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Knowledge Regarding Sexually Transmitted Diseases among Adolescent Girls Studying in Selected Pre University Colleges, Bangalore, India

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Abstract:
Background*: Sexually Transmitted Infections (STIs) are among the most common communicable diseases and affect the health and lives of women, men, and babies worldwide. More than 1 million Sexually Transmitted Infections acquired worldwide every day. Sexually Transmitted diseases (STDs) are an important global health priority because of their devastating impact on women and infants and their inter-relationships with HIV/AIDS. Women are vulnerable to STDs for social and economic reasons. Compared with older adults, sexually active adolescents aged 15–19 years and young adults aged 20–24 years are at higher risk of acquiring STDs for a combination of behavioral, biological, and cultural reasons.*
Materials and Methods*: This descriptive study was conducted to assess the knowledge of Adolescent girls regarding Sexually Transmitted Diseases. About 100 adolescent girls studying in selected Pre University Colleges were selected for the study by non- probability purposive sampling technique and data was collected using structured knowledge questionnaire. An Informational Booklet was prepared and distributed to the study participants after the administration of the questionnaire.*
Results*: The results revealed that majority (68%) of the participants had moderate knowledge, 23% had inadequate knowledge and the remaining 9% had adequate knowledge. There was a significant association between knowledge scores of adolescent girls and the education status of their mothers as evidenced by* χ^2 *=13.731(12.592, 6df, P<0.05) at 0.05 level of significance.*
Conclusion: *The researcher concluded that there is a lack of knowledge regarding Sexually Transmitted Diseases among adolescent girls. There is a need of creating awareness regarding Sexually Transmitted diseases among the young adults.*
Key Word*: STDs, Sexually Transmitted Diseases, Adolescent girls, Knowledge, Venereal Diseases, Information Booklet*

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I. Introduction

Sexually transmitted diseases (STDs) are infections transmitted from an infected person to an uninfected person through sexual contact. STDs can be caused by bacteria, viruses, or parasites. Examples include gonorrhea, genital herpes, human papillomavirus infection, HIV/AIDS, chlamydia, and syphilis. STDs are an important global health priority because of their devastating impact on women and infants and their inter-relationships with HIV/AIDS. STDs and HIV are linked by biological interactions and because both infections occur in the same populations. Infection with certain STDs can increase the risk of getting and transmitting HIV as well as alter the way the disease progresses. In addition, STDs can cause long-term health problems, particularly in women and infants. Some of the health complications that arise from STDs include pelvic inflammatory disease, infertility, tubal or ectopic pregnancy, cervical cancer, and perinatal or congenital infections in infants born to infected mothers[1]. Anyone can get a STD. Teenagers and young adults have the highest risk[2]. Women are vulnerable to STDs for social and economic reasons[3]. Compared with older adults, sexually active adolescents aged 15–19 years and young adults aged 20–24 years are at higher risk of acquiring STDs for a combination of behavioral, biological, and cultural reason[4]. Sexually Transmitted Infections (STIs) have a profound impact on sexual and reproductive health worldwide. More than 1 million STIs are acquired every day[5]. Every year about 6% of adult population in India is infected with Sexually Transmitted Infections.

Between the years 2007 and 2017 a total of 34.9 million episodes of Sexually Transmitted Infections and Reproductive Tract Infections were treated[6].

II. Material And Methods

Objectives:

The objectives of the study are to:

- assess the level of knowledge of adolescent girls regarding sexually transmitted diseases.
- determine an association between knowledge of adolescent girls regarding sexually transmitted diseases with their selected socio demographic variables.
- prepare an information booklet regarding sexually transmitted diseases for adolescent girls.

Hypothesis:

The following hypothesis will be tested at 0.05 level of significance:

H_1: There is a significant association between knowledge of adolescent girls regarding sexually transmitted diseases and their selected socio demographic variables.

This descriptive study was carried out on 100 adolescent girls studying in two Pre University Colleges namely, Lowry Memorial Pre-university College, Dooravaninagar, Bangalore, Karnataka, India and Seventh Day Adventist Pre University College, Spencer Road, Bangalore, Karnataka, India from December 2014 to February 2015. A total of 100 adolescent girls aged 15 to 18 years were selected for the study.

Study Design: Non- experimental Descriptive study Design

Study Location: Lowry Memorial Pre- university College, Dooravaninagar, Bangalore, Karnataka and Seventh Day Adventist Pre University College, Spencer Road, Bangalore, Karnataka, India.

Study Duration: December 2014 to February 2015.

Sample size: 100 Adolescent girls.

Sample size calculation: There are many approaches to determine the sample size, such as using a census for small population, using a sample size of similar studies, using published tables or applying formulas to calculate a sample size. In this study the sample size was calculated using the sample size of similar studies. We assumed that the confidence interval of 5% and confidence level of 95%. The sample size actually obtained for this study was 100 adolescent girls.

Subjects & selection method: The subjects included for the study were 100 adolescent girls studying in the selected Pre university Colleges, Bangalore, India. The study participants were selected using non- probability purposive sampling method.

Inclusion criteria:

1. Adolescent girls
2. Studying in selected Pre university Colleges
3. Aged 15-18 years,
4. Able to communicate in English
5. Available during the time of data collection

Exclusion criteria:

1. Adolescent girls who are not willing to participate in the study
2. Adolescent girls who have participated in similar studies within 6 months prior to data collection

Data Collection Tool:

The tool used in the study is structured knowledge questionnaire to assess the knowledge regarding sexually transmitted diseases among adolescent girls and it was developed based on the objectives of the study, relevance, and the opinion of the experts. The following steps were followed prior to the development of the tool:

1. Preparation of the blue print
2. Content validity of the tool and informational booklet.
3. Pretesting of the tool, informational booklet and the Reliability.
4. Description of the final tool and the booklet.

1. Preparation of the blue print: An extensive review of literature and discussion with guide, co guide and the subject experts was carried out. The investigator then prepared the blueprint of the proposed tools. The tool consists of two parts: part – 1 and part – 2. Part - 1 consists of sample characteristics consisting of eleven items and part – 2 consists of five sections. Section- A consists of eight questions related to sexually transmitted diseases, section– B consists of eight questions related to HIV infections, section – C consists of eight questions related to syphilis, section- D consists of eight questions related to gonorrhea, section- E consists of eight questions related to prevention of sexually transmitted diseases. An information booklet was prepared for the

study consisting of information related to sexually transmitted diseases. Thus, it helps the adolescent girls to gain knowledge regarding sexually transmitted diseases.

2. Content validity of the tool and information booklet: Criteria checklists for the validation of the tool and the information booklet was prepared with very relevant, relevant, needs modification , not relevant and remarks column for the valuators to place a tick mark depending on the appropriateness and the relevance of each item. The area in the criteria checklist of information booklet was formulation of objectives, selection of the content and the organization of the content, language and practicability. Content validity of the tool and the information booklet was established by 10 experts, who comprised of 7 nursing experts, 3 doctors and instruments were sent with a criteria checklist to aid in the validation and a validation certificate was obtained. Few suggestions were given by the evaluators were to change the questions which gave similar answers. The suggestions of the experts were considered and the tool was modified after the content validation.

3. Pilot Study/Pretesting of the tool informational booklet and the reliability: Pre testing of the validated tool was done on 10 students who were excluded from the main study after assuring that they have fulfilled the inclusion criteria. All the items of the tool were found to be understandable by the participants of the pre test. The pilot study did not show any flaw in the study design and the study was found to be feasible. The reliability of the structured knowledge questionnaire was established by split half method and Karl Pearson's Correlation Coefficient formula. The reliability coefficient of the structured knowledge questionnaire was found to be highly reliable, r= 0.87.

4. Description of the final tool and the booklet: The final tool consists of two parts part – 1 and part – 2. Part - 1 consists of sample characteristics consisting of twelve items and part – 2 consists of five sections:

Section- A consists of eight questions related to sexually transmitted diseases
Section- B consists of eight questions related to HIV infections,
Section- C consists of eight questions related to syphilis,
Section- D consists of eight questions related to gonorrhea,
Section- E consists of eight questions related to prevention of sexually transmitted diseases.

Totally there are 40 questions in the knowledge level. The final copy of the information booklet consisted of general information regarding sexually transmitted diseases, risk factors, ways it spread, ways it does not spread, information related to selected sexually transmitted diseases like HIV, syphilis, gonorrhea, and prevention of sexually transmitted diseases.

Scoring and Interpretation

The items were phrased in a multiple choice form with three options as distracters and one correct response. Correct response is given a score of one mark and wrong response is given a zero score. Thus the maximum score is 40. The resulting score is graded as

Adequate Knowledge	30-40	< 75 %
Moderately Adequate Knowledge	20-30	51-75%
Inadequate	0-20	< 50%

Procedure methodology

The data was collected from December 2014 to February 2015. Permission was obtained from the concerned authorities for conducting the study. Written consent was obtained from the participants after assuring the confidentiality and providing them with clear explanation. A structured knowledge questionnaire was distributed to the samples that were selected based on the inclusion and exclusion criteria. Sufficient explanations were given if they found the questions difficult to follow. After completing the questionnaires, informational booklets were distributed.

Statistical analysis

Data was analyzed using SPSS version 16 (SPSS Inc., Chicago, IL). The data obtained was analyzed using both descriptive and inferential statistics on the basis of objectives and hypothesis of the study. Socio demographic data containing sample characteristics would be analyzed using frequencies and percentage. The knowledge scores was calculated by using mean and standard deviation. Association of socio demographic variables with the obtained knowledge score was analyzed using chi square test. The level of significance was kept at ≤ 0.05 level.

III. Result

The collected data was analyzed using descriptive and inferential statistics. The socio-demographic characteristics of the samples were organized using tables and graphs:

Table no. 1 depicts the classification of adolescent girls by age and religion. The findings indicate that majority of the samples , 32 % (32 out of 100) were 17 years of age, 30% (30 out of 100) were 16 years, 20% (20 out of 100) were 15 years, and 18 % (18 out of 100) were 18 years. With regard to religion it is observed that 56% (56 out of 100) were Christians, 36% (36 out of 100) were Hindus, and 8% (8 out of 100) were Muslims.

Table no 1: shows the frequency and percentage distribution of adolescent girls according to age and religion.

N=100

Characteristics	Category	Respondents	
		Number (N)	Percent (%)
Age	15 years	20	20.0
	16 years	30	30.0
	17 years	32	32.0
	18 years	18	18.0
Religion	Hindu	36	36.0
	Christian	56	56.0
	Muslim	8	8.0

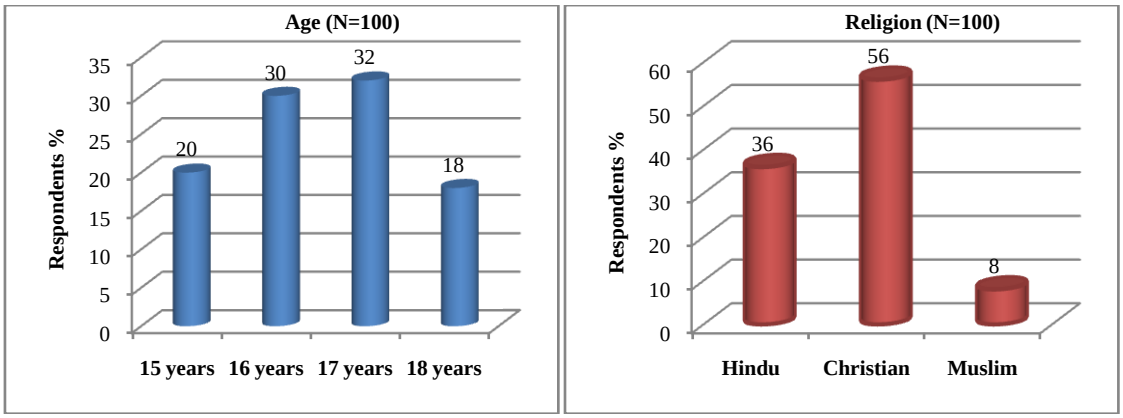


Table no 2 shows the classification of adolescent girls according to type of family and place of residence. It was observed that majority, 64% (64 out of 100) belonged to nuclear family, 28% (28 out of 100) belong to joint family and 8% (8 out of 100) belong to extended family. It is observed that majority of the samples 83% (83 out of 100), were residing in urban area and only 17% (17 out of 100) were residing in rural area.

Table no 2: shows frequency and percentage distribution of adolescent girls according to type of family and place of residence.

N=100

Characteristics	Category	Respondents	
		Number(N)	Percent(%)
Type of family	Nuclear	64	64
	Joint	28	28
	Extended	8	8
Place of residence	Urban	83	83
	Rural	17	17

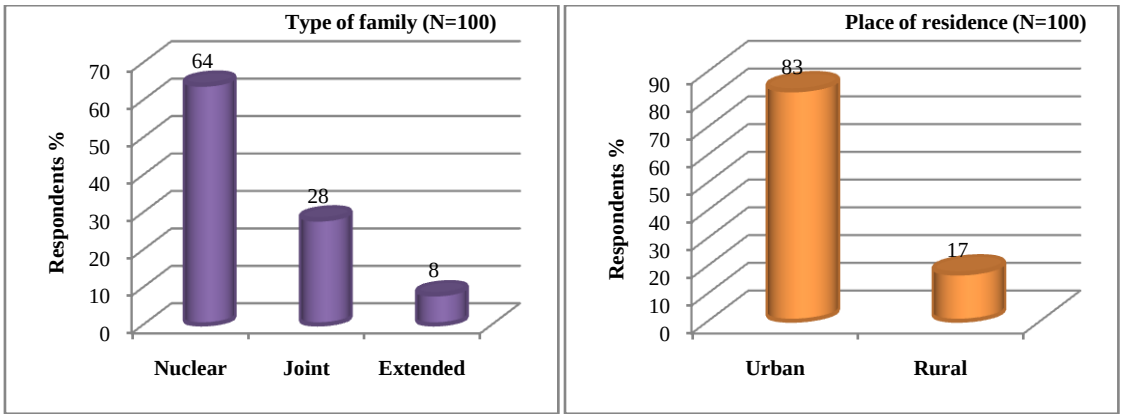
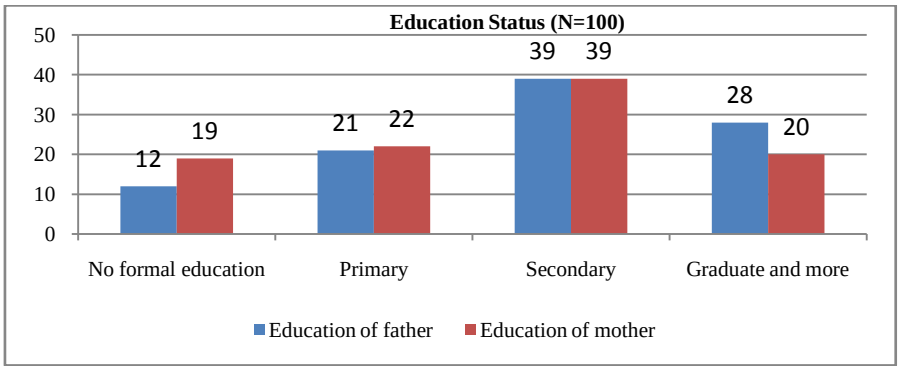


Table no 3: classification of adolescent girls according to Education status of father and Education status of mother. With regard to the education of the father 39% (39 out of 100) had secondary education, 28% (28 out of 100) are graduates, 21% (21 out of 100) had primary education and only 12% (12 out of 100) did not have any formal education. Further regarding the education of the mother majority 39% (39 out of 100) received secondary education, 22% (22 out of 100) received primary education,20% (20 out of 100) are graduates, 19% (19 out of 100) have not received any formal education.

Table no 3: shows the frequency and percentage distribution of adolescent girls according to education status of father and education status of mother.

N=100

Characteristics	Category	Respondents	
		Number(N)	Percent(%)
Education status of father	No formal education	12	12
	Primary	21	21
	Secondary	39	39
	Graduate and more	28	28
Education status of mother	No formal education	19	19
	Primary	22	22
	Secondary	39	39
	Graduate and more	20	20



Data depicted in Table no 4 shows that majority of the adolescent girls' fathers 51% (51 out of 100) are private employees, 39% (39 out of 100) belong to other professions, 7% (7 out of 100) are government employees and only 3% (3 out of 100) are occupied with agricultural work. With regard to the occupation of the mothers, majority of the mothers 66% (66 out of 100) are house wives, 18% (18 out of 100) are private employees, 8% (8 out of 100) are government employees and 8% (8 out of 100) are self employed.

Table no 4: shows the frequency and percentage distribution of adolescent girls according to Occupation of father and occupation of mother.

N=100

Characteristics	Category	Respondents	
		Number(N)	Percent(%)
Occupation of father	Agriculture	3	3
	Private Employee	51	51
	Government Employee	7	7
	Other	39	39
Occupation of mother	House Wife	66	66
	Self Employed	8	8
	Private Employee	18	18
	Government Employee	8	8

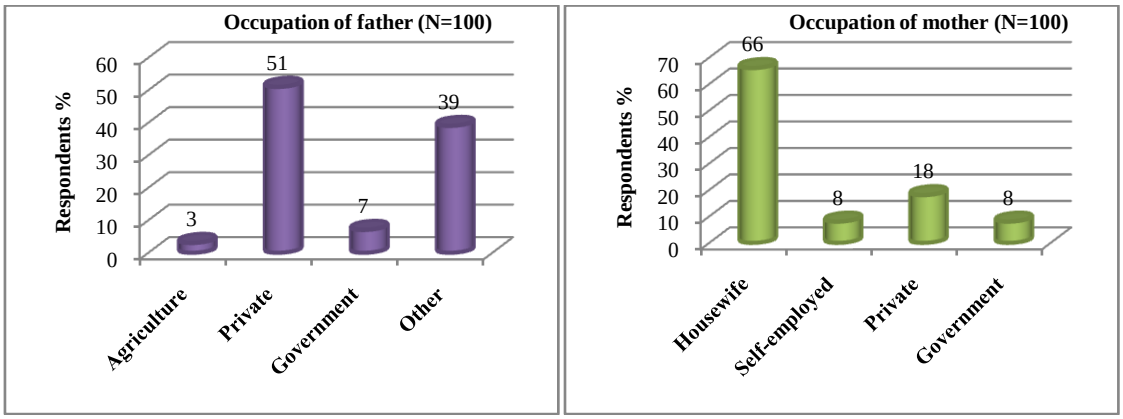
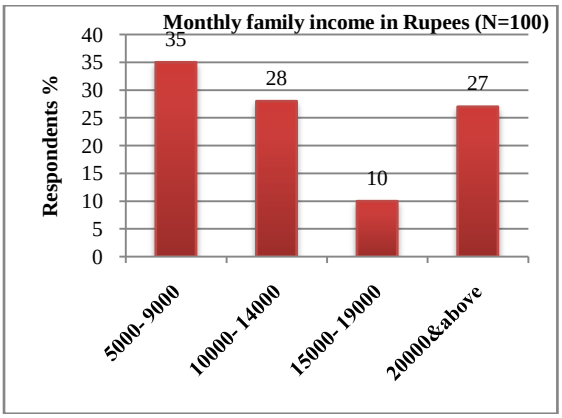


Table no. 5 shows the classification of adolescents girls based on the monthly family income, majority, 35%(35 out of 100) of the respondents had monthly family income ranging between Rs 5000and Rs 9000, for 28%(28 out of 100) of the samples the monthly family income was between Rs 10000 and Rs 14000. About 27 samples had a monthly income more than Rs 20000 and only 10 had monthly income between Rs 15000 and 19000. For majority of the samples 58% (58 out of 100), the nearest health care facility available is private clinic, 19% (19 out of 100) are accessible to primary health center, for 13% (13 out of 100) samples the nearest health care facility is multi specialty hospital and only 10% (10 out of 100 samples) are accessible to government hospital.

Table no 5: shows the frequency and percentage distribution of adolescent girls according to monthly family income and nearest healthcare facility

N=100

Characteristics	Category	Respondents	
		Number(N)	Percent(%)
Monthly family income	Rs 5000- Rs 9000	35	35
	Rs 10000- Rs 14000	28	28
	Rs 15000- Rs 19000	10	10
	Rs. 20000 and above	27	27
Nearest healthcare facility	Primary Health Center	19	19
	Private Clinic	58	58
	Government Hospital	10	10
	Multi specialty Hospital	13	13



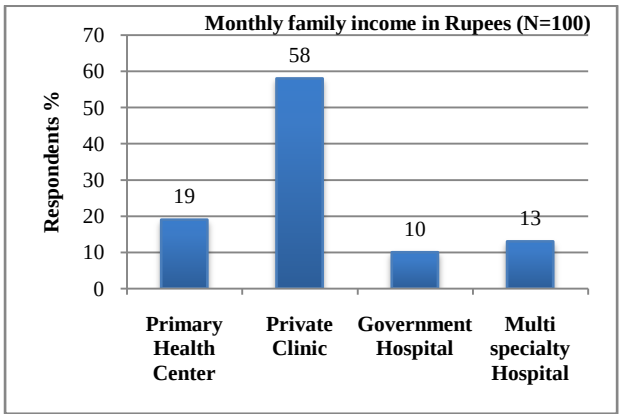
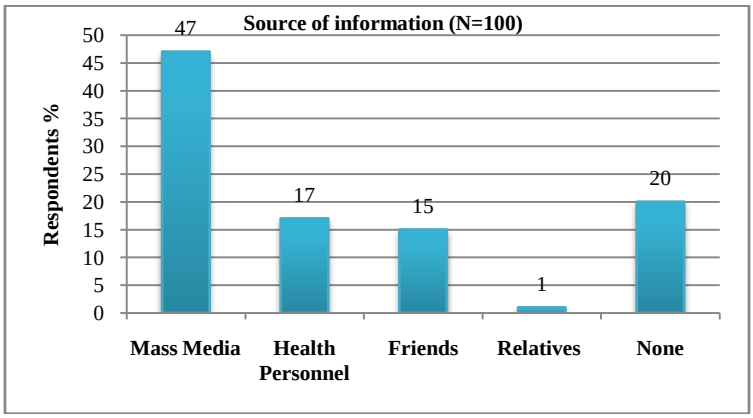


Table no. 5 shows classification of adolescent girls according to source of information. With regard to the source of information, it is found that majority of the samples 47% (47 out of 100) received information from mass media, 17% (17 out of 100) received information from health personnel, 15 % (15 out of 100) received information from friends and only 1% (1 out of 100) received information from relatives.

Table no 5: shows the frequency and percentage distribution of adolescent girls according to source of information

N=100

Characteristics	Category	Respondents	
		Number(N)	Percent(%)
Source of information	Mass Media	47	47
	Health Personnel	17	17
	Friends	15	15
	Relatives	1	1
	None	20	20



The data depicted in **the table no. 6** shows the overall knowledge level of adolescent girls. The results revealed that, majority 68% (68 out of 100) of the adolescent girls have moderately adequate knowledge, 23% (23 out of 100) have inadequate knowledge, and only 9% (9 out of 100) have adequate knowledge.

Table no 6: shows the frequency and percentage distribution of adolescent girls according to their Knowledge scores

N=100

Knowledge category	Knowledge Scores	Knowledge Percentage	Respondents	
			Number(N)	Percent(%)
Adequate	30-40	>75%	9	9
Moderately Adequate	20-30	50-75%	68	68
Inadequate	0-20	0-50%	23	23

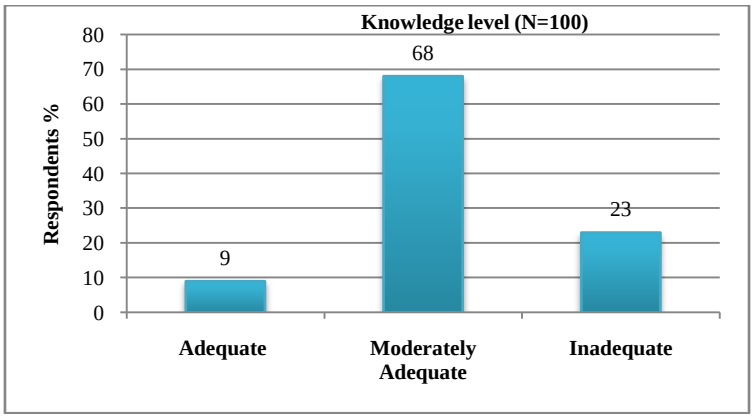


Table no 7 shows that the participants had the highest knowledge in the aspect of General information regarding STDs with a mean knowledge score of 6.06±1.36 (75.75%±17.02), followed by the aspect of Knowledge regarding HIV infection with a mean knowledge score of 5.71±1.31 (71.37%±16.4), followed by the aspect of Knowledge regarding prevention of STDs with a mean knowledge score of 5.48±1.4 (68.5%±17.54), followed by the aspect of Knowledge regarding Syphilis with a mean knowledge score of 3.32±1.77 (41.5%±22.11), followed by the aspect of Knowledge regarding Gonorrhea with a mean knowledge score of 3.29±1.83 (41.12%±22.84). The overall mean knowledge score regarding Sexually Transmitted Diseases is 20.8±5.66 (65%±17.69).

Table no 7: shows the aspect wise classification of respondents by knowledge level regarding sexually transmitted diseases

S No.	Knowledge aspect	Statements	Max score	Respondents			
				Mean	SD	Mean (%)	SD (%)
I	General information regarding STD	8	8	6.06	1.36	75.75	17.02
II	Knowledge regarding HIV infections	8	8	5.71	1.31	71.37	16.40
III	Knowledge regarding Syphilis	8	8	3.32	1.77	41.5	22.11
IV	Knowledge regarding Gonorrhea	8	8	3.29	1.83	41.12	22.84
V	Knowledge regarding prevention of STD	8	8	5.48	1.40	68.5	17.54
Total		40	40	**20.8**	**5.66**	**65**	**17.69**

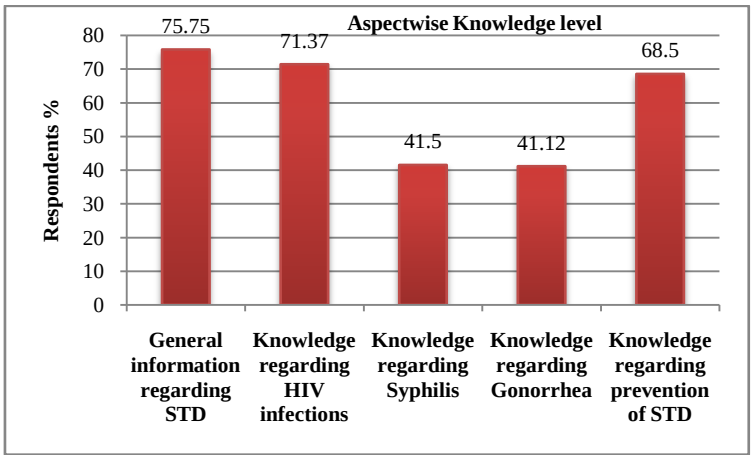


Table No 7 shows the association between the knowledge scores of adolescent girls regarding sexually transmitted diseases with selected socio demographic variables. The data reveals that the chi square value of the variable education status of the mother is 13.731, which is greater than the table value 12.592 with 6 degrees of freedom at 0.05 level of significance. Thus it can be inferred that there is a significant relationship between education status of the mother and the knowledge scores of adolescent girls regarding sexually Transmitted Diseases. The chi square values of all the other socio-demographic variables were found to be less than their respective table values at 0.05 level of significance. Thus it can be inferred that there is no significant relationship between knowledge scores of adolescent girls regarding Sexually Transmitted Diseases and the socio- demographic variables such as such as age, religion, type of family, place of residence, education status

of the father, occupation of the father, occupation of the mother, monthly family income, nearest health facility and source of information.

Table no 7: shows the association between knowledge scores of adolescent girls regarding sexually transmitted diseases with selected socio demographic variables.

N=100

S No.	Characteristics	Degrees of freedom (df)	χ^2 value	Table Value	P value
1	Age in years	6	6.515	12.592	P>0.05
2	Religion	4	6.128	9.488	P>0.05
3	Type of family	4	4.149	9.488	P>0.05
4	Place of residence	2	2.751	5.991	P>0.05
5	Education of father	6	5.734	12.592	P>0.05
6	Education of mother	6	13.731*	12.592	P<0.05
7	Occupation of father	6	5.955	12.592	P>0.05
8	Occupation of mother	6	3.643	12.592	P>0.05
9	Monthly family income	6	7.319	12.592	P>0.05
10	Nearest healthcare facility	6	2.679	12.592	P>0.05
11	Source of information	8	1.551	15.507	P>0.05

***Significant at 0.05 level of significance**

IV. Discussion

STDs are an important global health priority because of their devastating impact on women and infants and their inter-relationships with HIV/AIDS. STDs and HIV are linked by biological interactions and because both infections occur in the same populations. Infection with certain STDs can increase the risk of getting and transmitting HIV as well as alter the way the disease progresses. In addition, STDs can cause long-term health problems, particularly in women and infants. Some of the health complications that arise from STDs include pelvic inflammatory disease, infertility, tubal or ectopic pregnancy, cervical cancer, and perinatal or congenital infections in infants born to infected mothers[3]. Anyone can get a STD. Teenagers and young adults have the highest risk[2]

Therefore the present study is undertaken to assess the level of knowledge of adolescent girls regarding sexually transmitted diseases, to associate the sample characteristics with the knowledge scores and to develop and validate the informational booklet. In order to achieve the objectives of the study a non- probability purposive sampling technique was used to select the sample. The data was collected from 100 samples attending Lowry Memorial Pre University College and Seventh Day Adventist Pre University College. The findings of the study were discussed according to the objectives and hypothesis.

The results reveal that, majority 68% (68 out of 100) of the adolescent girls have moderately adequate knowledge, 23% (23 out of 100) had inadequate knowledge, and only 9% (9 out of 100) have adequate knowledge.

The results is supported by a study conducted by Subbarao NT, Akhilesh A.[7], entitled Knowledge and attitude about sexually transmitted infections other than HIV among 350 college students. The results reveal that 313 (90%) students had heard about sexually transmitted infections (STIs) and 223 (64%) students had heard about STIs other than HIV; 99% of students knew about HIV where as less than 50% of students knew about other STIs.

The participants had the highest knowledge in the aspect of General information regarding STDs with a mean knowledge score of 6.06±1.36 (75.75%±17.02), followed by the aspect of Knowledge regarding HIV infection with a mean knowledge score of 5.71±1.31 (71.37%±16.4), followed by the aspect of Knowledge regarding prevention of STDs with a mean knowledge score of 5.48±1.4 (68.5%±17.54), followed by the aspect of Knowledge regarding Syphilis with a mean knowledge score of 3.32±1.77 (41.5%±22.11), followed by the aspect of Knowledge regarding Gonorrhea with a mean knowledge score of 3.29±1.83 (41.12%±22.84). The overall mean knowledge score regarding Sexually Transmitted Diseases is 20.8±5.66 (65%±17.69).

Chi Square test was used to establish the relationship between the knowledge scores of adolescent girls regarding Sexually Transmitted Diseases and their selected socio-demographic variables. The results revealed that the chi square value of the variable education status of the mother was found to be 13.731 which is greater than the table value 12.592 with 6 degrees of freedom at 0.05 level of significance. Thus it can be inferred that there is a significant relationship between education status of the mother and the knowledge scores of adolescent girls regarding sexually Transmitted Diseases. The chi square values of all the other socio-demographic variables were found to be less than their respective table values at 0.05 level of significance. Thus it can be

inferred that there is no significant relationship between knowledge score s of adolescent girls regarding Sexually Transmitted Diseases and the socio- demographic variables such as such as age, religion, type of family, place of residence, education status of the father, occupation of the father, occupation of the mother, monthly family income, nearest health facility and source of information.

The result was supported by a study by Kapila[8] to Develop and Evaluate the Effectiveness of Information Booklet Regarding Prevention and Control of Sexually Transmitted Infections in Terms of Knowledge and Attitude of Adolescents in Selected Private School of Delhi. There was a significant association between the post-test attitude of the adolescents with source of information as shown by obtained chi square value 11.232 which was greater than table value of chi square value (7.82) at df (3) at 0.05 level of significance.

V. Conclusion

There is lack of knowledge regarding Sexually Transmitted diseases among adolescents. There is a need of creating awareness regarding Sexually Transmitted diseases among the young adults.

Limitations: The study was conducted only at two settings, namely, Lowry Memorial Pre University College and Seventh Day Adventist Pre University College. Hence generalization is possible only to the selected setting. The study has sampling constraints. A non-probability purposive sampling technique was used to select the samples; hence the generalizability of the inferential statistics should be done with caution. Because non probability purposive sampling technique was used the samples are not true representation of the population. The study design used is a weak design.

Suggestions: The results revealed that majority of the samples have only moderate knowledge. This is a great concern. In this aspect, more awareness classes should be taken to improve the knowledge regarding sexually transmitted diseases. Health professionals should take an active role in conducting school health programs and giving early sex education.

Recommendations: A study can be replicated on a larger sample to validate the findings of the present study. A comparative study can be undertaken to compare the knowledge between urban and rural adolescent girls. An experimental study can be undertaken to validate and standardize the information guide sheet.

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