



Perceptions of school adolescents students regarding education, reproduction health and pubertal changes in Aligarh district of U.P. (India)

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Abstract

Reproductive health is a crucial component of general health during adolescence and adulthood as the severity of problems faced during the time of puberty decides the health of next generation as well as the health of both males and females beyond reproductive years. A majority of young teenagers are still far from access of education on sexual and reproductive health and rights. This study attempts to understand the knowledge and perceptions of school-going adolescents regarding pubertal changes, pregnancy, abortion, menstruation (girls only), masturbation (boys only) and problems of reproductive health. A cross-sectional study was conducted in the urban area of Aligarh city of U.P. (India). It consists of 650 boys and 1022 girls of 9th and 11th standard of both Hindi and English medium schools. Both boys and girls are interviewed by a self-administered structured questionnaire maintaining high level of confidentiality. Adolescents of Hindi medium schools are more ignorant regarding sexual health than those of English medium schools. The majority of boys (65.8%) gather information on sex from internet websites and also by watching blue movies. Over two-third girls discuss their personal problems with their parents. Around one-fourth of boys have ever involved in sexual intercourse. Mean age at first intercourse is found to be 15.43 years and 14.95 years for boys and girls respectively, who were ever involved in sexual intercourse. Only 16.4% Hindi medium school boys know that father is responsible for the determination of gender of the child. Merely 60% girls have the knowledge about menstruation before it started and in most cases mothers give this information to their daughters.

Keywords: adolescence, sexual health, education/school, puberty, knowledge and perceptions, internet/media, computer, TV, Aligarh)

Introduction

Adolescents are the primary potential human resource for the development of any country. There are an estimated 1.2 billion adolescents in the world, which constitutes around 18% of the global population [1]. The huge share of world's adolescents, about 88% live in developing countries and almost one out of six adolescents is present in the least developed countries. India is the home of more than 243 million adolescents and they account for one-fourth of the country's population.[1] The United Nations (UN) defines adolescent as the individual of 10-19 years age. Adolescence is the transitional stage of life span between childhood and adulthood. The beginning of this critical developmental period is marked by the onset of puberty and is characterized by a dramatic physical, intellectual, hormonal and emotional change that affects the health of that person. [2] In this phase of life, brain experiences emotional independence and psychological and social responsibility and develops critical thinking skills.[3] Their body becomes mature for sexual reproduction, so they start making new relationships of intimate nature. Some adolescents experience their first sexual intercourse; some girls undergo unwanted adolescent pregnancies, early childbearing, unsafe abortions and some of them get married before age 18. According to a report Adolescent Pregnancy published in 2013 by World Health Organization (WHO) states that globally, 'about 16 million adolescent girls give birth each year-mostly in low and middle-income countries, and an estimated 3 million girls aged 15-19 undergo unsafe abortions every year [4].

Puberty begins actually when pituitary gland secretes a hormone that signals the body to release hormones estrogen and progesterone in girls between age 8-13 and testosterone in boys between ages 9-14. These are the inside changes that occur in the body during puberty. Besides above changes, the outside growth in boys includes the body becomes muscular, taller and stronger. Their sexual organs develop in size and testes are now able to produce sperm. Hair starts to grow around private parts of the body and those areas where hair have not developed yet like under the arms, pubic area, and chest. Their voice becomes broken and deepens. In addition to these, beard and moustache start to grow on their face, and they feel like a man. Most of them experience nocturnal ejaculation or wet dreams during sleep. In girls, these exterior changes include the development of breasts and starting of menstruation cycle which is known as menarche. Likewise boys, the girls become taller as their mothers, an increase in hip size and hair begin to develop in pubic area.[5] Feeling of self-independence and identity and attraction towards opposite sex take place as the psychological and emotional changes. They make some distance from their parents and expand their social circle in friends. At this stage, adolescents are amused about their bodily changes and they become moody, but they do not know the psychological consequences and reasons for these changes. So adolescents involve in sexual experimentations without knowing the outcome of the intercourse. Therefore, adolescents are most vulnerable to face sexually transmitted diseases (STDs) and HIV-AIDS at this stage.[6] Majority of young teenagers are still far from access to knowledge of education on sexual and reproductive health and rights. Also, they do not have access to knowledge of

preventive and curative service. In many developing countries, reproductive and sexual health issues are still considered forbidden subjects by social customs; thus at a school level, it prevents adolescents from getting adequate and accurate knowledge, guidance and services regarding the natural process of puberty, sexuality and reproductive health.^[7] The International Conference on Population and Development (ICPD) in 1994 first time addressed the adolescent sexual health issues and urged governments to remove the barriers of getting education on reproductive health information, rights and access to preventive and curative service.^[8] There are substantial efforts like Adolescent Reproductive and Sexual Health (ARSH) program, and the Adolescent Education Program (AEP) are implemented by the Government of India for filling the gap of knowledge of sexual and reproductive health issues.^[9] Researchers suggest that media and friends are the main sources of information about sexuality and reproductive health.^[10,11] Worldwide, young people attain puberty at an earlier age than before, and the average age at marriage is increasing. Therefore, they remain sexually mature for a longer period prior to marriage.^[12] In this manner, adolescents are exposed to the risk of involving in pre-marital sexual activities.^[13] A study in India showed that the level of knowledge and awareness about pubertal changes, menstruation, adolescent pregnancy, safe abortion and knowledge about the male sex organs, reproduction, etc., were low among adolescents.^[14] Unmarried female adolescents, who are not having correct knowledge of abortion services and the right to avail the services are likely to take help of inexperienced and unqualified doctors/persons. In this way, they increase the risks to their reproductive health and well-being.^[15] Past studies suggests that masturbation and pornography are the most common sexual behavior among male adolescents and many young male adolescents believe that excess nocturnal ejaculation cause harmful effect on health.^[16] Numbers of studies conducted in developing countries including India suggest that adolescents have substantial misconceptions related to their reproductive health and pubertal changes due to lack of sex education and access to correct information.^[10] Various studies conducted in countries of Asia, Latin America, and sub-Saharan Africa show that more than half of 15-19 year olds are not aware of the correct timing of the menstrual cycle, ovulation and when pregnancy risk is highest among females.^[17] So if we educate adolescents about their pubertal changes at an early age, it reduces the possible anxiety associated with this period, and this can help them to make a better choice for their sexuality.^[18] Aligarh is a traditional city with prevalent old customs and taboos which restrict adolescents to talk on matters of sexual health openly. The present study makes an effort to find the current gap in the knowledge and perceptions of school adolescent student

regarding reproductive behaviours pubertal changes and attitudes of teenagers in Aligarh District Uttar Pradesh (India). Recently the psychological and Social problems in school adolescent ^[19], nutritional minerals multivitamins used in adolescent diet ^[20], study on creativity and intelligence of adolescent students ^[22] etc have already studied.

Materials and methods

The present study is a school-based cross-sectional analytical study, conducted in the urban area of Aligarh district of Uttar Pradesh, a holy and traditional city of western Uttar Pradesh. The study sample consists of 650 boys and 1022 girls aged between 12 and 19 years of class 9th and 11th studying in Hindi/English medium government, private and semi-government schools. Data have been collected during December 2019. Both boys and girls are interviewed through a self-administered structured questionnaire in a confidential manner. A pilot study is also conducted to check the feasibility of the study and required changes in the questionnaire have been done. For the selection of different schools, simple random sampling technique is used and responses have been taken from all the students of class 9th and 11th of the selected schools. Before the start of the interview, consent has been received from students as well as their parents and school teachers for participating in the study with briefing them the need and purpose of the study. For maintaining confidentiality during the interview, teachers and parents are not allowed to be present there. This descriptive study is conducted to assess the knowledge and perceptions of school-going adolescents of Aligarh district regarding a wide range of topics like pubertal changes, pregnancy, abortion, menstruation (girls only), masturbation (boys only) and sexual health.

Results and discussions

It is reveals most of the boys and girls have identified noticeable external changes in their body as shown in Table -1. Almost two-thirds of boys and girls observed rapid gain in weight and height. About 72% boys and 75% girls noticed growth of hair under their arms. In Hindi medium schools, 65% of boys noticed growth of underarm hair, whereas, this percentage was more than 85% in English medium school. Among girls this percentage was almost same in Hindi and English medium schools. Further, 69% boys and 65% girls reported growth of hair in their pubic area. The proportion of adolescents responding white discharge from private parts is less (47%) in boys as compared to girls (61%). 74% girls noticed the development of breasts in their body and around 77% girls reported that they observed the onset of menstruation.

Table 1: percent distribution of teenagers’ responses regarding pubertal changes of Aligarh (U.P.)

Characteristics	Percent Positive Response of Male Teenagers			Percent Positive Response of Female Teenagers		
	Hindi Medium School	English Medium School	Total	Hindi Medium School	English Medium School	Total
Pubertal changes observed						
Rapid gain in weight and height	65.0	85.3	74.0	74.0	76.1	74.8
Growth of hair in underarms	59.5	87.6	71.6	70.1	82.7	75.1
Growth of hair in under pubic parts	52.2	89.0	67.8	59.5	73.0	64.9
White discharge from private parts	38.8	57.8	47.3	57.7	67.0	61.3
Development of breasts	NA*	NA*	NA*	67.4	84.4	74.2
Onset of menstruation	NA*	NA*	NA*	74.4	80.6	76.9
Total Count	303	347	650	614	408	1022

*MA = not applicable

In each observed pubertal change, we have observed that percentage of Hindi medium boys along with girls who reported their changes is less than that of the boys and girls who are in English medium schools.

Meaning of Sex

Table-2, describes the knowledge concerning correct meaning of sex. Only 39% boys and 26% girls said that it is distinction between male and female gender.’ However, merely 22% Hindi medium boys, 17% girls and 53%

English medium boys, 41% girls perceive the same. A large gap is observed between the percentage of English and Hindi medium male teenagers who believed that it is a distinction between male and female gender. Hindi medium teenagers have a smaller amount of knowledge as compared to English medium teenagers. Very few, around 7% Hindi medium boys and 20% English medium boys, answered intercourse as the meaning of sex, whereas, in case of girl respondents, 11% girls of Hindi medium school and 23% girls of English medium school defined intercourse as sex.

Table 2: Percentage Distribution of Teenagers’ Responses regarding Sexual Matters and Pregnancy of Aligarh (U.P.)

Characteristics	Percent Positive Response of Male Teenagers			Percent Positive Response of Female Teenagers		
	Hindi Medium School	English Medium School	Total	Hindi Medium School	English Medium School	Total
Meaning of sex						
Distinction between male & Female gender	22.3	52.8	38.8	16.5	40.6	26.1
Reproduction	17.5	19.4	18.5	9.7	16.0	12.2
Hugging or kissing the opposite sex	22.3	19.6	20.9	9.8	5.6	8.1
Love between opposite sex	18.9	30.2	25.0	6.5	12.2	8.8
Intercourse	6.5	19.6	13.6	10.7	22.6	15.4
Don't know	19.2	4.4	11.2	35.2	23.4	30.5
Source of information related to sex						
Magazine	19.2	37.0	27.2	28.7	39.0	31.8
Internet Website	18.7	42.6	29.4	14.0	24.0	17.0
Blue Movies	23.7	51.9	36.4	9.4	8.0	9.0
Don't Want to share	36.9	22.8	30.6	33.1	38.0	34.5
Discussing personal problems						
with parents	28.4	42.4	35.8	65.8	75.3	69.6
with friends	31.4	43.2	37.7	33.3	53.1	41.2
with parents and friends both	10.9	29.4	17.2	22.0	40.8	29.5
Sexual experience and views on pre-marital sex						
Ever experienced	35.1	13.3	23.0	11.5	5.0	9.1
Same sex activity (among ever sexually experienced)	39.3	27.5	35.5	39.1	28.6	36.7
Opposite sex activity (among ever sexually experienced)	60.7	72.5	64.5	60.9	71.4	63.3
Currently involved	23.7	11.2	16.9	6.6	5.0	6.1
Mean age at first sexual intercourse	15.47 years	15.36 years	15.43 years	15.10 years	14.38 years	14.95 years
Pre-marital sex is ok/moral	22.8	19.1	20.8	8.4	1.9	5.8
Pre-marital sex is risky	26.8	23.5	25.0	13.8	17.7	15.4
Knowledge about pregnancy						
Know who is responsible for determination of gender of child	16.4	47.2	33.1	26.9	61.6	40.8
Know how pregnancy occurs	39.4	62.9	52.4	30.9	64.8	44.4
Any sexual activity can impregnate the girl	31.4	23.8	27.2	11.6	12.3	11.9
Total Count	303	347	650	614	408	1022

We found a good fraction of Hindi medium teenagers (19% boys and 35% girls) who do not know the meaning of sex while a hardly 4% of English medium boys do not know the meaning of sex but this percentage in English medium girls is more than 23%.

Source of Information on Sex

It is found from Table-2 that porn movies are the most preferred source of information related to sex for Hindi as well as English medium male teenagers, whereas, among female adolescents, magazines are the key resource of information about sex. Results obtained from Rahman *et al* ^[23] advocate the same. A very small section of girls (9%) watches blue movies for the knowledge of sex. In each preferred source of information related to sex like

magazines, internet websites and blue movies, we found that English medium adolescents are more exposed to these materials in contrast to those of Hindi medium school. Around 31% boys and 35% girls do not want to share their key source of information on sex. Here, we also spotted that Hindi medium adolescents hesitate to answer their preferred source material on sex as compared to adolescents studying in English medium schools. Although pornography is legally banned in India, these materials are widely available on internet websites and in some magazines.

Who do you discuss personal problems with?

On the topic of discussing personal problems, it is observed that most of the girls (about 70%) discuss their personal problems with their parents (Table 2). Similar type of results

have also been suggested by Rahman, *et al.* [23] that parents are most preferred source for discussing personal problems of sexuality among young females. Apart from above, 41% girls are more comfortable in sharing of personal problems with their friends and 30% girls talk to parents as well as friends both about their personal problems. It is seen that around 17% boys share personal problems with parents and friends together which is much less than that of girl respondents. Boys of Hindi along with English medium school converse more with the friends in comparison to their parents in the matter of personal concerns and these results are also supported by (Singh BP *et al.*, [24] and Kotecha, *et al.*, [25]) Nowadays, the role of parents as a source of information is diminishing and friends assume a major role as a channel of information among teenage boys. Data also reveals that responses of Hindi medium school teenagers are under-reported to some extent.

Sexual Experience and Views on Pre-marital Sex

It is seen from Table 2 that Hindi medium school teenagers are involved in sexual activities more than those of English medium school. Around 35% boys and 12% girls of Hindi medium school have ever experienced sexual intercourse. In addition to above, 24% boys and 7% girls are currently in a relationship of intimate character. However, only 13% boys and 5% girls of English medium school are ever involved in sexual experience. Merely 11% boys and 5% girls of English medium school are currently immersed in sexual relationship. Amongst ever experienced sexual intercourse, mostly (more than 60%) adolescents have partner of opposite sex but it is worthwhile to mention that more than one-third adolescents who are in intimate relationships are homosexual. The mean age at first intercourse is found to be 15.43 years for boys and 14.95 years for girls but here we observed that English medium adolescents did not fully report their experiences. Findings of Rahman, *et al.* [23] strengthened our results that pre-marital sexuality is more prevalent among boys than girls. Table-2 shows that 21% of boys and 6% girls believe that pre-marital sex is ok/moral. We found a significant difference in the opinions of Hindi and English medium girls. Only 2% English medium school girl said that pre-marital sex is moral. 25% boys and 15% girls perceive that pre-marital sex is risky for health. So there is a need to improve knowledge about sexuality and reproductive health.

Knowledge about Pregnancy

Knowledge regarding pregnancy is observed here based on two aspects: (1) Who is responsible for determination of gender of child, (2) How pregnancy occurs (Table 2). Teenagers of English medium schools are more aware than those of Hindi medium schools. Female adolescents have greater knowledge concerning who is responsible for determination of gender of child. 47% boys and 62% girls of English medium schools correctly responded that father is responsible for determination of gender of the child, whereas, hardly 16% boys and 30% girls from Hindi medium schools know the correct answer. More than 62% school-going teenagers of English medium have correct understanding that pregnancy occurs when sperm and egg fuse together while this proportion is smaller (40% boys and 31% girls) among teenagers of Hindi medium schools. Shockingly, a significant share around 31% boys of Hindi medium schools and totally 27% boys and 12% girls have wrong perception that any sexual activity can impregnate the girl; however, it is found that misinformation is more prevalent among boys compared to girls.

Knowledge of Masturbation

Masturbation is a common sexual behavior of male teenagers. Data analyzed in Table 3 gives knowledge on the topic of masturbation among male adolescents and perceived myth about semen discharge. More than 80% boys have heard about masturbation. The knowledge regarding masturbation in Hindi and English medium school boys is found to be almost 75% and 85% respectively. Almost 12% boys perceived that masturbation leads to impotency while more than 13% thought that it causes deformity in sexual organ. About 11% school going boys have misconception that masturbation makes us sexually active. One-fourth of the boys from Hindi medium schools and one-third of boys of English medium schools perceived that excessive masturbation creates weakness in the body. It is evident from Singh *et al.* [20] There is a common notion among people that excessive masturbation may harm body and it makes a person weak. It has been found that 33% school-going boys of English medium thought masturbation as a natural practice during adolescence period; however, barely 11% boys of Hindi medium schools have the same perception.

Table 3: Percentage Distribution of Boys’ Responses regarding Masturbation and Semen Discharge on Aligarh district (U.P.)

Characteristics	Percent Positive Response of Male Teenagers		
	Hindi Medium School	English Medium School	Total
Knowledge about masturbation			
Yes	75.2	85.3	80.6
Perceptions on Masturbation			
Leads to impotency	8.9	14.1	11.7
Causes deformity in sexual organ	10.0	16.3	13.4
Makes us sexually active	7.1	14.1	10.8
It creates weakness in the body	24.1	36.1	30.5
Natural practice	10.7	33.4	22.9
Myths about semen discharge			
Sign of masculinity	17.9	46.1	32.9
Occurs due to exertion	7.4	9.9	8.7
Sign of good health	12.6	19.2	16.1
Sex-related problem	7.0	30.3	19.4
Due to excessive heat in the body	7.0	15.2	11.3
Total Count	303	347	650

Myths about semen discharge

Although start of semen discharge or nocturnal ejaculation is one of the natural pubertal changes observed in male adolescents, there are common myths about semen discharge prevalent among teenagers. It has been found in Table 3 that misconceptions are more prevalent among English medium school teenagers as compared to those of Hindi medium schools. 18% Hindi medium school-going male adolescents and a high share of boys from English medium background (46%) consider that semen discharge is a sign of masculinity. In total, only 9% think that it occurs due to exertion and about 16% assume that it is a sign of good health. 7% boys of Hindi medium background have misconception that semen discharge is a sex-related problem and it happens due to excessive heat in the body while more than 30% school-going adolescents of English medium schools believe that it is a sex-related problem and 15% think that it occurs due to excessive heat in the body. In many traditional societies, occurrence of nocturnal ejaculation or wet dreams is perceived as a sexual problem [26].

When should a girl have her first baby?

Table.4 represents the percentage distribution of girl's responses regarding the age of first child bearing and it is observed from the Table that merely 4% girls answered 'below 18' that means they may also not know the legal age of marriage for girls. 13% of the girls said '19-21 years' and most of the girls (39%) perceived '22-25 years' as the best suitable age for having first baby. Rest 26% girls think that it should be more than 26 years. Around 18% girls responded that they do not know. But it is clear that most of the girls have perception that suitable age of child bearing should be more than 21 years.

Knowledge about abortion

Here knowledge of abortion is focused on (1) meaning of abortion, (2) who should perform abortion and (3) when abortion is safe. Survey findings regarding knowledge of abortion shows that 61% Hindi medium school girls and 69% English medium school girls know about abortion as shown in Table 4.

Table 4: Percent Distribution of Girl's Responses regarding Age of First Child Bearing, Abortion, and Menstruation of Aligarh (U.P.)

Characteristics	Percent Positive Response of Female Teenagers		
	Hindi Medium School	English Medium School	Total
When should a girl have her first baby			
Below 18 years	4.1	3.0	3.7
19-21 years	12.4	12.2	12.5
22-25 years	40.4	36.8	39.2
26 and above	25.2	28.1	26.4
Don't know	17.2	19.9	18.2
Knowledge about abortion			
Yes	61.1	69.1	64.0
Who should perform abortion (A qualified/authorized doctor)	49.0	67.0	55.9
when abortion is safe (Up to 16 weeks of pregnancy)	26.3	51.9	36.3
Knowledge about menstruation before it started			
Yes	56.0	62.4	58.6
Who gave information about menstruation before it started			
Mother	60.1	60.5	60.3
Sister	14.6	11.3	13.2
Friends	12.2	12.5	12.3
Problems faced during menstruation			
Yes	56.4	54.5	55.6
Physical problems			
Headache	21.1	21.8	21.4
Stomach ache/cramps	50.3	69.0	57.5
Body ache	26.7	22.3	25.0
Tiredness/weakness	27.8	52.1	37.1
Laziness	27.0	40.1	32.0
Pain in legs	34.6	46.2	39.0
Pain in breasts	7.9	6.6	7.4
Gynecological problems			
Thin watery discharge	9.7	16.8	12.4
Thick cruddy discharge	8.5	13.2	10.3
Excessive bleeding	15.4	22.3	18.1
Discharge with foul smell	10.4	15.7	12.4
Extra (cancerous) growth with bleeding	7.9	6.1	7.2
Pain during bleeding	16.1	21.3	18.1
Painful urination	2.8	4.6	3.5
Psychological problems			
Fear	4.4	9.6	6.4
Anxiety	6.3	8.2	7.0
Weakness	35.3	46.7	39.7

Depression	10.1	14.3	11.7
Low self-esteem	7.9	4.1	6.4
Embarrassment	6.3	9.2	7.4
Messy	5.0	7.7	6.0
Irritation	8.6	30.3	16.9
Bad mood	27.5	44.9	34.2
Total Count	614	408	1022

Only 49% girls of Hindi medium background have the knowledge that abortion should be performed by a qualified/authorized doctor while this share in English medium school girls is found to be 67%. Hardly 26% Hindi medium school girls and more than 50% girls of English medium schools correctly responded that abortion is safe up to sixteen weeks of pregnancy.

Knowledge about menstruation and problems faced during menstruation

Table 4 reveals that about 56% Hindi medium school girls and 62% girls of English medium schools got knowledge related to menstruation before it started. Majority of the girls (60%) got information regarding menstruation from their mothers in both streams of school before it started and this result is also observed [25] Overall 13% girls obtained this information from their elder sister and 12% acquired from friends circle. It is worthwhile to mention that about 56% girls faced problems during menstruation. Among the females who have faced problems during menstruation overall about 58% girls observed stomach ache/cramps which is the highest % age among the physical problems faced by girls. It is 50% among girls of Hindi medium schools and 69% among English medium school girls. Regarding other physical problems encountered during menstruation, overall around 28% girls met with headache, 25% experienced body ache and only 7% girls reported that they have confronted with pain in breasts. Over 27% girls of Hindi medium background faced tiredness and laziness during menstruation period. However, the proportion of girls from English medium schools who faced tiredness during menstrual cycle is more than 52%.

About gynecological problems encountered by girls during menstrual cycle, it has been found that the response rate for each reported problem among girls of Hindi medium schools was lower than those of girls in English medium schools. Over 17% and 13% girls of English medium schools experienced thin watery and thick cruddy discharge during menstruation, respectively. During menstruation, more than 22% girls of English medium school confronted excessive bleeding, 21% bore pain during bleeding and merely 5% girls had faced painful urination.

From Table-4 while analyzing psychological problems faced, it is observed that more than 30% of girls who are studying in English medium school had irritation while only 9% girls from Hindi medium schools had ever faced irritation during menstrual cycle. Totally, more than 34% girls underwent bad mood during menses. Data show that the share of girls from Hindi medium schools felt lower self-esteem during menstruation in contrast to those of English medium school girls. The other commonly reported psychological problems include anxiety, depression and embarrassment. A similar study by Kotecha *et al.* [25] conducted in urban Vadodara city found that substantially higher proportion of girls in the older age groups of 14-16 years and 17-20 years knew the biomedical aspects like

periods during adolescence can be irregular, cramps and discomfort are normal, whereas, headache, mood swings and weakness are common and breasts become heavy and painful during bleeding.

On the whole, it is observed that adolescents of Hindi medium school are more ignorant about sexual health than those of English medium school and they feel shy in discussing and reporting their knowledge concerning sexual matters. It is assumed that the wealth standard of English medium school is high and they have easy access to the internet websites and blue movies. Thus, there must be a balance in the information obtained from the media and that acquired from teachers and parents because media always spreads dangerous unfiltered information which may promote sexual intercourse rather than cultivating knowledge regarding reproductive health. Although pre-marital sex is not accepted in the old traditional society like Varanasi, but our study reflects the reality. Parents feel that their child is not matured enough to be educated regarding these issues and they believe that their children will get information from the school. However, formal sex education is not given in schools of traditional societies like Varanasi. A study in Nepal illustrated that teachers are not prepared well and feel uncomfortable giving answers to sexuality matters. 'Most of the teachers did not want to deal with sensitive topics and feared censure by their colleagues and society and some have lack of skills to give such instruction.[27] Over the last two decades, many interventions have been designed, policies have been framed and implemented. Several researches have been done that address the adolescents' needs and rights. But there are still lots of mismatches in our knowledge and perceptions. In spite of the controversy regarding effectiveness of sexual health education, it has been established that the reproductive health awareness program improved the students' knowledge and behavior about sexuality, decision-making after the program for both girls and boys.[28] Sex education has been implanted thoroughly in other developed nations and several studies show that the level of awareness about sexual health in such countries is much higher than that in our country. In a study by Rahman *et al*[23] it was pointed out that schools reach a large number of children and can thereby play a vital role in spreading sexual and reproductive health education. Formal sex education does not increase sexual activities. Instead, it may help to delay the age at first intercourse thus lessening the occurrence of teenage pregnancies and abortions. Incorporation of formal sex education may help to remove the common misconceptions regarding pregnancy, masturbation and sexually transmitted diseases among school-going adolescents Aligarh District (U.P.)

Conclusions

The knowledge of school-going adolescents both boys and girls is weak about pubertal changes, reproductive health issues like masturbation, menstruation, pregnancy, and abortion. Hence, there is need to implement formal health and sex education program in school curriculum. However, Hindi medium school's adolescents require more care in this regard as compared to adolescents studying in English medium schools. Parents should have a healthy conversation with their children, and children should be informed about reproductive health and pubertal changes at a proper age. The teacher should play a connecting role between adolescent education program and students by explaining these topics within the course curriculum and by counseling them when they face any problem in a proper way. Since sexual subjects of male and female are different, hence separate sessions for health education in schools should be promoted so that both sexes feel free to discuss openly. It is also recommended that they must keep a check on the means of information that are accessed by adolescents Aligarh District of Uttar Pradesh (India).

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