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Evaluate the Effectiveness of Structured Teaching Programme on Knowledge Regarding Pubertal Changes and its Coping Strategies among Adolescent Girls

M. S. Shalini[1], Mr. Parashram[2], Ishwar Das Vairagi[3]
PhD Scholar, JJT University, Jhunjhunu Rajasthan[1]
Associate Professor, SRMS College of Nursing Bareilly UP[2]
Tutor, MLB Govt. Paramedical Training College, Jhansi UP[3]

Abstract: *Puberty is the cornerstone of reproductive development. Therefore, the transition through puberty is a critical period of development that provides an important opportunity to build a healthy foundation for sexual and reproductive health."Adolescence'' comes from the Latin word meaning "to come to maturity", a fitting description of this stage of life. The adolescent is maturing physically and emotionally, growing from childhood towards adulthood, and seeking to be grown up. It is a period of transition between childhood and adulthood. During this transition period dramatic physical, cognitive, psychosocial and psychosexual changes take place that are exciting and at the same time frightening Adolescence is a period where a vital physical and psychosexual changes takes place. In this regard, not only the pre-schooler, but also the older child that is the pre- adolescents between the age of 10 and 12 year should also receive adequate attention as a preparation for pubertal changes and menarche.*

Materials and Methods: A quantitative pre-experimental one group pre-test post-test design was used to assess the effectiveness of Structured Teaching Programme on knowledge regarding pubertal changes and its coping strategies among adolescent girls. The study conducted on 60 samples. Data was collected using structured knowledge questionnaire.

Results: In the pre-test, the majority (72%) adolescent girls had inadequate knowledge regarding pubertal changes and its coping strategies. In the post test, the same group has gained adequate knowledge (97%). Thus the study findings indicate that the Structured Teaching Programme was effective in enhancing knowledge of adolescent girls regarding pubertal changes and its coping strategies. The variables with $\chi 2$ values for the variables age ($\chi 2$ =12.49), birth order ($\chi 2$ = 12.49), class of study ($\chi 2$=9.49), source of information ($\chi 2$ =12.49),type of family($\chi 2$ =12.49),diet ($\chi 2$ =5.99), sleeping patterns ($\chi 2$=(9.49)are found to be significant at 0.05 level of significance with their mean pre- test knowledge scores.

Conclusion: After the detailed analysis of the study findings showed that pre-test finding showed that, most of the adolescent girl had inadequate knowledge regarding pubertal changes and its coping strategies. but after the administration of structured teaching programme it enhancing knowledge of adolescent girls regarding pubertal changes and its coping strategies. Regarding the association of demographic variables, they show association with age, birth order, class of study, source of information, type of family, diet, sleeping pattern, are found to be significant at 0.05 level of significance with their pre-test knowledge score.

Keywords: Pubertal changes, adolescent girls, physical changes, Structured Teaching Programme, coping strategies.

I. INTRODUCTION

"Puberty is the cornerstone of reproductive development. Therefore, the transition through puberty is a critical period of development that provides an important opportunity to build a healthy foundation for sexual and reproductive

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health.“Adolescence’’ comes from the Latin word meaning “to come to maturity”, a fitting description of this stage of life. The adolescent is maturing physically and emotionally, growing from childhood towards adulthood, and seeking to be grown up. It is a period of transition between childhood and adulthood. During this transition period dramatic physical, cognitive, psychosocial and psychosexual changes take place that are exciting and at the same time frightening. As per WHO statistics among world’s total population, adolescents i.e. individuals between the ages of 10 and 19 years, make up approximately 20%. UNFPA’s State of World Population (2005) estimates that there are 1.2 billion adolescents between 10- 19 years of age today. Adolescence is a period where a vital physical and psychosexual changes takes place. In this regard, not only the pre-schooler, but also the older child that is the pre- adolescents between the age of 10 and 12 year should also receive adequate attention as a preparation for pubertal changes and menarche.According to WHO, the age range of puberty is between 10-18 years old .There are two types of physical changes that occur during puberty in adolescent girls: a) changes to primary sex characteristics and b) changes to secondary sex characteristics. Primary sex characteristics refer to changes to the sexual organs themselves (uterus, vagina). Secondary sex characteristics refer to other visible changes such as increase in transverse diameter of the pelvis, development of the breasts, changes in the vaginal secretions, and growth of pubic and axillary hair and menarche.

II. OBJECTIVES OF STUDY

Assess the existing level of knowledge regarding pubertal changes and its coping strategies among adolescent girls.
Evaluate the effectiveness of a Structured Teaching Programme on knowledge regarding pubertal changes and its coping strategies among adolescent girls by comparing mean pre-test and post-test knowledge scores.
Determine the association between the mean pre-test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies with their selected socio-demographic variables

III. MATERIALS AND METHODS

A quantitative pre-experimental one group pre-test post-test design was used to assess the effectiveness of Structured Teaching Programme on knowledge regarding pubertal changes and its coping strategies among adolescent girls.The study conducted on 60 samples. The Data was collected through following tools:

Part I:Socio-Demographic Performa- The first part consists of socio-demographic variables which includes Age, Birth order, Religion, Class of study, Parents occupation, Income of parents, Source of information about pubertal changes, type of family, Dietary pattern, Sleeping pattern.

Part II: Structured Knowledge Questionnaire - The second part consists of the structured knowledge questionnaire which was developed by the investigator to assess the knowledge regarding pubertal changes and its coping strategies. There are 3 sub sections:

Section A: This section consists of 5 items to assess the knowledge about anatomy and physiology of female reproductive system.

Section B: This section comprises of 12 items to assess knowledge regarding puberty and its changes.

Section C: This section comprises of 9 items to assess the knowledge related to coping strategies during pubertal changes.

Scoring and interpretation:

The items were phrased in a multiple choice form with three options as distractors and with one correct response. The correct response is given a score of one mark and the wrong response is given a score of zero. Thus, the maximum possible score is 26.

The resulting knowledge is graded as follows:

Levels of knowledge	Score	Percentage
Adequate	20-26	>75%
Moderately adequate	13-19	51-75%
Inadequate	0-12	< 50%

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Content validity of the tool was ensured by a team of 9 experts. The experts included 2 Obstetrics and Gynaecological specialists and seven nursing experts specialized in Obstetrics and Gynaecological nursing. In the original tool, there were 45 items, following the expert's opinions and suggestions, the items which had less than 70% agreements were deleted (19items). The remaining items which had more than 70% agreements were modified. Items which had 100% agreements were maintained in the tool as it was originally stated.The reliability of the knowledge questionnaire was established by using split half method. In order to establish reliability, the tool was administered to 6 samples who fulfilled the inclusion criteria. These samples were excluded from the main study. The reliability was established by Karl Pearson's product moment correlation formula and the tool was found to be reliable with a reliability coefficient 'r' =0.85.

Final study was conducted on 60 samples. The sample for the study comprised of adolescent girls, who met the designated criteria were selected through non-probability purposive sampling technique. Objectives of study was discussed and obtained consent for participation in study. Base line data was assessed by structured knowledge questionnaire. Based on the objective and the hypothesis the data was analysed by using various statistical tests i.e. percentage, mean, paired t test and chi square test.

Statistical methods

The data collected from the participants was planned to be analysed on the basis of the objectives of the study using descriptive and inferential statistics. Data was organized data in a master data sheet.Data analysis is the systematic organization of research data and the testing of research hypothesis using that data. The plan of data analysis was as follows :

The data obtained will be analysed using both descriptive and inferential statistics on the basis of objective and hypothesis of the study.

Socio demographic data containing sample characteristics would be analysed using frequencies and percentage.

The knowledge score before and after the administration of Structured Teaching Programme will be calculated by using mean, standard deviation and paired't' test.

The level of significance will be at ≤ 0.05 level.

The significant difference between the mean pre-test and post-test score would be analysed by paired 't' test at $p \leq 0.05$ level of significance.

Association of socio demographic variables with pre-test knowledge score would be analysed using chi square test ($\chi 2$).

IV. RESULTS

Section I : Description of Socio-Demographic characteristics of adolescent girls

Table no. 1 **N = 60**

S. No	Socio Demographic variable	Frequency	Percentage
1	**Age Group (in Yrs.)**		
	10	20	33 %
	11	23	38 %
	12	13	22 %
	13	04	7 %
2.	**BirthOrder**		
	1	34	57 %
	2	22	37 %
	3	02	03 %
	4andabove	02	03 %
3.	**Religion**		
	Hindu	34	56 %
	Muslim	7	12 %
	Christian	19	32 %

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	Class of study		
	5thStandard	33	55 %
	6thStandard	14	23 %
	7thStandard	13	22 %
	Parent'sOccupation		
	Agriculture	2	3 %
	Self-Employee	19	32 %
	Professional	11	18 %
	Others	28	47 %
	Income ofParentsinRs		
	5001-10000	23	38 %
	10001-15000	15	25 %
	15001-20000	16	27 %
	20001andabove	6	10 %
	Source of information about pubertal changes		
	Mass media	5	8 %
	Parents	13	22 %
	Friends	40	67 %
	Others	2	3 %
	Types of family		
	Singleparent family	11	18 %
	Joint family	35	58 %
	Nuclearfamily	13	22 %
	Extendedfamily	1	2 %
	Dietary Pattern		
	Vegetarian	2	3 %
	Mixed	58	97 %
	Sleeping pattern		
	4-5hours/day	8	14 %
	6-7hours/day	20	33 %
	8-9hours/day	32	53 %

Table no. 1 shows that the majority of the subjects 38% (23 out of 60) were in the age group of 11 years, followed by 33(20 out of 60) in the age group of 10 years, 22% (13 out of 60) in the age group of 12 years and the least being 7% (4out of 60) in the age group of 13 years.With regard to birth order it was observed that majority of the participants 57% (34 out of 60) were 1st in birth order, followed by 37% (22 out of 60) were 2nd in birth order,3% (2 out of 60)were 3rd in birth order and other 3% (2 out of 60) were 4th and above.When Religion was considered majority 56% (34 out of 60) were Hindus, 32% (19out of 60) were Christians and 12% (7out of 60) were Muslims.With regard to the classification of adolescent girls on the basis of class of study it was observed that majority of the subjects 55% (33 out of 60) were in 5th Standard, followed by 23% (14 out of 60) in 6th Standard and about 22% (13out of 60) in 7th Standard.On the basis of parent's occupation it was observed that majority 47% (28out of 60) were other occupation, followed by 32% (19 out of 60) were self-employee,18%(11 out of 60) were professional and remaining 3% (2 out of 60) were agriculture.With regard to monthly family income, it was seen that majority of samples 38% (23out of 60) had income of Rs. 5001-10000, followed by 27% (16 out of 60) had an income between Rs150001-20000 and 25% (15 out of 60) had income between 10001-15000 and 10% (6out of 60) had 20001 and above.Based on source of information about pubertal changes it was observed that majority 67% (40out of 60) information from friends, followed by 22% (13

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out of 60) from parents,8% (5 out of 60) from mass media and 3% (2out of 60) from other sources.Based on type of family it was observed that majority of the subjects 58% (35 out of 60) belongs to joint family, followed by 22% (13out of 60) nuclear family and about 18% (11out of 60) belongs to single parent family and 2%(1 out of 60) belongs to extended family.With regard to dietary pattern, it was seen that majority of samples 97% (58out of 60) eat a mixed diet and remaining 3% (2 out of 60) were vegetarian.Based on sleeping pattern it was shows that majority of samples 53% (32 out of 60) sleeps for 8-9hours/day, followed by 33% (20 out of 60) sleep for 6-7 hours/day, and remaining 14% (8out of 60)sleep for 4-5 hours/day.

SECTION II: Analysis and interpretation of Pre-test knowledge level of adolescent girls regarding pubertal changes and its coping strategies.

Table no. 2: Classification of Respondents by Pre-test Knowledge Level on pubertal changes and its coping strategies among adolescent girls.

N = 60

Knowledge level	Category	Respondents	
		Number(N)	Percentage(%)
Inadequate	≤50%Score	43	72
Moderately adequate	51-75%Score	17	28
Adequate	>75 %Score	0	0
Total		**60**	**100**

Table no.2 shows the classification of adolescent girls with regard to their pre-test knowledge level on pubertal changes and its coping strategies. It was observed that of the subjects 72% (43 out of 60) had inadequate knowledge regarding pubertal changes and its coping strategies in the pre- test, the remaining 28% (17 out of 60) had moderately adequate knowledge and none of the respondents had adequate knowledge regarding pubertal changes and its coping strategies.

SECTION III: Analysis and interpretation of aspect wise mean Pre-test knowledge score of adolescent girls regarding pubertal changes and its coping strategies.

Table no. 3: Aspect wise Analysis of Pre - test Knowledge Scores of Respondents on the pubertal changes and its coping strategies

N = 60

NO.	Knowledge Aspects	No. of Items	Respondents Knowledge scores			
			Mean	Mean%	SD	SD%
I	Anatomy and Physiology of female reproductive system	5	1.1	21	0.89	18
II	Puberty and its changes	12	4.1	34	1.68	14
III	Coping strategies during pubertal changes	9	4.0	45	1.90	21
Combinedscores		**26**	**9.17**	**35**	**3.03**	**12**

The above table no.3 shows the aspect wise mean pre- test knowledge scores of adolescent girls regarding the pubertal changes and its coping strategies. It was evident that the adolescent girls had high knowledge scores on the aspect related to coping strategies during pubertal changes with a mean percentage score of 45% with a standard deviation of 21%. It was further followed by the aspect related to Puberty and its changes with the mean percentage score of 34% and a standard deviation of 14%, followed by the aspect related to Anatomy and Physiology of femalere productive system with a mean percentage score of 21% and a standard deviation of 18%.

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SECTION IV: Analysis and interpretation of Post-test knowledge level of adolescent girls regarding pubertal changes and its coping strategies among adolescent girls.

Table no.4: Classification of Respondents by Post-test Knowledge Level on pubertal changes and its coping strategies among adolescent girls.

N=60

Knowledge level	Category	Respondents	
		Number(N)	Percentage%
Inadequate	≤50%Score	0	0
Moderately adequate	51-75%Score	2	3
Adequate	>75 %Score	58	97
Total		60	100

The data presented in the above table no.4 shows the classification of adolescent girls with regard to their post-test knowledge level on pubertal changes and its coping strategies. It was observed that none of the respondents had inadequate knowledge regarding pubertal changes and its coping strategies in the post- test. Majority of the respondents gained adequate knowledge 97% (58 out of 60), followed by moderately adequate knowledge 3% (2 out of 60). The significant finding after the post- test was noted that there were no respondents in the category with inadequate knowledge.

SECTION V: Analysis and interpretation of aspect wise mean Post-test knowledge score of adolescent girls regarding pubertal changes and its coping strategies.

Table no.5: Aspect wise Analysis of Post- test Knowledge Scores of Respondents on the pubertal changes and its coping strategies.

N = 60

S. NO.	Knowledge aspects	No. of Items	Respondents Knowledge scores			
			Mean	Mean%	SD	SD%
I	Anatomy and Physiology of female reproductive system	5	4.4	88	0.83	17
II	Puberty and its changes	12	10.1	84	1.13	9
III	Coping strategies during pubertal changes	9	7.4	82	1.46	16
Combined		**26**	**21.85**	**84**	**1.76**	**7**

The data presented in the above table no.5 shows the aspect wise mean post- test knowledge scores of adolescent girls regarding the pubertal changes and its coping strategies. It was evident that the subjects had high knowledge scores on the aspect related to Anatomy and Physiology of female reproductive system with a mean percentage score of 88% with a standard deviation of 17%. It was further followed by the aspectrelated to Puberty and its changes with the mean percentage score of 84% and a standard deviation of 9%, followed by the aspect related to Coping strategies during pubertal changes with a mean percentage score of 82% and a standard deviation of 16%. The least knowledge scores obtained in the post - test was for the aspect related to Coping strategies during pubertal changes with a mean percentage score of 82% and a standard deviation of 16%.

SECTION VI: Evaluate the effectiveness of Structured Teaching Programme regarding pubertal changes and its coping strategies by comparing mean pre-test and post- test knowledge scores.

Table no.6: Comparison of Overall Pre- test and Post - test Mean Knowledge Scores of Adolescent girls regarding pubertal changes and its coping strategies

Aspects	Mean	S.D	Mean%	SD%	Paired't'
Pre test	9.17	3.03	35	12	

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Posttest	21.85	1.76	84	7	**25.92***
Enhancement	12.68	1.27	40	32	

N = 60

Significant at 5% level, t (0.05, 59df) = 1.96*

In order to evaluate the effectiveness of the Structured teaching programme regarding pubertal changes and its coping strategies, a null hypothesis (H01) was developed that is, there is no significant difference between the mean pre- test and post- test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies. To test the hypothesis the level of significance was set at 0.05 levels. The data depicted in the above table no 6 shows that the mean post- test knowledge scores of the subjects were 21.85 and the mean pre- test knowledge scores were found to be 9.17. When a paired 't' test was done, the obtained 't' value 25.92 was found to be significant at 0.05 level.

Inference: The overall mean of the post-test knowledge score (21.85) is apparently higher than overall mean of pre-test scores (9.17). The mean difference being (12.68). The paired 't' value at df (59) obtained is 25.92 significant at 0.05 level.Therefore the null hypothesis is rejected and research hypothesis is accepted. Therefore the Structured Teaching Programme is effective.

Table no 7

Aspect wise Analysis of Mean Pre- test and Post- test Knowledge scores of Adolescent girls regarding pubertal changes and its coping strategies

N = 60

S. No	Knowledge aspects	Test	Mean	Mean%	S.D	Paired 't'
I	Anatomy and Physiology of female	Pre-test	1.05	26%	0.88	20.88 P<0.05
		Post-test	4.40	88%	0.82	
II	Puberty and its changes	Pre-test	4.08	51%	1.67	21.19 P<0.05
		Post-test	10.10	84%	1.12	
III	Coping strategies during pubertal changes	Pre-test	4.03	50%	1.88	11.43 P<0.05
		Post-test	7.35	82%	1.45	

*** Significant at 5% level, t (0.05, 59df) = 1.96***

The data depicted in the above table no 7 shows the aspect wise mean pre- test and post-test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies. A paired 't' test was done to compare the mean pre-test and post-test knowledge scores on each aspects. For the aspect related to Anatomy and Physiology of female reproductive system, the obtained 't' value was 20.88 and was found to be significant at 0.05 level (t=0.05, 59 df=1.96). In the area of Puberty and its changes, the mean post-test knowledge scores were found to be significantly higher than themean pre-test knowledge scores i.e. the obtained 't' value was 21.19 was also significant at 0.05 level (t=0.05, 59 df=1.96). Regarding Coping strategies during pubertal changes, the obtained't' value was 11.43 and it was significant at 0.05 level (t=0.05, 59 df=1.96). From the above information, it was evident that the Structured Teaching Programme was effective in enhancing the knowledge of adolescent girls regarding pubertal changes and its coping strategies for all knowledge aspects under investigation.

SECTION VII: Analysis and interpretation of association between the mean pre- test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies with their selected socio-demographic variables.

The findings of the study reveals that there is significant association between pre-test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies with their selected demographic variables such as age ($\chi 2$ =15.98), birth order ($\chi 2$=13.75), class of study ($\chi 2$=18.67), source of information ($\chi 2$=16.88), types of family ($\chi 2$=14.70), dietary pattern ($\chi 2$=7.05) and sleeping pattern ($\chi 2$=11.38) at 0.05 level of significance.

The findings of the study reveals that there is no significant association between pre-test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies with their selected demographic variables such as religion ($\chi 2$=4.88), parent occupation ($\chi 2$=0.60), and income of parents ($\chi 2$=2.97), at 0.05 level of significance.

V. DISCUSSION

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Section I - Description of Socio-Demographic characteristics of adolescent girls:

It was seen that the majority of the subjects 38% (23 out of 60) were in the age group of 11 years, followed by 33(20 out of 60) in the age group of 10 years, 22% (13 out of 60) in the age group of 12 years and the least being 7% (4out of 60) in the age group of 13 years.With regard to birth order it was observed that majority of the participants 57% (34 out of 60) were 1st in birth order, followed by 37% (22 out of 60) were 2nd in birth order,3% (2 out of 60)were 3rd in birth order and other 3% (2 out of 60) were 4th and above.When Religion was considered majority 56% (34 out of 60) were Hindus, 32% (19out of 60) were Christians and 12% (7out of 60) were Muslims. With regard to the classification of adolescent girls on the basis of class of study it was observed that majority of the subjects 55% (33 out of 60) were in 5th Standard, followed by 23% (14 out of 60) in 6th Standard and about 22% (13out of 60) in 7th Standard.On the basis of parent's occupation it was observed that majority 47% (28out of 60) were other occupation, followed by 32% (19 out of 60) were self-employee,18%(11 out of 60) were professional and remaining 3% (2 out of 60) were agriculture.With regard to monthly family income, it was seen that majority of samples 38% (23out of 60) had income of Rs. 5001-10000, followed by 27% (16 out of 60) had an income between Rs150001-20000 and 25% (15 out of 60) had income between 10001-15000 and 10% (6out of 60) had 20001 and above.Based on source of information about pubertal changes it was observed that majority 67% (40out of 60) information from friends, followed by 22% (13 out of 60) from parents,8% (5 out of 60) from mass media and 3% (2out of 60) from other sources.Based on type of family it was observed that majority of the subjects 58% (35 out of 60) belongs to joint family, followed by 22% (13out of 60) nuclear family and about 18% (11out of 60) belongs to single parent family and 2%(1 out of 60) belongs to extended family.With regard to dietary pattern, it was seen that majority of samples 97% (58out of 60) eat a mixed diet and remaining 3% (2 out of 60) were vegetarian.Based on sleeping pattern it was shows that majority of samples 53% (32 out of 60) sleeps for 8-9hours/day, followed by 33% (20 out of 60) sleep for 6-7 hours/day, and remaining 14% (8out of 60)sleep for 4-5 hours/day.

Section II - Description of Pre-test knowledge level on pubertal changes and its coping strategies.

It was observed that of the subjects 72% (43 out of 60) had inadequate knowledge regarding pubertal changes and its coping strategies in the pre- test, the remaining 28% (17 out of 60) had moderately adequate knowledge and none of the respondents had adequate knowledge regarding pubertal changes and its coping strategies.The findings of the study was supported by Gomes WA29, the findings of the study revealed that the adolescents had unsatisfactory level of information about terms, particularly those at the age of 10 (69.2%) and 11 years (70.6%), female (61.7%) and the ones in the 4th (82.8%) and 5th (61.1%) grades.

Section III - Description of Post-test knowledge level on pubertal changes and its coping strategies.

It was observed that none of the respondents had inadequate knowledge regarding pubertal changes and its coping strategies in the post- test. Majority of the respondents gained adequate knowledge 97% (58 out of 60), followed by moderately adequate knowledge 3% (2 out of 60). The significant finding after the post- test was noted that there were no respondents in the category with inadequate knowledge. From this it can be concluded that the Structured Teaching Programme was effective in the enhancement of knowledge of adolescent girls regarding pubertal changes and its coping strategies. This findings was supported by the study conducted by Vaishali R14, post- test mean was 130.59.

Section IV -Description of comparison of Overall Pre- test and Post - test Mean Knowledge Scores of Adolescent girls regarding pubertal changes and its coping strategies. In order to evaluate the effectiveness of the Structured teaching programme regarding pubertal changes and its coping strategies, a null hypothesis (H01) was developed that is, there is no significant difference between the mean pre- test and post- test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies. To test the hypothesis the level of significance was set at 0.05 levels. The data depicted in the above table shows that the mean post- test knowledge scores of the subjects were 21.85 and the mean pre- test knowledge scores were found to be 9.17. When a paired 't' test was done, the obtained 't' value 25.92 was found to be significant at 0.05 level.

Section V - Description of association between the mean pre- test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies with their selected socio-demographic variables.

To determine an association between selected socio-demographic variables and the mean pre-test knowledge level of adolescent girls regarding pubertal changes and its coping strategies, a null hypothesis (H2) was developed which shows that there is no significant association between the mean pre test knowledge scores of adolescent girls regarding pubertal changes and its coping strategies with their selected socio- demographic variablesIn the present study an association was

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found between the mean pre-test knowledge scores of the subjects regarding pubertal changes and its coping strategies and their selected socio-demographic variables such as age, birth order, class of study, source of information, type of family, diet, sleeping. Among these for age ($\chi 2$ =15.98), birth order ($\chi 2$ = 13.75), class of study ($\chi 2$=18.67), source of information ($\chi 2$=16.88), type of family ($\chi 2$ =14.70), diet ($\chi 2$ =7.05), sleeping patterns ($\chi 2$ = 11.38) showed a significant association with their mean pre-test knowledge scores at 0.05 levels of significance whereas the other variables religion, parents occupation, income, were found to be non-significant at 0.05 levels of significance.

The findings of the study supported by the research conducted by S. Pokhrel on impact of health education on knowledge , attitude and practice regarding menstrual hygiene in female students in Belgaum. There was a significant improvement in knowledge on nearly all menstruation relevant issues in pre-test compared to post-test. Significance level was set at 5%. In the pre-test, only 75 (24.8%) girls reported practice toilet hygiene, whereas in the post-test, significant improvement was observed in their menstrual practice ($p<0.001$). The study also clearly pointed out the impact of health education in improving their knowledge and practices.

VI. CONCLUSION

The conclusions were drawn on the basis of the findings of the study that structured teaching program on knowledge regarding pubertal changes and its coping strategies among adolescent girls was effective**.**

IMPLICATIONS

Nursing practice

Nursing is an art and a science. As a science, nursing is based upon a body of knowledge that is always changing with new discoveries and innovations. When nurses integrate the science and art of nursing into their practice, the quality of care provided to clients is at a level of excellence that benefits clients in numerous ways. They are the key persons of the health team, who plays a vital role in the promotion and maintenance of health. They can provide adequate teaching to both parents and family members so that they will come to know regarding pubertal changes and is need for adolescent girls to know about changes in the body. Therefore, nurses should have adequate knowledge regarding pubertal changes and its coping strategies to educate the adolescent girls.

Nursing Education

Education is the key component to update and improve the knowledge of an individual. In the present scenario, knowledge regarding pubertal changes and its coping strategies in school is essential to face and tide over the situation hence; there is a direct need to include these in education so as create awareness among the girls. It is the duty of midwifery nurses to educate the adolescent girls regarding pubertal changes. Hence, to excel in this strategy, those adolescent girls are needed to be well educated about the changes in the body to prevent wrong information about pubertal changes. In-service education regarding this topic should be conducted to improve the knowledge of the parent, school teacher, friend, and media and staff nurses who are surrounding by adolescent girls.

Nursing Administration

Nurse administrators are the key persons to plan, organize and conduct in-service education programmes. Nurse administrator's support is necessary to conduct and evaluate health education programmes. They can help to improve the knowledge of the nurses working in midwifery departments by providing various teaching programmes with the help of various Audio Visual aids and information booklets. They are in a key position to organize, implement and evaluate educative programmers' which will in turn help to improve the knowledge as well as meeting the future needs and accelerate the standards of midwifery services. The findings of the study suggest that there is an increased need for conducting awareness programmes for adolescent girls.

Nursing Research

The main goal of the nursing research is to improve the knowledge of adolescent girls through the implementation of evidence based practice. The study provides a baseline data for conducting other research studies. Nursing researcher can help to identify the existing knowledge gap. The study will be a reference for the research scholars. Further research works can be conducted with every medical condition to identify most effective knowledge imparting strategies.

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