

Original Research Article

## Knowledge on Reproductive Health among Graduate Students in Northern Kerala

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### ABSTRACT

**Context:** Reproductive and sexual health of adolescents and young adults is a global public health issue. They have many misconceptions about reproductive health issues like human reproduction, sexuality, contraception, HIV/AIDS, reproductive tract infections, etc. The present study aims to assess the level of knowledge on reproductive and sexual health issues among college going young graduate students in northern Kerala.

**Methods and Materials:** It was a descriptive study. Data from a survey of 1640 graduate students in the age group of 18-24 studying in the arts and science colleges in Kannur and Malappuram - the two northern districts of Kerala were collected using self administered structured questionnaire.

**Results:** The key findings of the study is that, the level of knowledge on reproductive health issues among young adults in northern Kerala were poor, which is consistent with many other studies in India and abroad. Only 6.8% of the young adults had sound knowledge. The findings of the study disclose that sizable number of young adults did not have knowledge on taking care of basic reproductive health issues such as contraception, pregnancy and reproductive tract infections. A significant relation is found between area of residence and level of knowledge in reproductive health. Females were more knowledgeable than males in the area of pregnancy related aspects.

**Conclusions:** The study recommends for enhancing the knowledge and understanding of young adults in taking care of sexual and reproductive health concerns by imparting programs in proper direction. The study also recommends for health education on reproductive health through educational institutions by fostering more open interactions between teachers and students and between peers.

**Key words:** Knowledge, reproductive health, young adults.

### INTRODUCTION

The reproductive and sexual health of young adults is a growing global public health issue. Reproductive health is a vulnerable and complex matter since it is concerned with culture, norm, belief, diverse customs and traditions. The 1994 International Conference on Population and Development (ICPD) marked paradigm shift and reproductive and sexual health has gained increased attention among the public health experts, researchers and policy makers. The health related problems and needs of the young adults are different from that of the others. The fact that young adults

are now exposed to many kind of changes in values- social, cultural, material and media influence- results in corresponding changes in their typical lifestyle. It is seen that there is lack of attention in almost every dimension of their lives, particularly sexual behavior and reproductive health, including reproductive morbidity, reproductive care, abortion services and contraception especially in rural areas. A significant number of youths, who are engaged in unhealthy behaviors, die every year due to reasons that are preventable.

It is a fact that adolescents and youths are poorly informed about family

life, sexuality and reproduction. They have limited knowledge about sexual and reproductive health, process of puberty, sexual health, pregnancy and reproductive health. Many adolescents and young adults face a variety of reproductive health risks like sexually transmitted diseases (STDs), including AIDS; early pregnancy and childbearing with an increased risk of injury, illness and death of mother and infant; and unintended pregnancy, often leading to unsafe abortion and its complications. Globally, misinformation and lack of knowledge about sexual and reproductive health is disturbingly common among young people. <sup>(1)</sup> A multi-centric study in rural higher secondary schools located in 14 states in India through Human Reproductive Research Centre of the ICMR <sup>(2)</sup> revealed that attitude towards legal minimum age of marriage beyond 21 years in boys and 18 years in girls was favorable. Only 19.8 percent of adolescents were aware of at least one method of contraception. Only two-fifth (39.5%) were aware of AIDS and less than one-fifth (18%) were aware of STDs and most of them thought it is the same as AIDS. The young adults and adolescents are poorly informed on reproductive and sexual health and programmes and policies for proper intervention to solve various problems of young adults are needed. <sup>(3)</sup> In a study among higher secondary school going adolescents in Kerala, most of them were poorly informed about reproductive and sexual health matters, particularly about contraceptives. <sup>(4)</sup> A study in Kerala <sup>(5)</sup> among 181 unmarried adolescent abortion seekers found that, lack of knowledge on reproductive and sexual health, poor intra family relations and poor knowledge on STI were the prime causes of unmarried pregnancy. High risk behavior of young adults' study in Pune, India <sup>(6)</sup> revealed that young adults were more likely to report early age of initiation of sexual activity and their knowledge on STD was low. The present study was designed to assess the knowledge of college going graduate

students in northern Kerala on reproductive and sexual health.

## **MATERIALS AND METHODS**

The target group of the study was college students who were studying in the degree level in the Arts and Science colleges of Kannur and Malappuram districts of Northern Kerala. The study was conducted in eight colleges, of which four colleges each were selected from Kannur and Malappuram. The number of students participated in the study were 1640 - 809 boys and 831 girls. 801 students from Kannur district and 839 from Malappuram district were included in the study.

It was a descriptive study. Data for the study was collected using structured questionnaire from unmarried males and females in the age group of 18-22, who were willing to participate. For analysis, knowledge scores were rated as poor, average and good. To classify the subjects according to their level of knowledge, 33.3<sup>rd</sup> and 66.7<sup>th</sup> percentile values of the total scores were computed. Those who had knowledge scores below or equal 33.3<sup>rd</sup> percentile (those who had knowledge score  $\leq 22$ ) were rated as 'poor' or 'low', and those who had score above 66.7<sup>th</sup> percentile (those who had knowledge score  $\geq 28$ ) taken as 'good'. Those who had knowledge score in between the 33.3<sup>rd</sup> percentile and 66.7<sup>th</sup> percentile (score 23-27) were considered as 'average' or 'medium'. The data was presented in frequency, percentage, mean, standard deviation, Chi-square test, etc.

## **RESULTS**

Majority of the respondents (80.2%) were of 18 years. The age of the respondents ranged from 18 to 22 years. Table 1 shows the distribution of respondents by various socio demographic characteristics. In the study male and female representations were more or less the same. 49.4 percent were males and 50.6 percent were females. Table 1 shows that slightly more than half of the respondents (54%) were Hindus. The Muslims and Christian

were 27.4 percent and 18.6 percent respectively. It shows that the study area was Hindu and Muslim dominated area. More than half of the respondents' belonged to backward castes (58.7%) and 4.3 percent were scheduled castes. No scheduled tribe students participated in the study. 37 percent belonged to forward castes.

The college going youths' knowledge on reproductive health issues were not good. The students performed very poorly in many of the areas. The basic reproductive health issues such as ovulation, ejaculation, fertilization, contraception, pregnancy, reproductive tract infections, and sexually transmitted infections were not properly known to the young adults. The females were more knowledgeable in the secondary sexual changes of their body than males. 68.95 percent females and 63.16 percent males were aware that, female's body became more muscled in puberty.

**Table 1** Distribution of respondents by their socio- economic and demographic characteristics

Socio Economic and Demographic Characteristics of Respondents	Respondents	
	No	%
Age	18	1315 80.2
	19	306 18.7
	20	6 0.4
	21	12 0.7
	22	1 0.06
Sex	Male	809 49.3
	Female	831 50.7
Religion	Hindu	885 54.0
	Muslims	449 27.4
	Christian	306 18.7
Caste	Backward Caste	963 58.7
	Forward Caste	604 37.0
	Scheduled Caste	70 4.3
Socio Economic Status	Low	640 39.0
	Medium	767 46.8
	High	233 14.2
Family	Nuclear	1075 65.5
	Extended Nuclear	423 25.8
	Joint Family	142 8.7
Area of Residence	Rural	991 60.4
	Urban	649 39.6
Course of study	Arts & Commerce	822 50.1
	Science	818 49.9
Mother's education	Primary	62 3.8
	Secondary	697 42.5
	Higher Secondary	658 40.1
	Degree and above	223 13.6
Father's education	Primary	64 3.9
	Secondary	623 38.0
	Higher Secondary	648 39.5
	Degree and above	305 18.6
Exposure to media	Yes	1536 93.7
	No	104 6.3
Participation in SRH program	Yes	59 3.6
	No	1581 96.4

81.8 percent of the respondents rightly said that usual age at which girl has menses for the first time was 9-16. 91.21 percent of girls and 89.74 percent of boys knew that usual interval between two menstrual cycle is one month. 64.01 percent girls and 52.41 percent boys informed that initially menses were irregular and quantity of bleeding varied but after few cycles it became normal. An interesting observation was that males knew more about women's reproductive health matters than females. 34.73 percent males and 50.66 percent females knew that ovulation is the release of menstrual egg from ovary. 27.38 percent of the study population knew testis produce sperm. 35.72 percent males and 19.25 percent females had knowledge about the basic reproductive health aspect that testis produce sperm. 50.93% males and 35.37 % females knew that when a male release sperm it is called ejaculation. 67.87 percent females and 31.77 percent boys knew that girls usually start puberty before boys. 55.85 percent young adults knew that fusion of sperm with ovum is called fertilization. 44.28 percent girls and 38.44 percent boys participated in the study said that women may get pregnant at first intercourse. 34.29 percent girls rightly said that pregnancy mostly occur in mid cycle while only 22.74 percent boys supported this statement. 46.20% females and 18.29% males knew that, missed period is the sign of pregnancy. 45.84 percent females and 35.85 percent males disagreed with the statement that, if women wash out her vagina immediately after sex, she cannot get pregnant.

55.83 percent of the females participated in the study agreed with the statement that, condom cannot be used more than once. 39.68 percent males also agreed with this statement. 38.81 percent males and 30.20 percent females accepted the statement that, condom is an effective way of protecting against AIDS/STI. 38.56 percent males and 35.62 percent females rejected the view that emergency contraception is meant for both males and females. 51.42 percent males and 55.59

percent females accepted that oral contraceptives offer protection against STI was a false statement.

According to majority of girls, premature delivery (63.42%), maternal death (45.12%), bleeding (22.38%), etc were the complications of early pregnancy/delivery. According males, premature delivery (41.29%), maternal death (40.54%) still birth (19.90%) and low birth weight baby (16.81%) were the serious complications of early pregnancy/delivery. Majority of the females who attended the study were of the opinion that, infections (44.15%), infertility (19.02%), hemorrhages (19.15%), cervical injury (17.56%), etc were the serious negative health consequences of unsafe abortion. The females were of the view that, infection, infertility, hemorrhages, etc, were the major health problems in association with unsafe abortion.

The condom and pills were the two important methods to prevent and avoid pregnancy, according to majority of the participants. Both male (98.15%) and female (99.39) respondents agreed that condom is the best method to prevent pregnancy. 1.95% and 1.89% of the young adults knew about billing methods and withdrawal methods as the ways to prevent pregnancy.

All the participants in the study knew about AIDS. In order to check the level of awareness on infections a person can get through sexual intercourse, six diseases transmit through sexual relations were included. All the respondents agreed that AIDS transmit through sexual intercourse. 17.55 percent males and 18.17 percent females had knowledge about Gonorrhoea, which is transmitted through sexual relations. 15.82 percent males and 15.16 percent females knew about syphilis. The respondents' knowledge on sexually transmitted diseases was not satisfactory. All the respondents of the study said that, sexual relation is one of the modes of transmissions of AIDS. The male members in the study said that, sharing syringes,

blood transfusion and mother to child transmission during delivery were the other ways through which a person can get AIDS. 36.34 percent males and 14.56 percent females were of the opinion that by sharing syringes and unclean equipments, a person can get AIDS. Blood transfusion is another way to get AIDS, observed by 13.84 percent young male adults and 10.70 percent females. 38.56 percent males and 35.86 percent females said that mother to child transmission during delivery was a mode of transmission of AIDS.

The following table shows the levels of knowledge on reproductive health in the study population. The knowledge on reproductive health is poor among 60.4 percent of the graduate students. 32.8 percent had average level of knowledge, only 6.8 percent had good knowledge on reproductive health like secondary body changes (puberty), pregnancy, contraception, reproductive tract infections, sexually transmitted infections, etc.

Table 2: Distribution of young adults' knowledge on reproductive health

Levels of knowledge	Frequency	%
Poor	990	60.4
Average	538	32.8
Good	112	6.8
<b>Total</b>	<b>1640</b>	<b>100</b>

Table 3 shows that both the male and female respondents have only limited knowledge on reproductive health. 61.6 percent of males and 59.2 percent females had low knowledge on reproductive health. 7.2 percent of males and 6.5 percent of the females had good knowledge and 31.3 percent males and 34.3 percent females had average knowledge. 61.55 percent of males and 59.20 percent of females had low knowledge on reproductive and sexual health.

Table 3 shows that, 5.9 percent of science students and 7.8 percent of arts students' knowledge of reproductive health issues were fair. 34.3 percent arts subject students and 31.3 percent science students had average level of knowledge. 62.8 percent science students and 57.9 percent

arts students had very poor knowledge. The arts subject students' awareness on reproductive health issues was comparatively better than students studying science subjects. The above table reveals that respondents belonging to Muslim community had fair knowledge on reproductive health issues than Hindus and Christians. 9.1 percent students belong to Muslim religion, 6.4 percent Hindus and 4.6 percent Christians had sound knowledge of reproductive health. 33.7 percent Hindus, 32 percent Christians and 31.6 percent Muslims had average level of knowledge. But 63.4 percent Christians, 59.9 percent Hindus and 59.2 percent Muslims had poor awareness on reproductive health.

**Table 3: Distribution of young adults' levels of knowledge on reproductive health based on various socio economic variables**

Variables	Poor	Average	Good	P Value
<b>Gender</b>				
Male	498 (61.6)	253 (31.3)	58 (7.2)	<b>.409</b>
Female	492 (59.2)	285 (34.3)	54 (6.5)	
<b>Course of study</b>				
Arts	476 (57.9)	282 (34.3)	64 (7.8)	<b>.082</b>
Science	514 (62.8)	256 (31.3)	48 (5.9)	
<b>Religion</b>				
Hindu	530 (59.9)	298 (33.7)	57 (6.4)	<b>.136</b>
Christian	194 (63.4)	98 (32.0)	14 (4.6)	
Muslim	266 (59.3)	142 (31.6)	41(9.1)	
<b>Caste</b>				
BC	579 (60.1)	313 (32.5)	71 (7.4)	<b>.277</b>
SC	50 (71.4)	18 (25.7)	2 (2.9)	
Forward	361 (59.5)	207 (34.1)	39 (6.4)	
<b>Type of Family</b>				
Nuclear	650 (60.5)	359 (33.4)	66 (6.1)	<b>.430</b>
Extended	253 (59.8)	138 (32.6)	32(7.6)	
Joint	87 (61.3)	41 (28.9)	14 (9.9)	
<b>Socio Economic Status</b>				
Low	380 (59.4)	221 (34.5)	39 (6.1)	<b>.547</b>
Medium	461 (60.1)	249 (32.5)	57 (7.4)	
High	149 (63.9)	68 (29.2)	16 (6.9)	
<b>Area of Residence</b>				
Rural	611 (61.7)	317 (32.0)	63 (6.4)	<b>.000</b>
Municipality	248 (68.9)	94 (26.1)	18 (5.0)	
Corporation	131 (45.3)	127 (43.9)	31 (10.7)	
<b>Mother's education</b>				
Primary	41 (66.1)	17 (27.4)	4 (6.5)	<b>.109</b>
Secondary	428 (61.4)	226 (32.4)	43 (6.2)	
Higher Secondary	388 (59.0)	230 (35.0)	40 (6.1)	
Degree and above	133 (59.6)	65 (29.1)	25 (11.2)	

The scheduled caste students had very poor knowledge on reproductive health issues compared to the students belonging to backward castes and forward castes. 71.4 percent scheduled caste students had very low level of awareness on reproductive

health. While 60.1 percent students from the backward castes and 59.5 percent from the forward caste were in the poor strata with regards to the level of knowledge on reproductive health. 2.9 percent students belonged to scheduled caste, 7.4 percent belonged to backward caste and 6.4 percent belonged to forward castes had fair knowledge on reproductive health issues. Respondents belonging to joint family had fair knowledge on reproductive health issues than nuclear and extended nuclear families. 9.9 percent students belonging to joint family had fair knowledge; 7.6 percent of those belonging to students from extended nuclear families and 6.1 percent nuclear families had sound knowledge on reproductive health. 28.9 percent students from extended nuclear families and 32.5 percent students from nuclear family had average level of knowledge.

There is no significant relation between socio economic status (SES) and level of knowledge in reproductive health. 6.9 percent students belonging to higher socio economic status had fair knowledge; 6.1 percent students from low SES and 7.4 percent of medium SES students had sound knowledge on reproductive health. 32.5 percent students from medium SES and 34.5 percent from low SES and 29.2 percent from high SES had average level of knowledge. While 63.9 percent students in the higher SES, 60.1 percent in the medium SES and 59.4 percent in the low SES group had very poor knowledge on sexual and reproductive health. The students residing in the urban area (municipalities and corporation) had fair aware on sexual and reproductive health matters. 10.7 percent of students from urban area and 6.4 percent students from rural area had fair knowledge on reproductive health (Table 4.16). The students whose mothers had studied degree level and above (11.2%) had higher level of knowledge on reproductive health than the students whose mothers who had lower level of education. 6.2 percent students whose mothers had secondary education, 6.1 percent with higher secondary education

and 6.5 percent had primary education had medium level of knowledge on reproductive health issues. But 66.1 percent of the students whose mothers had primary education, 61.4 percent had secondary education, 59 percent had higher secondary education and 59.6 percent had degree and above had very poor knowledge on reproductive health issues. The students of fathers who had studied degree level and above had fair knowledge on reproductive matters (8.5%). The students of fathers who had studied up to primary level (1.6%) had higher level of knowledge on reproductive health. 6.6 percent of the students of fathers who had secondary education, 6.8 percent with higher secondary education had fair knowledge on reproductive health. 78.1 percent of the students of fathers who had primary education, 59.4 percent with secondary education, 60.6 percent with higher secondary education and 58 percent who completed degree and above had only limited knowledge ( $p = .087$ ).

The above analysis revealed that variables such as gender, course of study, religion, caste, type of family, area of residence, mothers' education fathers' education and knowledge about reproductive health matters were not statistically significant.

## **DISCUSSION**

The study revealed that young adults both men and women did not have sound knowledge on various reproductive and sexual health issues, which was substantiated by earlier studies in different parts of the country and other parts of the world. <sup>(7-11)</sup> The present study indicated that males had slightly higher level of knowledge in reproductive health issues than females. This may be due to the access of males to periodicals, journals and other mass media and open discussions with peers on the topics. Studies conducted in India revealed poor knowledge among girls regarding reproductive health issues and the present study concurs with these findings. <sup>(12-13)</sup> The arts subject students include

humanities, social science and commerce, whose awareness on reproductive health issues were comparatively sound than students who studied science subjects. It is contrary to our notion that students under science faculty stream have sound knowledge on reproductive health. The scheduled caste students had poor knowledge on reproductive health issues compared to the students belonging to backward castes and forward castes. This may be because of the low literacy status and poor access to media along with various socio economic backwardness of the SC population. A significant relation is found between area of residence and level of knowledge in reproductive health. The students residing in the urban area (municipalities and corporation) were fairly aware of sexual and reproductive health matters. 10.7 percent of students from urban area and 6.4 percent students from rural area had sound knowledge on reproductive health. The results of the study are consistent with the other studies in India. <sup>(14)</sup> Students of mothers who studied degree level and above had higher level of knowledge on reproductive health than the students of mothers who had low level of education, which is consistent with recent studies. <sup>(15)</sup> It is because of the fact that mothers have more interaction with their wards than others in the family and they can influence their offspring intellectually and emotionally. Thus we can assume that children of educated mothers have higher level of knowledge on reproductive health matters.

## **Recommendations and Conclusions:**

The present study points out the need to ensure that young men and women are fully informed on reproductive and sexual health and equip to make choices and negotiate outcomes. Reproductive and sexual health education must be made universal. Programme for strengthening knowledge and attitude of young adults on reproductive health and increasing awareness of the problems pertaining to sexual and reproductive health for young

adults and adolescents should be strongly supported. Basic information about HIV, RTI, STI, pregnancy, contraception, gender equality, etc should be shared with adolescents and young adults. The programme should be included in formal and informal education curricula so that young adults can acquire correct knowledge from reliable and socially accepted sources rather than so called magazines and pornography. Support of the people concerned such as parents, teachers, friends, professional NGOs, health care providers, etc should be ensured to enhance accurate knowledge and understanding and also to develop skill on reproductive and sexual health issues. Innovative use of existing youth organizations such as teenage clubs, youth clubs, sports clubs, church groups, and other youth organizations should be encouraged to provide relevant reproductive health information through specially trained volunteers. Furthermore, sensitize the policy makers, planners and programme managers about the significance of reproductive health programmes for youth and adolescents. The study also recommends for health education on reproductive health through educational institutions by fostering more open interactions between teachers and students and between peers.

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