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Assessment of Knowledge Regarding Reproductive Health among Adolescent Girls of Dayanand Sagar International School, Bangalore, Karnataka State, India

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Abstract: **Adolescence is the most pivotal period of life (13-19 years) which is susceptible to major reproductive health problems at the time of puberty; hence it is a major concern. Reproductive ill health accounts for over 30% of the overall burden of disease and disability among women and 12% among men globally. This study was aimed to assess the knowledge level of reproductive health and find out association with the selected demographic variables among adolescents girls of Dayanand Sagar International School, Bangalore. The study is non experimental and descriptive in nature which was conducted in a Dayanand Sagar International School, Bangalore, Karnataka State, India. Thirty samples were selected by simple convenient sampling method from 8th and 9th standards and a structured questionnaire was provided to collect data regarding knowledge related to reproductive health. The result of the study revealed that the adolescent girls' knowledge on over all aspects of reproductive health was moderate (72.2%). Majority of the subjects (76.6%) have adequate knowledge of anatomy and physiology of the reproductive system. About 66.6% have moderate knowledge regarding menstruation and menstrual hygiene. Most of them (76.6%) have maximum knowledge in the area of pregnancy and care whereas moderate knowledge in the area of family planning and STDs.**

Keywords: **Assess, Knowledge, Adolescents, Menstruation, Reproductive Health.**

I. INTRODUCTION

The world health organization (WHO) defines an adolescent as any person between ages 10 and 19 [1, 2]. According to UNICEF, there are 243 million adolescents comprising 20% of the total population of India and their numbers are expected to increase over time [3]. Reproductive health of adolescence is crucial since it determines the health of future generations to come. Major components of reproductive ill health among them include menstrual hygiene related problems, consequences of early marriages, unsafe abortion, high risk behavior, lack of awareness about contraception and reproductive health issues, RTIs/STIs including HIV/AIDs and non-consensual sex. More than 1.1 million adolescents aged 10-19 years died in 2016, over 3000 everyday, mostly from preventable or treatable causes [4].

The survey conducted by MCH, family planning, ministry of health and family welfare in India reported that the fertility rate of rural and urban adolescence in the age group of 15-19 years is 97% and 57.2% respectively. Studies in several countries have shown that the risk of death during childbirth is higher among adolescent than adult women. The reproductive health needs of adolescents as a group have been largely ignored to date by existing reproductive health services. Majority of adolescents still do not have access to information and education on sexuality, reproduction, sexual and reproductive health and rights, nor do they have access to preventive and curative services [5].

In INDIA 19% girls and 35% boys had comprehensive knowledge about HIV/AIDS. Only 15% young men and women (15-24yrs) reported that they received family life or sex education. Eventually due to inadequate knowledge they are at greater risk of exposure to unprotected sex, unethical sexual practice and STIs. In the age of 15-19yrs, among those who had sexual intercourse, 10.5% of girls and 10.8% of boys reported having STI or symptoms of STI and 0.7% of girls and 0.01% of boys were found to be HIV positive. The awareness regarding transmission of STI is low among adolescents. This in addition to social stigma the diseases were often undisclosed, left untreated leading to complications like infertility, pelvic inflammatory disease and cancer [6].

The goal of achieving health for all which, India is committed to would certainly not be feasible without priority to the vulnerable group in which the future of any society depends upon the character of competence of its youth. Ideally a well-informed parent who communicates well with an adolescent girl can provide this information. But in our culture still parents hesitate to talk about these matters with children. A study about reproductive health awareness among rural school going adolescents, it was found that only 31% of boys and 33% of the girls mentioned that they had heard about contraception. Nearly 50% of the adolescents knew changes that marked boys entering into adulthood and girls entering into womanhood [7].

A study of the knowledge regarding reproductive health among the second PUC students from the colleges of Bangalore city, they found that overall knowledge of science students about reproductive health was 34.56% and non -science students was 27.7 % [8]. Considering the above factors and going through various studies, the investigator felt that there is a need to assess knowledge on reproductive health and this will help to know more about the risk population of reproductive illnesses, the socio-demographic factors responsible for poor knowledge level.

II. MATERIALS AND METHODS

A. Design, Setting and Sampling Technique

A school based experimental descriptive cross-sectional design study was conducted to assess the adolescent's knowledge about reproductive health in Dayanand Sagar International School, Bangalore, Karnataka State, India.

This study consists of a sample of 30 students studying in 8^{th} and 9^{th} standard selected by simple convenient sampling. Age, educational status, occupational status, income of parents, source of knowledge about reproductive health were demographic variables of the study which were the independent variables whereas level of knowledge related to reproductive health was the dependent variable respectively.

B. Data Collection Method

Data collection was done using an interview administered questionnaire that was written in English. After permission and verbal consent of participants, it ensures that the study is ethically conducted, objectives and benefits of the study were explained and confidentiality of the information was strictly ensured. The data was collected in a time period of 3 days.

C. Data Analysis

The data analysis was carried out through descriptive and inferential statistics. The basic statistical techniques such as mean, frequency, percentage of described demographic variables were computed and interpreted suitably. Chi square test was used to find out association between the knowledge and selected demographic variables.

D. Ethical Consideration

Permission was obtained from the ethical review committee of Dayananda Sagar University and authorities of the Dayanand Sagar International School. Written and verbal consent also was provided to the study subjects. Subjects were instructed to read and sign the written consent which was attached with the questionnaire as per their choices.

III. RESULTS

A. Socio-demographic Characteristics of the Study Participants

The socio-demographic characteristics of the respondents presented in table I. The distribution of participants by education (where, 50% of the respondents belong to 8^{th} standard and 50% respondents belong to 9^{th} standard). The majority of the respondents (53.3%) belong to Muslim and 46.67% of respondents belongs to Hindu by religion. All of the respondents reside in the urban area. The majority (60%) of the respondent's fathers have done their graduate and above. Whereas, 43.3% of the respondent's mothers have done their graduate and above. Majority (43.3%) of the

respondent's fathers are private employees. Whereas, 80% of the respondent's mothers are housewives. The majority of respondents (83.3%) have family income of 10000-20000. The 90% of respondent's age at menarche was 11-13years. All the respondents have previous knowledge regarding reproductive health. The 60% of respondents got information about the topic from friends, family and teachers.

TABLE I: DISTRIBUTION OF DEMOGRAPHIC VARIABLES AMONG THE RESPONDENTS (n=30)

	Items	Frequency	%
01	**Age**		
	13-14 years	24	80
	15-16 years	6	20
	Total	30	100
02	**Educational Qualification**		
	8th standard	15	50
	9th standard	15	50
	Total	30	100
03	**Religion**		
	Hindu	14	46.67
	Muslim	16	53.3
	Christian	0	0
	Others	0	0
	Total	30	100
04	**Residence**		
	Urban	30	100
	Semi urban	0	0
	Rural	0	0
	Total	30	100
05	**Fathers education**		
	Primary education	4	13.3
	Secondary education	6	20
	PUC	2	6.6
	Graduate and above	18	60
	Total	30	100
06	**Mothers education**		
	Primary education	3	10
	Secondary education	8	26.6
	PUC	6	20
	Graduate and above	13	43.3
	Total	30	100
07	**Fathers occupation**		
	Government employee	5	16.6
	Private employee	13	43.3
	Own business	10	33.3
	Others	2	6.6
	Total	30	100
08	**Mother's occupation**		
	Government employee	0	0
	Private employee	6	20
	Own business	0	0
	House wife	24	80
	Total	30	100
09	**Family Income**		
	< 10000	5	16.6
	10000-20000	25	83.3
	20000-30000	0	0
	>30000	0	0
	Total	30	100
10	**Age at menarche**		
	Before 11 years	3	10
	11-13 years	27	90
	15-30 years	0	0
	After 30- years	0	0
	Total	30	100
11	**Previous knowledge**		
	Yes	30	100
	No	0	0
	Total	30	100
12	**Source of information**		
	Electronic Media	3	10
	Printed media	2	6.6
	Friends/Family/Teachers	18	60
	Others	7	23.3
	Total	30	100

B. Knowledge on Anatomy and Physiology of Reproductive Health

The majority (76.6%) of respondents have adequate knowledge regarding anatomy and physiology of the reproductive system (Table II).

TABLE II: FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONDENTS REGARDING KNOWLEDGE ON ANATOMY AND PHYSIOLOGY OF REPRODUCTIVE HEALTH (N=30)

No.	Level of knowledge	Dimensions	Frequency	Percentage
1	Inadequate	<50%	2	6.66
2	Moderate	50-75%	5	16.6
3	Adequate	>75%	23	76.6
	Total	**100%**	**30**	**100**

C. Knowledge Regarding Menstruation and Menstrual Hygiene

The 63.3% of respondents have moderate knowledge regarding menstruation and menstrual hygiene (Table III).

TABLE III: FREQUENCY AND PERCENTAGE OF RESPONDENT'S KNOWLEDGE REGARDING MENSTRUATION AND MENSTRUAL HYGIENE (n=30)

No.	Level of knowledge	Dimension	Frequency	Percentage
1	Inadequate	<50%	2	6.66
2	Moderate	50-75%	19	63.3
3	Adequate	>75%	9	30
	Total	**100%**	**30**	**100**

D. Knowledge Regarding Pregnancy and Care

The 76.6% of respondents have adequate knowledge regarding pregnancy and care (Table IV) related aspects.

TABLE IV: FREQUENCY AND PERCENTAGE OF RESPONDENT'S KNOWLEDGE REGARDING FAMILY PLANNING AND STD (n=30)

No.	Level of knowledge	Dimension	Frequency	Percentage
1	Inadequate	<50%	2	6.66
2	Moderate	50-75%	5	16.6
3	Adequate	>75%	23	76.6
	Total	**100%**	30	100%

E. Knowledge Regarding Family Planning and STD

The 60% of respondents have moderate knowledge regarding family planning and STD (Table V).

TABLE V: FREQUENCY AND PERCENTAGE OF RESPONDENT'S KNOWLEDGE REGARDING FAMILY PLANNING AND STD (n=30)

No.	Level of knowledge	Dimension	Frequency	Percentage
1	Inadequate	<50%	11	36.6
2	Moderate	50-75%	18	60
3	Adequate	>75%	1	3.33
	Total	**100%**	**30**	**100**

F. Analysis of the Knowledge Score and Its Association

The analysis of the knowledge score and its association between the selected demographic variables (Table VI) reveals that, the score of knowledge over 6 categories of age of adolescent girls, their educational status, religion, parents' education and source of education was found to be significant at the 0.05 level (P<0.05). This implies that knowledge is

significantly increased with age, educational status, religion, parents' education and a source of information. The score of knowledge over 6 categories i.e. residence of the subjects, parent's occupation, Family income, age at menarche, previous knowledge on reproductive health was found to be non significant at the 0.05 level (P<0.05).

TABLE V: ASSOCIATION BETWEEN KNOWLEDGE SCORE WITH THE SELECTED DEMOGRAPHIC VARIABLES (n=30)

Demographic Variables	Categories	Knowledge Score	Chi-square Values	df	*P*-value	Inference
Age in Years	13-14	24	6.56	2	>0.05	ns
	15-16	6				
Educational Status	8th Standard	15	13.47	2	>0.05	ns
	9th Standard	15				
Religion	Hindu	14	16.16	6	>0.05	ns
	Muslim	16				
	Christian	-				
	Others	-				
Residence	Urban	30	0	4	<0.05	S
	Semi urban	0				
	Rural	0				
Father's Education	Primary	4	23.5	6	>0.05	ns
	Secondary	6				
	PUC	2				
	Graduate & Above	18				
Mother's Education	Primary	3	16.36	6	>0.05	ns
	Secondary	8				
	PUC	6				
	Graduate & Above	13				
Father's Occupation	Govt. Employee	5	12.37	6	<0.05	S
	Private Employee	13				
	Own Business	10				
	Others	2				
Mother's Occupation	Govt. Employee	0	5.98	6	<0.05	S
	Private Employee	6				
	Own Business					
	House Wife	24				
Family Income	<10000	5	6.85	6	<0.05	S
	10000-20000	25				
	20000-30000	0				
	>30000	0				
Age at Menarche	< 11 Years	3	0.76	6	<0.05	S
	11 to 13 Years	27				
	15 to 30 Years	0				
	> 30	0				
Previous Knowledge about Reproductive Health	Yes	30	0	2	<0.05	S
	No	0				
Source of Information	Electronic Media	3	24.09	6	>0.05	ns
	Printed Media	2				
	Friends & Family	18				
	Others	7				

ns: Non significant and S: Significant

IV. DISCUSSION

The analysis of the collected data revealed that most of the adolescent girls (53.3%) belong to Muslim religion. With regard to residence all of them reside in the urban area. On the basis of the parents' education, it reveals that most adolescent girls father (60%) and mother (43.3%) are graduated. Distribution of adolescence according to parent's occupation, reveals that the majority of Most of the subject's father (43.3%) are private employees and mothers (80%) are housewives. Majority (83.3%) of girls' family income is about Rs.10000-20000 The analysis also reveals that almost 90% of the subjects have attained menarche at age 11-13 years, it is consistent with the findings of other studies [9-11]. All of the subjects had previous knowledge on reproductive health before its onset which was coherent with the previous findings [12-13]. Regarding the source of information, it reveals that 60% of adolescent girls gained knowledge from friends / family /teachers and these results are in consistent with Sapkota et al., [14].

According to the analysis, it was found that the majority of the subjects (76.6%) have adequate knowledge about anatomy and physiology of the reproductive system, our results are in contrast with the study conducted in Ghana [15]. The study conducted by Juyal *et al*., [16] showed that 29.1% of the girls were having knowledge about the reproductive system as the source of bleeding. Personal hygiene practices such as hand washing, bathing, and cleaning private parts regularly play a vital role in safeguarding oneself from infections. Simple hand washing with soap and water during period of menstruation and after using toilet can be beneficial. About 66.6% of adolescent girls have moderate knowledge regarding menstruation and menstrual hygiene [17, 18]. Around 76.6% have adequate knowledge in the area of pregnancy and care, which is more when compared to other studies undertaken in Belagavi and Udupi [19, 20]. About 60% have moderate knowledge in the area of family planning and STDs, which was slightly high when compared to a study done in South Delhi [21]. The mean score of the knowledge of adolescent girls on various aspects of reproductive health was 72.2% [22]

The analysis of the knowledge score and its association between the selected demographic variables reveals that, the residence of the subjects, parent's occupation, family income, age at menarche, previous knowledge on reproductive health was found to be significant at the 0.05 level ($P<0.05$). A study done by Madhavan [23] in urban and rural Kerala found that lower menarcheal age in urban area was attributed to socioeconomic status. The age at menarche and its inverse relationships with the socio-economic status is consistent with our finding findingd [24].

V. CONCLUSIONS

Overall knowledge score of the adolescent girls regarding selected aspects of reproductive health was good (72.2%). The study also showed that socio demographic variables such as fathers education mothers education, occupation , type of residence etc. are significantly related to the knowledge level of adolescent girls. This indicates that a health education program must not be provided in the selected school.

RECOMMENDATIONS

1. A similar study may be done using a large sample, thereby findings can be generalized.
2. A similar study can be conducted in other areas of reproductive health.
3. A similar study can be conducted in a school in a rural area.
4. A study can be conducted to find out the attitudes of students and parents regarding reproductive health.
5. Educational programme regarding reproductive health can be conducted by the community health sector.

Implications

The following implications have been drawn from the study, which are vital concern for nursing practice, nursing administration, nursing education and recommendations for using research:

Nursing Service: As a service provider nurses play a vital role in creating awareness about the importance of reproductive health among adolescents girls. And also health care institutions should conduct mass education programmes to remote areas.

Nursing Education: As a nurse educator, nurses can insist more about the importance of reproductive health in the curriculum and also she should emphasize more on the recent aspects of national health policies and population policies.

3. Nursing Administration: As an administrator, she can organize education programs to the adolescent girls about the recent aspects of reproductive health.

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