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Effectiveness of Structured Teaching Programme on Knowledge and Attitude Regarding Physiological Changes during Puberty among School Students

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Abstract: ***Background: There are many challenges in implementing the education on puberty due to negative attitude and lack of knowledge among pre adolescents particularly belongs to rural area. PURPOSE: During puberty growth is rapid and confusing compared to earlier period of childhood. The purpose of this study was to compare the knowledge and attitude among adolescents before and after structured teaching programme. Methodology: Pre experimental design was adopted for the study. The sample size was 30. The sample was selected by purposive sampling technique. The data was collected by using questionnaire and 3 Point Likert scale developed by the researcher. A structured teaching programme on physiological changes during puberty was administered to the school students and was evaluated. Results: The finding shows that majority 29 (96.7%) had adequate knowledge and 01 (3.3%) had moderate knowledge and 27 (90%) had positive attitude and 2 (6.3%) had neutral attitude. There was no significant association between the post test knowledge of school students among physiological changes during puberty with the selected demographic variable. So the knowledge and attitude is not constrained with selected demographic variables like age, sex education, religion, residential area, income and prior information about puberty.***

Keywords: Pubertal changes, Pre adolescents, Structured teaching programme

1.Introduction

Puberty is the process of physical changes by which a child body mature into an adult body capable of sexual reproduction to enable fertilization. It is initiated by hormonal signals from the brain to the gonads, the ovaries in a girl and the testes in boys. In response to the signals, the gonads produce hormones that produce & stimulate libido & the growth, function & transformation of the brain, bone, muscles, blood, skin, hair, breast & sexual organs. Accelerate in first half of puberty and is completed when the child has developed an adult body. An average girl begins puberty at ages 10-14 yrs. Boys at age 11-12 years. Girls usually complete puberty at age 15-17 yrs while boys complete at age 16-17 yrs.

The major land mark of puberty for female is menarche, the onset of menstruation which occurs on average between ages 12-13 yrs, for males it is the first ejaculation which occur on average age of 13 yrs. Education regarding physiological changes during puberty is important, adolescent need to understand their bodies & gender roles in positive ways. It provides a safety net for young generation whose lives are already infiltrated by messages from the media that may not reflect core family values. There is a staggering statistics that 25% of all girls & 16% of all boys will be victims of some type of sexual abuse or

assault by the time they turn 18yrs. Some people are abused from very young age into their teenage yrs. The resultant effect could be a teenager that is emotionally imbalanced & physiologically deranged. Educating our young people about themselves sends a message of self-appreciation, and self-esteem & highlights the facts that change they are experiencing is normal.

2.Literature Survey

Jeyashri G. Itti (2007) conducted a study that to evaluate the effectiveness of planned teaching programme on selected aspects of reproductive health among the rural adolescent girl. In the pre-test 69.77% of the subjects had poor knowledge whereas post-test scores showed that 96.5% of subjects had good knowledge. This result related to the post test knowledge (mean 34.35) scores showed that the adolescents girls had a significant higher score on reproductive health than pre-test (mean 21.81) the "t'' value of 31.30 was significant at 0.001 level.

Jyoti Umod (2008) conducted a study to assess the effect of planned teaching programme on knowledge, attitude and practice of adolescent in relation to the reproductive in Mumbai among the population 30 girls. Findings shows pre-test knowledge score was 63% and post test score was 91% with regard to knowledge changed in the adolescence was marked by increase in boys and girls from 23% and 19% to 70% and 83% resp.

Suneth B Aganpadi (2008) study was conducted to explore the perceived reproductive health problems, health seeking behaviour knowledge about available services and barriers to reach service among a group of women in Sri Lanka in order to improve reproductive health service delivery. This quantitative study was conducted semi-urban setting in Sri Lanka. A convenient sample of 32 adolescent between 17-19 years of age participated in four focus group discussion. A pretested focus group guide was used for data collection. Psychologically distress due to various reasons and problems regarding menstruation cycle and masturbation were reported as the commonest health problem. Knowledge on existing service was pointed out as the most important barrier in reaching the adolescent needs lack of asses to reproductive health. Knowledge was an important reason for poor self confidence among adolescent to discuss.

Sabyasachi Ray, Jarapada Ghosh, Prabodh Chandra Mandal, Subhadeep Basak (2011), of the total subjects 94.2% of them were in the age of 13-16 years. Nearly, 94% respondents reported their age at menarche and maximum i. e 54% respondents experienced in the age 11-13 years. It was observed that 18%, 60.7% and 21.3% of the respondents had good knowledge; moderate or some knowledge and very poor knowledge of pubertal problems and their preventions.33% said that they had faced one or some other kind of physical problems and out of them 60% indicated that they had visited to a doctor for their problems. The suffering of any gynaecological problems had 2.48 (95%) and 1.49 (95%) times greater among subjects with little or some knowledge and minimum or no knowledge compare to subjects with good knowledge of sex education.

P. V. Kotecha, Sangita Patel, R. K. Bani, V. S. Mazumdar Shobha Misra. A quantitative survey was carried out using self administered structured questionnaires among 340 girl students from 15 schools by systematic random sampling from schools. Only 33% of the girls mentioned that they had heard about contraceptives. More than half of adolescent girls knew correctly about various mode of transmission of HIV/AIDS. A large proportion of girls have mentioned changes in the opposite sex such has increase in height, changes in voice, breast development, onset of menstruation in girls.

PubertyK. Malleshappa Shivaram Krishna, Nandini. The objectives is to determine the effectiveness of a reproductive health education intervention programme is improving the knowledge of adolescent aged between 14-19 years in Kuppam Mandal, Chittor dt, Andhra Pradesh. Reproductive health knowledge score improved significantly after intervention. A significant increase in overall knowledge regarding menstrual cycle; ovulation, fertilization and pregnancy 44.5 % was noted (95%CI = 42.5; 46.5, P<0.001). Knowledge regarding contraception improved remarkably from 33.7% to 97.4 (p<0.0001).

Fakhri et al; Licensee Biomed central ltd. A quasi-experimental study was conducted to evaluate the effectiveness of the health intervention programme. A total of 698 students of Iran. Educational topics included the significance of adolescence, physical and emotional changes. Pubertal and Menstrual health and Premenstrual syndrome. Among a significant result was the impact of educational sessions on bathing and genital hygiene. A total of 61.6% in the experimental group compared with 49.3% in the control group engaged in usual bathing during menstruation (p=0.002) Individual health status was significantly statistically co-related with menstrual health. Attitude towards menstruation was also significantly. The present study confirms that educational intervention, such as the health promotion, project in the study can be quite effective in promoting menstrual hygiene.

Parbathy Nair, Vijay L Grover, Department Of Community Medicine And University College Of medical Sciences And GTB Hospital, Delhi Awareness and practises of menstruation and pubertal changes among unmarried females, adolescence in a rural area of east Delhi. The 251 girls were interviewed through a door to door survey by using pre-tested and closed ended questionnaire; out of 251 girls 127 had maintained menarche, of the 251 girls.71 (28.29%) were in the age group of 10-14 years, 60 (23.9%) were in the age group of 12-13 years, 52 (20.7%) were in the age group of 14-15 years, 35 (14%) were in the age group of 16-17 years and 33 (13.2%) were in the group of 18-19 years.59.7% were aware of breast enlargement and 33.8% of growth of auxiliary and pubic hair that accompanied puberty 2/3rd of study subject had knowledge of menstruation. Only a 3rd i. e.33.4 % of girls was aware of all the pubertal changes. The mean age at menarche in our study group 13.5 years

was observed in Delhi and Chennai. Pubertal changes among adolescents girls J fam welfare 1995.

Drakshyani Devi K, Venkata study on menstrual hygiene among rural adolescents girls. Post-test knowledge scores 75.03 +_13.82 of the student in study group were higher than those of control group 36.65+_14.17.

Golbasi Z, et. al This research was carried out as Quasi-Experimental study of two girl's high schools one is used as study group and other is used control school**.** The study group 97 students consisting of 3 class's reproductive health education was given to students for 10 weeks. The control group was not subjected to any educational programme. Baseline knowledge and score of students in study and control group were similar and low i. e. (P>0.05) we found that reproductive health knowledge of students in the study group increase significantly after the programme of education towards the puberty sanitation.

3.Problem Definition

A pre experimental study to evaluate the effectiveness of structured teaching programme on physiological changes during puberty regarding knowledge and attitude among higher secondary school students at selected school in Jammu.

4.Materials and Methods

The research approach used for this present study was Pre experimental. A pre-experimental design was adopted with one group pre –test, post test design. The study was conducted at Govt. Higher Secondary School Gharota Jammu. In this study, purposive sampling technique was used to select the samples. School students (i) between 13 to 16 years (ii) willing to participate in the study (iii) available at the time of data collection (iv) able to understand English were included and students (i) not willing to participate (ii) not able to hear, understand and respond to the conversation due to any effect (iii) not present at the time of study were excluded from the study.

Sample Size: The sample size for this pre experimental study was 30.

The pilot study was conducted during the month of September 2020 at Govt. Hr. Sec. School among five students belonged to 10^{th} class, to evaluate the effectiveness of structured teaching program and to find out the feasibility of conducting the main study. Data was collected among school students for a period of 3 weeks. A convenient time and date was fixed for data collection and structured teaching program. The time limit was one hour. The post test was administered to the same group with same structured questionnaire with a gap of one week.

The structure instrument had three parts.

Part – A

Questionnaires were prepared to collect the demographic data which were age, education, religion, income, residential area and prior information and source of information from students.

Part – B

Questionnaires were prepared which consist of 15 multiple choice questions regarding knowledge on physiological changes during puberty. These multiple choice questions has one right answer, which was allotted a score of "one" for every right answer and "zero" for every wrong answer. The total attainable score in the knowledge questionnaire was 15.

The knowledge score was classified as follows;

0-50%-Inadequate knowledge
51-75%-Moderate knowledge
76-100%-Adequate knowledge

Part – C

Three point Likert scales to assess the attitude regarding physiological changes during puberty of school students. There were 15 statements out of which 8 were positive and 7 were negative statements. The maximum score of measuring attitude was 30.

	Agree	Disagree	Uncertain
Positive Statement	2	0	1
Negative statement	0	2	1

Attitude score was interpreted as follows,

81-100%-Positive attitude
61-80%-Neutral attitude
0-60%-Negative attitude
.
The content of the teaching program includes definition, physiological changes in girls, menstrual cycle and menstrual hygiene. The audio visual aids like video, flex, sample specimen and pamphlets were used during teaching.

5.Analysis

The data was analyzed in terms of the study using descriptive and inferential statistics. The plan of data analysis was follows;

1. Organize the data in a master data sheet.
2. No. of Frequency and percentage distribution were used to analyze the demographic data of school students.
3. Frequency and percentage distribution were used to assess the level of knowledge and attitude of puberty among school students.
4. Mean, mean percentage, standard deviation and inferential measures "t" were used to assess and compare the pre test and post test knowledge and attitude.
5. Chi square test were used to determine the association between post test knowledge and post test attitude level of school students with selected demographic variables.

6.Result

Regarding existing knowledge and attitude on physiological changes during puberty among school students, 1 (3.3%) had inadequate knowledge, 29 (96.7%) had adequate knowledge and all 27 (90.0%) had positive attitude.2 (6.7%) had neutral attitude.

Regarding the effectiveness of planned teaching programme on various aspects of physiological changes during puberty, the mean score for post test level of knowledge was higher than pre test level of knowledge. It was 13.2. The mean score of attitude in post test was 25.7 increased from pre test score 15.7. This shows that there was significant, difference between pre-test and post-test level of knowledge and attitude regarding physiological changes during puberty. It was observed that planned teaching programme plays a vital role in improving the knowledge and attitude of school students regarding physiological changes during puberty.

The relationship between post-test and pre-test knowledge and attitude, there was a positive correlation (r = 0.016) among the study.

The association between the levels of knowledge and attitude with selected demographic variables, the was no significant association between their knowledge and attitude with selected demographic variables like age, education, religion and prior information about first aid among school students.

7.Conclusion

The main study concludes that, the existing level of knowledge and attitude regarding physiological changes during puberty were inadequate and negative before structured teaching program. But it was observed that, structured teaching programme increased knowledge and attitude regarding physiological changes during puberty. Thus, education plays fundamental roles in bringing changes in knowledge and attitude.

8.Future Scope

- This study can be done on larger population and multiple centres can be included as this is single centre study.
- Randomization can be done.
- Generalization can be there other than school students.
- A similar study can be undertaken by utilizing other domain like practice.
- A similar study can be undertaken with large number of samples which might lead to generalization.
- A similar study can be conducted as a comprehensive study between urban and rural area school students.
- The structure teaching programme can be administered periodically among students and public to create the awareness regarding physiological changes during puberty.

Study is limited to verbal response on knowledge and attitude of school students.

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Table 1: Distribution of higher secondary school students based on their demographic variables

n=30

S. No.	Demographic Variables	Number	Percentage (%)
1	**AGE**		
	13-14 years	19	63.3
	15-16 years	11	36.7
2	**CLASS**		
	9^{th}	12	40
	10^{th}	18	60
3	**RELIGION**		
	Hindu	22	73.3
	Muslim	08	26.7
	Sikh	0	0
	Others	0	0
4	**RESIDENTIAL AREA**		
	Rural	30	100
	Urban	0	0
5	**INCOME**		
	Below 5000	13	43.3
	Above 5000	17	6.7
6	**PRIOR INFORMATION**		
	Yes	23	76.7
	No	07	23.3
	IF YES SOURCE OF INFORMATION		
	Mass media	01	3.3
	School	06	20.0
	Peer group	02	6.7
	Medical professionals	0	0
	Others	14	46.7

Table 2a: Pre-test and post test level of knowledge on physiological changes during puberty among school students

n=30

Group	Mean	SD	t' test Value
Pre Test	6.23	1.4	*24.13
Post Test	13.2	1.17	

*Significant at 0.05 level.

Table 2b: Pre test and post test level of attitude on physiological changes during puberty among school students

n=30

Group	Mean	SD	t' test Value
Pre Test	15.7	1.98	*22.68
Post Test	25.7	2.14	

*Significant at 0.05 level

Table 2c: Relationship between post test level of knowledge and level of attitude on physiological changes during puberty among school students

n=30

Group	Mean	SD	t' test Value
Pre Test	13.2	1.17	*0.016
Post Test	25.7	2.91	

*Significant at 0.05 level

Table 3: Association between demographic variables with post test level of knowledge among school students

S. No.	Demographic Variables	Adequate	Moderate Adequate	Inadequate	
1	**Age**				
	13-14 years	10	1	0	*2.88
	15-16 years	19	0	0	
2	**Class**				
	9th	0	1	0	*30.364
	10th	29	0	0	
3	**Religion**				
	Hindu	29	0	0	
	Muslim	1	0	0	*15.175
	Sikh	0	0	0	
	Others	0	0	0	
4	**Residential Area**				
	Rural	29	1	0	*0.00
	Urban	0	0	0	
5	**Income / Month**				
	Below 5000	0	1	0	*3.313
	Above 5000	29	0	0	

Table 4: Association of post test level of attitude with selected demographic variables among school students

S. No.	Demographic Variables	Adequate	Moderate Adequate	Inadequate	
1	**Age**				
	13-14 years	0	1	1	*9.235
	15-16 years	27	1	0	
2	**Class**				
	9th	2	1	1	*15.97
	10th	25	1	0	
3	**Religion**				
	Hindu	20	1	1	
	Muslim	7	1	0	*0.514
	Sikh	0	0	0	
	Others	0	0	0	
4	**Residential Area**				
	Rural	27	2	1	*0.00
	Urban	0	0	0	
5	**Income / Month**				
	Below 5000	2	1	1	*8.47
	Above 5000	25	1	0	

References

[1] Bharat Pareek, Shivani Sharma, textbook of nursing research and statistics, PV publication; 2014
[2] Devis. F. Polits, textbook of nursing research, 9th edition, wolter publication.56-62.
[3] K. K Gulani, community health nursing, principle and practice, 1st edition, Neelam Kumari publication.653-60.
[4] K. Park, textbook of preventive and social medicine, 21st edition, Bhanot publication page no.316-328.
[5] Sunita Patney. Textbook of community health nursing, 5.363-69.
[6] Journals of nursing research and practice, vol-5, January-July 2009.
[7] The nursing journal of India, july-august 2013.
[8] The nursing journal of India September-October 2013.
[9] The nursing journal of India November-December 2013.
[10] Trained nursing association of India, TNAI bulletin, July 2013.
[11] Nursing and midwifery research journal, vol-9, April 2013.
[12] www.Menstrual hygiene resource/factsheet.
[13] www.AEGIS.com/ Review of literature /Physiological changes during puberty.
[14] www.Menstrual hygiene/Methodology adolescent girls.
[15] www.Pubmed.com/ review of literature / physiological changes during puberty.
[16] wwwMedline.com/menstrual hygiene/ review of literature.

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