational programs alone can remove these misconceptions[8].

Various studies in the past indicate that the basic knowledge level of adolescents about sexuality & reproductive health is closely related to their sources of knowledge [19]. Parents are the first educators of adolescents about these matters and they play an important role in the development of adolescents' behaviors and attitudes about sexuality [3]. According to

Yilgor, E. et al education level of the parents is said to be an important determinant in this and parents particularly the fathers whose educational level was low were unable to help especially the male adolescents for their education about sexuality [19]. Majority of our study participants had well educated parents. Despite this, students were hesitant to talk to their parents on these matters. It was found that girls were more open to talk to their mothers as compared to boys but neither girls nor boys were open to interact with fathers. As compared to boys, girls had acquired more knowledge from mothers about pubertal changes, menstruation, reproductive systems of men & women, their sexual relationships & contraception but both the genders acquired little knowledge from their fathers. It was an interesting finding in our study that even in the modern times there is still a lack of openness to discuss with parents about sexual health matters. Similar to the reports of the WHO about developing countries and study by Sezgin B. & Atkin A. [2], adolescents in our study also preferred friends and other sources like TV & internet to access knowledge about these topics.

CONCLUSION

The results of this cross-sectional survey indicated that first year medical students had mixed levels of knowledge on various topics related to sexual health, they were not very open to talk about these topics with their parents, their sources of knowledge were mainly friends & media, but they were willing to be informed on various topics through educational programs. Hence, we recommend such programs to be conducted for the medical students and create awareness among parents about the importance of discussing these topics with their children.

LIMITATIONS OF THE STUDY

Although the sample size was big (n=314), all the participants belonged to a single medical institute. In future we intend to extend the study to other medical institutes.

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