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Assessment of knowledge and attitude on reproductive health among adolescents' girls of Manisha International School, Rajbandh, Durgapur

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Abstract
The World Health Organisation (WHO, 2017) identifies adolescence as the period of human growth and development that occurs after childhood and before adulthood, from 10 to 19 years of age. Reproductive health is defined as a state of complete physical, mental and social well-being in all matters relating to the reproductive system and its functions and processes. The period of adolescence for a girl is a period of physical and psychological preparation for motherhood. It is a period of physical, mental development and acquiring new capacities. It is the time of vulnerability to risky behaviour, which can have a lifelong consequence, especially on health, education and career. School is the place where adolescents get opportunities to share many personal doubts, perceptions with peers, have discussions with school friends and teachers; which is not possible if they do not go to school or go but stop going early in life. It is essential that there is some system for creating awareness in such girls. The research approach that is used in the study was quantitative approach. The research design applied for the present study was cross sectional descriptive design. The study was conducted among the adolescent girls of Manisha International School. Data was collected among the school going girls studying in class VIII, IX and X. Kupuswamy scale were used for collecting socio-demographic variables and 12 questions were set to assess the knowledge and 12 questions to assess their attitude towards reproductive health. Majority of participants in the present study belonged to nuclear family 26 (63.41%). The findings of the study indicated that majority of the study participants had Inadequate knowledge about the reproductive health 48.7%, while 51.3% had inadequate knowledge about reproductive health.

Keywords: Reproductive health, adolescence, knowledge, attitude, school-going-girls

Introduction

The International conference on population and development (IPCD) in 1994 was given an international consensus definition to sexual and reproductive health. It defined reproductive health as a state of complete physical, mental and social well-being in all matters relating to the reproductive system and its functions and processes [1]. Reproductive Health is a crucial part of general health and a central feature of human development. It does not start out from a list of diseases or problems-sexually transmitted diseases, maternal mortality-or from a list of programmes-maternal and child health, safe motherhood, family planning. Reproductive health instead must be understood in the context of relationships; fulfilment and risk; the opportunity to have a desired child or alternatively, to avoid unwanted or unsafe pregnancy [2].

The World Health Organisation (WHO, 2017) identifies adolescence as the period of human growth and development that occurs after childhood and before adulthood, from 10 to 19 years of age [3]. This period of adolescence is further categorised into three stages, namely early adolescence (10 to 13 years), mid adolescence (14 to 15 years) [4]. The period of adolescence for a girl is a period of physical and psychological preparation for motherhood [5]. It is a period of physical, mental development and acquiring new capacities. It is the time of vulnerability to risky behaviour, which can have a lifelong consequence, especially on health, education and career.

School is the place where adolescents get opportunities to share many personal doubts, perceptions with peers, have discussions with school friends and teachers; which is not possible if they do not go to school or go but stop going early in life. It is essential that there is some system for creating awareness in such girls [6].

Earlier a study in schools near the institute had revealed, low knowledge of menstruation, pregnancy and prevention of pregnancy [7, 9].

Phulambrikar M Rutuja, et.al conducted a study to assess the knowledge, attitude and practices regarding Reproductive and sexual health among school going adolescent in rural area of Maharashtra where 400 adolescents' girls had participated in the study. The knowledge, attitude and practices among the adolescents showed poor. The knowledge and attitude of 164 (41.0%) and 315 (78.8%) participants were respectively poor. The menstrual practices of 271 (67.8%) participants were poor [10]. Today, 1.2 billion adolescents stand at the crossroads between childhood and the adult world [11]. India has the largest population of adolescents in the world, with adolescent girls forming about 22% of the country's female population [12]. Most adolescent girls have many misconceptions about the physical and emotion changes taking place and lack access to age and sex appropriate health information, skills and services that add to their vulnerability. In India, even the mere mention of menstruation or sexual matters has been a taboo in the past and even to this date cultural and social influences appear to be a hurdle for inter-generation talk on these subjects. So, a major share of their knowledge comes from equally ill-informed peers, inauthentic information magazines and the internet. Decisions based on such half-cooked knowledge, experimentation and inability to seek proper advice may dire consequences. All these has a substantial impact on

girls and women's health, emotional state, mentality and lifestyle [13].

Considering this background, the present study has been undertaken to assess the knowledge and attitude regarding reproductive health of school going girls and to study the sources they use to obtain information on reproductive health.

Materials and Methods

A cross sectional descriptive study was conducted at Manisha International School, Rajbandh, Durgapur, India. The study was conducted among the high school girls studying in standard VIII, IX and X. 41 samples were selected based on inclusion and exclusion criteria. The sampling technique used for the study was stratified random sampling technique. It was use to collect the required no. of participants to form the sample for the study. Selected classes high school girls were divided into three strata based on their standard. Participants from each class was selected by lottery method.

Data was collected for the study over three weeks period. Structured questionnaires with multiple choice questions and closed-ended questions were used to collect the data from the sample. These questionnaires were pre-tested and pre-validated to ensure their reliability and validity. The questionnaires included questions related to their sociodemographic variables such as education of the family, occupation of the head of the family, total per capita monthly income of the family and for this Kupuswamy scale was used about demographic information, it consists of age in years, age of menarche, class, religion, type of family. The Questions on Reproductive Health were further divided to two domains. These domains were 12 sets of questionnaires to assess the knowledge of the students and 12 sets of questions to assess the attitude of the sample towards Reproductive Health.

Results and Discussion

A total of 41 high school adolescence girls were enrolled in this study. Majority of the participants (36.56%) were 13 years of age (Table 1). Different age groups were observed in different studies conducted by different researchers in this topic of interest. Nath Kalpana (2020) [14] found that majority of the study participants were of age group 14 years (48.9%). The present study showed the number of girls from a Hindu religion (83%).

Table 1: Age in years among school students

Age in years	Frequency (n)	Percentage %
13 years	15	36.5
14 years	6	14.5
15 years	13	32
16 years	7	17
Total	41	100.0

The age of attaining menarche was found to be 12 years in 39.02%, 13 years in 31.70%, 11 years in 17.07%, 10 years in 12.1% (Figure 1). Nath Kalpana (2020)[14] result reflected the age of attaining menarche to be 40% among 13 years of girls. Majority of participants in the present study belonged to nuclear family 26

(63.41%). The education of the head of the family of most of the study participants were under graduates 23 (56.09%). It is also showed that in the present study majority of the participants family per capita income were that of upper class 18 (43.90%). The study participants were mostly from class VIII and Class X, each class had the strength of 14 students, while 13 participants (31.70%) were from IX standard.

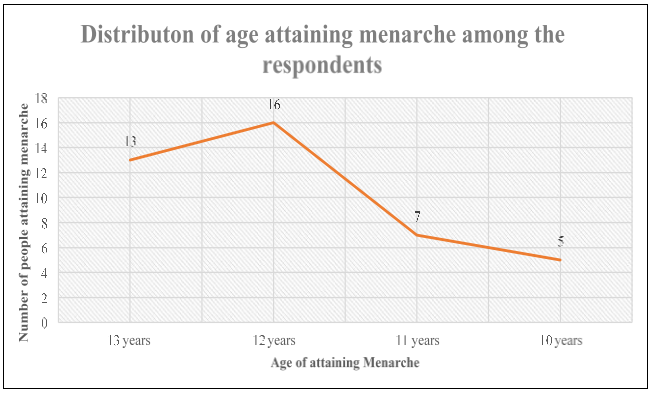

Fig 1: Age of attaining menarche.

The findings of the study indicated that majority of the study participants had Inadequate knowledge about the reproductive health 48.7%, while 51.3% had inadequate knowledge about reproductive health (Table 2). 82.9% of the study participants answered correctly about sex chromosome while only 26.8% of the study participants knew where fertilization took place. About 78.04% of the girls among the participants answered correctly that syphilis is one of the examples of sexually transmitted disease (STD). 85.3% of the study participants knew that the sanitary pads should be changed in every 6 hours during menstruation.

82.93% study participants did not know on which day ovulation occurs during the menstrual cycle. Only few 24.3% had knowledge about the hormone that plays major role in menstrual cycle. Only 14.7% knew that uterus has 3 layers. Majority of the students 56.09% answered incorrectly to whether protective barriers can prevent sexually transmitted diseases or not. 87.9% of the school girls knows that changes in puberty occurs before female than male. 90.2% had adequate knowledge that unprotected sexual intercourse and multiple sex partners are the mode of transmission of sexually transmitted disease. As many as 56.09% of selected students answered incorrectly about the age limit of the adolescence. The highest level of reproductive health related knowledge was about mode of transmission of sexually transmitted disease (Table 3).

Table 2: Knowledge Score of the Participants

Categories	Frequency	Percentage %
Inadequate knowledge (≥8)	20	48.7%
Adequate Knowledge (<8)	21	51.3%
Total	41	100

Table 3: Distribution of participants based on Knowledge Questionnaire Responses Regarding Reproductive Health

Knowledge Questionnaires	No. of participants given correct answer	No. of participants given incorrect answer
Sex chromosome consists of	34	7
Fertilization takes place in	11	30
Zygote consists of	33	8
Uterus has how many layers	6	35
How many times sanitary pads should be changed	35	6
What is the age limit of adolescence?	18	25
Changes in puberty occurs in	36	5
Ovulation occurs at ……th day of menstrual cycle (28 ± cycle)	7	34
Mode of transmission of sexually transmitted diseases are	37	4
Can protective barrier prevent STD?	18	23
Hormone that plays major role in menstrual cycle	10	31
Example of Sexually Transmitted Disease	32	9

In the study conducted by Deshmukh D Deepanjali *et al* (2020) [15] found that students with higher standard were found to have more knowledge about sexual and reproductive health. In our study we have also found that 57.15% (n=11) students of class X possessed adequate knowledge in all the areas of reproductive health.

In the present study there was no significant relationship between age and knowledge but there is evidence in the literature about the effect of age on knowledge among the students conducted by researchers in many studies.

However, in the study conducted by Ali et.al (2024) [16] in many of the Gulf countries, the average age at menarche ranges between 12.08 and 13.3 years and in our study the mean age of menarche was 13 years.

In the current there was no significant relationship between class and knowledge however in the study conducted by Biruk Beletew Abate (2019) [17] respondents who were 10 grades were more likely to have good level of knowledge on reproductive health issues compared to grade 9.

In the present study participants from nuclear family showed more percentage of adequate knowledge 53.8% as compared to the adolescents coming from joint family with only 46.66%. However, there is no significant relationship seen between type of family and knowledge of participants.

No significant correlation was seen between education and occupation of the head of the family of participants with their level of knowledge about reproductive health. There was no association between level of knowledge and socio demographic variables of the participants (Table 4).

However, A significant correlation was found between per capita income of the family with the attitude of the study participants with p value 0.05. No other associations were found between the socio demographic variables of the study participants with their attitude. (Table 5)

All the study participants believed that mood swings are very obvious in puberty. The attitude of the students towards reproductive health differed from one student to another. 97% of students had Favourable attitude towards Reproductive health while 3% had Neutral atttitude (Table 6).

Table 4: Association of Knowledge with socio demographic variables of the participants.

Variables		Knowledge		X2	Df	P value
		adequate	Inadequate			
Age in years	13 years 14 years 15 years 16 years	7 (42.86) 2 (33.35) 9 (69.3) 2 (28)	8 (57.14) 4 (66.65) 4 (30.7) 4 (72)	4.88	3	
Age of menarche	13 years 12 years 11 years 10 years	8 (61.53) 6 (37.5) 3 (42.8) 3 (60)	5 (38.46) 10 (62.5) 4(57.14) 2 (40)	2.08	3	
Class	VIII IX X	6 (42.85) 6 (46.15) 8 (57.15)	8 (57.15) 7 (53.85) 6 (42.85)	0.62	2	
Type of Family	Nuclear Joint	12 (46.15) 8 (53.34)	14 (53.85) 7 (46.66)	0.17	1	
Education of head of Family	Professional Graduate Others	3 (100) 6 (40) 9 (39.14)	0 9 (60) 14 (60.86)	4.138	2	
Occupation of head of family	Professional Others	9 (40.91) 10 (52.64)	13 (59.09) 9 (47.36)	2.98	1	
Per capita family income	Lower Upper lower Lower middle Upper middle Upper	0 3 (33.33) 1 (50) 7 (63.63) 9 (50)	1 (100) 6 (66.65) 1 (50) 4 (36.37) 9 (50)	2.8	4	

Table 5: Association of Attitude with socio demographic variables of the participants.

Variables		Attitude		X2	Df	P value
		Favorable	Neutral			

Age in years	13 years 14 years 15 years 16 years	11 73.34) 4 (66.66) 11 76.93) 6 (71.43)	4 (26.66) 2 (33.34) 2(23.07) 2 (28.57)	0.237	4	0.50
Age of menarche	13 years 12 years 11 years 10 years	10 (76.92) 14 (87.5) 3 (42.85) 3 (80)	3 (23.07) 2 (12.5) 4 (57.14) 1 (20)	4.7708	3	0.10
Class	VIII IX X	9 (64.28) 11 (84.61) 9 78.57)	5 (35.71) 2 (15.38) 12 (21.42)	2.4409	2	0.60
Type of Family	Nuclear Joint	18 (69.23) 13 (86.67)	8 (30.76) 2 (13.33)	1.56	1	0.50
Education of head of Family	Professional Graduate Others	2 (66.66) 13 (86.67) 10 69.56)	1 (33.34) 18 (13.34) 7 (30.43)	1.857	2	0.50
Occupation of head of family	Professional Others	14 (63.63) 16 (84.2)	8 (36.36) 3 (15.78)	2.17	1	0.50
Per capita family income	Lower Upper lower Lower middle Upper middle Upper	0 8 (88.88) 2 (100) 9 (81.82) 12 (66.66)	1 (100) 1 (11.12) 0 2 (18.18) 6 (33.34)	7.8	4	0.05

Table 6: Frequency and Percentage distribution of attitude of participants on reproductive health.

Questionnaire on Attitude of Participants on Reproductive Health		Frequency (N)	Percentage %
Mood swings are obvious in puberty	Yes No	41 0	100
Curiosity about reproductive system and opposite sex is common in adolescent	Yes No	29 12	70.8 29.2
Physical changes are one main characteristics of puberty	Yes No	38 03	92.6 7.4
Irritation and agitation are common during menstrual period	Yes No	39 02	95.12 4.88
It is necessary to maintain menstrual hygiene for every girl	Yes No	40 01	96.5 3.5
Over the counter pain killer medicine should not be taken during menstrual cycle	Yes No	31 10	75.7 24.3
Sexually transmitted diseases are not curable	Yes No	14 27	35 65
Sexually transmitted diseases can spread from mother to child	Yes No	25 16	61 39
Age is not an influencing factor for sexually transmitted diseases	Yes No	21 20	51.22 48.78
Do you think teen age pregnancy is risky	Yes No	41 0	100
Sex is not permitted in Indian culture	Yes No	10 31	24.3 75.7
Family planning along with pre conceptional counselling should be done properly for getting a child	Yes No	39 02	95.12 4.88
Total		41	100

Conclusion

The findings of the study highlight significant gaps in reproductive health knowledge among the adolescent participants. While some areas reflected a relatively higher level of awareness such as knowledge of Sexually Transmitted Disease (STD) transmission (90.2%) and awareness of puberty changes in females (87.9%) – the overall understanding of reproductive health concepts was inadequate in the majority. Less than half of the participants had correct knowledge about ovulation, menstruation hygiene practice, the role of reproductive hormone, and the age of adolescence. Misconceptions were particularly noted in areas such as Fertilization, use of Protective Barriers, and Identification of STDs. These results emphasize the urgent need for comprehensive, age-appropriate reproductive health education in schools to bridge the knowledge gap and promote informed, responsible attitudes among adolescents.

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Conflict of interest

None

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