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Effectiveness of Health Education Package on Knowledge Regarding Reproductive Health among Adolescent Girls

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ABSTRACT

The study was conducted with an aim to improve the knowledge of adolescent girls regarding reproductive health, to promote health and to encourage them to establish healthy patterns of behavior that will influence their health.

Objectives Of The Study: 1. To determine the association between pre interventional level of knowledge regarding reproductive health and selected demographic variables such as educational standard, mother's education , mother's occupation , birth order and family income. 2. To compare the pre and post interventional knowledge regarding reproductive health among adolescent girls.

Hypothesis: H1: - There is significant difference in knowledge about reproductive health among adolescent girls after administration of health education package at 0.05 level of significance.

H2:-There is significant association between pre test level of knowledge and selected demographic variables such as educational standard, mother's education, mother's occupation, birth order and family income at 0.05 level of significance.

Methodology: A pre -experimental one group pre test and post-test design was used for the study in order to evaluate the effectiveness of health education package on knowledge regarding reproductive health among adolescent girls in selected higher secondary school of district Pulwama, Kashmir. Simple random sampling technique was used for selection of 60 students from accessible population. Pre test was done by administering structured questionnaire followed by health education package on the same day and on day 7th post test was conducted by using same questionnaire. The data collected was analyzed by using descriptive and inferential statistics.

Results : The knowledge level of study subjects regarding reproductive health showed that in pre test score, among the total sample (N= 60) , (56.70%) had average knowledge and (33.30%) had good knowledge and (8.30%) had below average knowledge and least (1.70%) had excellent knowledge regarding reproductive health. Where as in post test majority (88.30%) of the study subjects had excellent knowledge and least (11.70%) had good knowledge, and none of the study subjects had below average knowledge regarding reproductive health. The mean posttest knowledge score (33.10$\pm$3.03) was higher than the mean pretest knowledge score (16.52$\pm$4.44).This indicates the effectiveness of the health education package in increasing the level of knowledge of adolescent girls regarding reproductive health. There was no statistically significant association between pretest level of knowledge of study subjects with their selected demographic variables such as educational standard, mother's education and mother's occupation at level $p<0.05$.

Conclusion : The findings of the study concluded that adolescent girls were not possessing adequate knowledge regarding reproductive health. The health education package was found effective in increasing the knowledge level of study subjects, hence there was dire need to educate them regarding reproductive health.
Keywords : Effectiveness, Health Education Package, Reproductive Health, Knowledge, Pretest; Post Test

I. INTRODUCTION

Adolescent is a phase of rapid growth and development during which physical, sexual and emotional changes occur, so adolescent period is the very important period in an individual's life. Health and development are closely intertwined in adolescents. The physical development (sexual and body changes) that occur during adolescence occur alongside important psychological and social changes that mark this period as a critical stage towards becoming an adult.[1]

Adolescence is defined by WHO as a person between 10 – 19 years of age. There are about 1.2 billion adolescents worldwide and one in every six people in the world is an adolescent. In India, there are 243 million adolescents comprising 21% of India's total population. They are the future nation, forming a major demographic and economic force. For a long time, there was no organized system to govern and monitor the social needs of adolescents. The committee on the Gopal Krishnan 4 rights of the Child(CRC,WHO)published guidelines in 2013 on the rights of children and adolescents, and issued guidelines on States obligation to recognize the special health and development needs and rights of adolescents and young people. This has been further envisaged in WHO report in 2014 titled" Health for the world's adolescents".[2]

In the world's population about 19% are in the age group of 10-19years. In another study it was estimated that 25% of the Indian population lies in the age group of 15-25years accounting for 138 million people's, and it was also noted that adolescent girls between the age group of 10-19years comprise about 22% of the female population in India.[3]

About 1.3million adolescents died from preventable and treatable causes during 2012 as per WHO reports. About 15% of global maternal death occurs among adolescent girls. Nearly 35% of the global burden of disease has roots in adolescence. India has the largest adolescent population in the world (UP 24.4%, Rajasthan 22.9%, Bihar 22.5%).Adolescents has a diverse sexual and reproductive health problem that is why adolescent reproductive health is a concern for health care providers.[2]

According to WHO estimates, one in every six people in the world is an adolescent, (between 10 and 19 years of age). With an estimated 1.2 billion adolescents alive today, the world has the largest adolescent population in history. Of these, about 85% live in developing countries. Moreover, more than half of the world's population is below the age of 25years, and four out of five young people live in developing countries. Many adolescents die prematurely every year, an estimated 1.7 million young men and women between ages of 10 and 19 years lose their lives to accidents, violence, and pregnancy related complications and other illnesses that are either preventable or treatable. As a result, adolescent reproductive health (RH) is an increasingly important component of global health.[4]
The Conceptual framework of the present study is based on Ludwig Von Bertanloffys General Systems Theory (1950) or system model developed by WHO in 1985. In 1952 Bertanloffys introduced this theory

as a universal theory that could be applied to many fields of study. This model is aimed at assessing the effectiveness of health education package on knowledge regarding reproductive health among adolescent girls in selected higher secondary school of district Pulwama Kashmir. According to Bertanloffy, General system theory provides a way of examining interrelationships and deriving principles. Theorists described human being as an open system, for proper functioning of human beings depends on the quality and quantity of its input, throughput, output and feedback. Being an open system a client is capable of receiving information and gain awareness from his environment. Utilizing the capacity of clients, nurse researcher takes the opportunity to provide information.

METHODOLOGY

The present study was conducted at Government Girls higher secondary school Naira Pulwama which is located about 3 kmts from main town Pulwama. It is a two storey building with 8 rooms. About 200 students are studying in the school. Admission of children per year is about 60-80 students. They provide all basic facilities and extra-curricular activities and also conduct school health programmes for the students well being. The researcher has taken permission from the parent institution to conduct research study and ethical clearance was obtained. Sample consists of 60 adolescent girls who were studying in 9th and 10th classes. Simple random sampling was used for selection of sample. Among all the adolescent girls , researcher selected only those un married adolescent girls who were in the age group of 13-19years and who had attained menarche. Married adolescent girls were excluded from the study. The selected subjects were explained the purpose of study and consent was obtained.

For the present study one group pre test –post test design was used for measuring the impact or effectiveness of the programme. One group pre test post test design is described as two sets of cross sectional observations on the same population to find out the change in the phenomena between two points in time. The change is measured by comparing the difference in the phenomena at the pre-test and post-test observations. The design of the study is one group pre test –post test which is presented in the following table:-

The table can be presented as: 01 X 02

Table 1: schematic representation of research design

Group	Pretest Day 1	Intervention Day 1	Post test Day 7
Adolescent girls N=60	O1	X	O2

Key: O1 : Pretest on knowledge with structured questionnaire regarding reproductive health among adolescent girls.

X : Health education package on knowledge regarding reproductive health among adolescent girls.(PPT, Chart)

O2: posttest on knowledge with structured questionnaire regarding reproductive health among adolescent girls

N: Total sample size

A pre-test was conducted on day 1 and the health education package was also given on the same day. The pre-test was conducted by structured knowledge questioner to assess the existing knowledge regarding reproductive health. The health education package was given in face to face form with the help of charts and ppt. The researcher listed and clarified the questions asked by the subjects after the health education package. On the day 7, the post-test was administered to assess the effectiveness of health education package. The post-test was conducted to the subjects under study using the same structure knowledge questioner to assess the gain in knowledge score.

The investigation tool comprised of two parts: part1 and part 11

Part I: This part of the tool comprises of questions related to demographic variables and it consists of 5

items (educational standard, mother's education, mother's occupation, birth order, and family income).

Part II: This part of tool is comprised of 4 sections namely;

Section A: Knowledge on Anatomy and physiology of female reproductive system comprises 12 items

Section B: Knowledge on menstruation and menstrual hygiene comprises13 items.

Section C: Knowledge on early pregnancy and care comprises 8 items.

Section D: Knowledge on contraception and contraceptives comprises 4 items.

Table 2. Description of The Investigation Tool

Part	Area	Sub areas	Items	No. of items
1	Demographic variables		Educational standard	1
			Mothers education	1
			Mothers occupation	1
			Birth order	1
			Family income	1
11	Knowledge regarding reproductive health.	Section A	Anatomy and physiology	12
		Section B	Menstruation & menstrual hygiene	13
		Section C	early pregnancy & care	8
		Section D	Contraception &Contraceptives	4

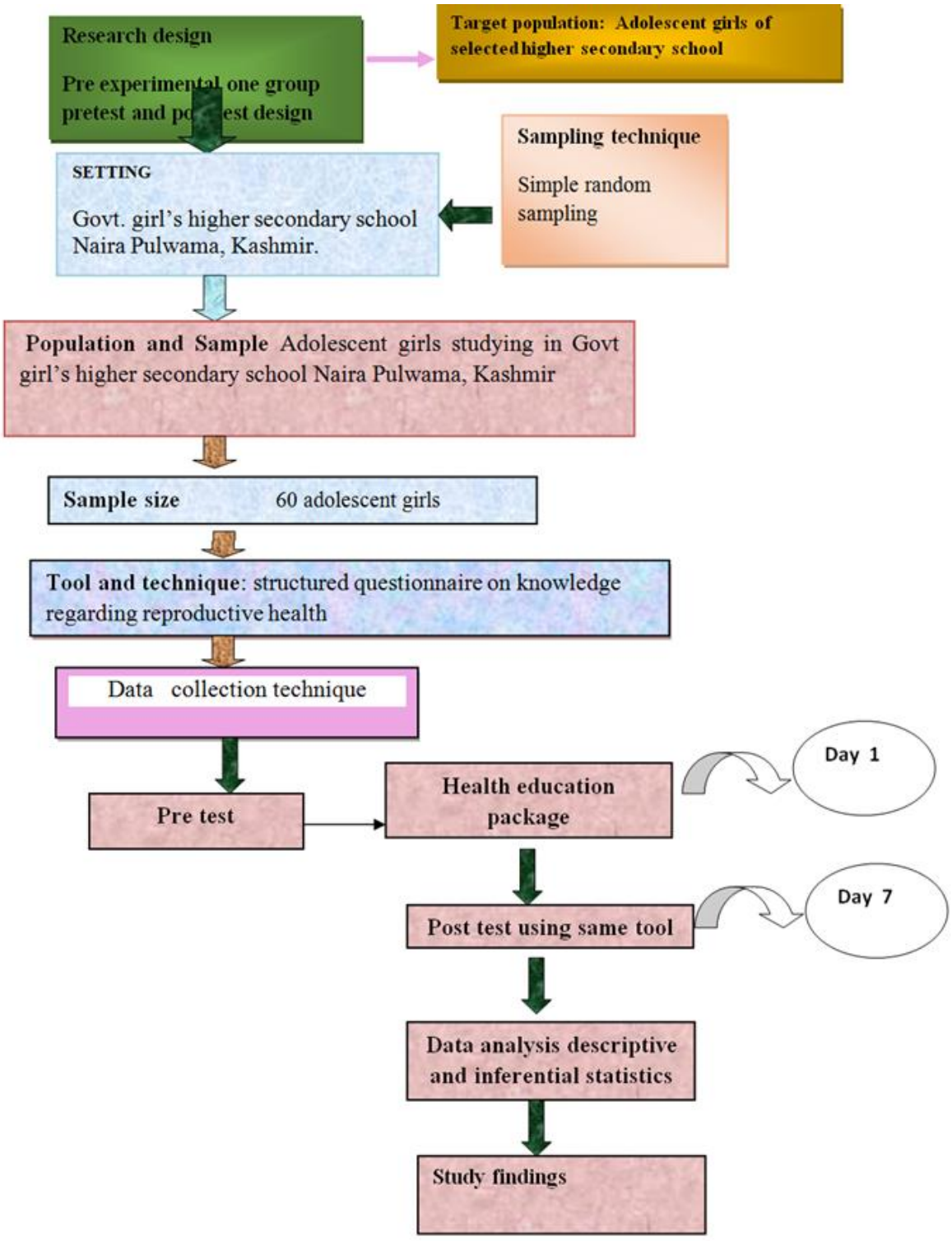
Health education package was prepared by making an intensive review of literature and comprehensive review of draft of content under expert guidance.

The data collected was analyzed by using descriptive and inferential statistics. The data was planned to be analyzed on the basis of objectives and hypothesis.

- Demographic data was planned to represent in terms of frequency and percentage.
- Mean, median and standard deviation for total scores of the adolescent girls was computed.
- Chi square test was computed for finding out the association between pre test knowledge and demographic variables.
- The data was coded, entered in word excel and analyzed by one of SPSS version 20, SYSTAT and Microsoft excel. The findings were organized and presented into two parts, tables and figures.
- inferential:- Paired t' test was used to evaluate the effectiveness of health education package.

Table 3. Schematic Representation of Data Collection Procedure

Date	Day	Name of school	Subjects taken	Action taken	Time
16-11-2015	1	Govt. girls higher secondary school Naira Pulwama	30	Pretest with Questionnaire	10-10:50am
				Intervention given after 10 minutes	11-12pm
21-11-2015	6		-	Post test conducted	11-11:50am
18-11-2015	1	Govt. girls higher secondary school Naira Pulwama	30	Pretest conducted	11-11:50 am
				Intervention given	12-1pm
24-11-2015	7		-	Post test conducted	12-12:45pm



DATA ANALYSIS

This study deals with analysis and interpretation of data collected from 60 adolescent girls regarding their knowledge on reproductive health. The data collected from 60 adolescent girls students before and after administering the health education package, was organized, analyzed and interpreted by using descriptive and inferential statistics. A pre-experimental one group pre-test post-test approach was adopted in this study.

The data analysis was done on the basis of the following objectives:-

1. To determine the association between pre interventional level of knowledge regarding reproductive health and selected demographic variables such as educational standard, mother's education , mother's occupation , birth order and family income.

2. To compare the pre and post interventional knowledge regarding reproductive health among adolescent girls.

On the basis of the research following hypothesis were formulated

H1: - There is significant difference in knowledge about reproductive health among adolescent girls after administration of health education package at 0.05 level of significance.

H2:-There is significant association between pre test level of knowledge and selected demographic variables such as educational standard, mother's education, mother's occupation, birth order and family income at 0.05 level of significance.

Section 1 : DESCRIPTION OF DEMOGRAPHIC VARIABLES

Table 4. This section deals with the demographic variables (educational standard, mother's education, mother's occupation, birth order and family income)

Frequency Distribution		Frequency(f)	Percentage(%)
Educational Standard	9th	50	30%
	10th	50	30%
Mothers Education	Illiterate	75	45%
	Up to high School	22	13%
	Graduate	3	2%
	Professional	0	0%
Mothers Occupation	Teacher	2	1%
	Health Worker	2	1%
	House Wife	97	58%
	Any Other	0	0%
Birth Order	First Child	20	12%
	Second Child	27	16%
	Third Child	47	28%
	Above third Child	7	4%
Family Income	Rs.10000-20000	55	33%
	Rs. 20001-30000	22	13%
	Rs. 30001-40000	5	3%
	Rs. 40001-50000	18	11%

Data in the table 4 shows that 30(50%) of study subjects were from 9th standard and 30 (50%) belonged to 10th standard. The maximum number of the study subjects 45 (75%) had illiterate mothers and least i.e., 2(3%) had graduate mothers. The majority of the study subjects 58(96.66%) had house wife mothers. The maximum number of the study subjects 28 (47%) had third birth order child and least i.e., 4(7%) had above third birth order child. The maximum number of the study subjects 33(55%) had family income of Rs10, 000-20,000 and least i.e., 3(5%) had family income of Rs30, 001-40,000.

Section 11: Description of Knowledge level of study subjects before and after administration of health education package regarding reproductive health.

This section deals with the analysis and interpretation of data obtained from scores of study subjects knowledge level regarding anatomy and

physiology of reproductive system, menstruation and menstrual hygiene, early pregnancy and care and contraception and contraceptives. The score was assessed by using a structured knowledge questionnaire. The knowledge scores obtained were divided into four categories that is knowledge level 0-9 (below average), knowledge level 10-18 (average), knowledge level 19-27 (good) and knowledge level 28-37 (excellent) respectively. The frequency was converted into percentage by dividing frequency obtained by the total number of subjects multiplied by 100. The findings are summarized and analyzed in the following tables and figures.

Table 5 Comparison of pre-test knowledge score with post-test knowledge score regarding reproductive health among study subjects (n=60)

pre test and post test knowledge level of study subjects	Pre test		Post test	
	Frequency	percentage	Frequency	percentage
Below Average (0-9)	5	8.3 %	0	0 %
Average (10-18)	34	56.7 %	0	0 %
Good (19-27)	20	33.3 %	7	11.7 %
Excellent (28-37)	1	1.7 %	53	88.3%

The data presented in table 5 shows that in pre test maximum number of the study subjects 34(56.7%) had average knowledge and least i.e.,1(1.7%) had excellent knowledge regarding reproductive health and in post test majority53(88.3%) had excellent knowledge and least i.e.,7(11.7%)had good knowledge regarding reproductive health.

Table 6 Comparison of Mean, SD, Median score, Maximum, Minimum, Range, Mean% between pre-test and posttest knowledge score of study subjects regarding reproductive health. (n=60)

parameters	Mean ± SD	Median score	Maximum	Minimum	Range	Mean %
Pretest knowledge score	16.52±4.436	17	29	8	21 (29-8)	44.64
Post test knowledge score	31.10±3.040	32	36	21	15 (36-21)	84.05

Data presented in table 6 shows that pre test knowledge scores range was 21 (29-8), mean pre test knowledge score with SD was (16.52±4.436) and mean percentage knowledge score was 44.64%. Above data also depicts that post test knowledge scores range was15 (36-21), mean post test knowledge score with SD was (31.10± 3.040) and mean percentage knowledge was 84.05%.

Table 7 Mean score and standard deviation of pre test and post test knowledge scores and the significance of difference between the mean pre-test and post-test

knowledge scores of subjects regarding reproductive health.(n=60)

Knowledge Score	Mean	S.D	Mean Diff.	Paired t Test	P value
Pre-test Knowledge Score	16.52	4.44	14.583	33.507	<0.001*
Post –test Knowledge Score	31.10	3.04			

The data in the table 7shows that the mean post test knowledge score (31.10±3.040) of the study subjects on over all reproductive health is significantly higher than that of the mean pre test knowledge scores (16.52±4.436) at 0.05 level of significance hence null hypothesis (H_{01}) is rejected and the research hypothesis (H_1) is accepted which states that there is significant difference in knowledge about reproductive health among adolescent girls after administration of health education package at 0.05 level of significance, which shows the effectiveness of health education package.

Table 8 : Area wise comparison of pretest and post test knowledge scores of study subjects and the significance of difference between the mean pretest and post test knowledge scores of study subjects regarding reproductive health. n=60

Area wise comparison		Mean	S.D.	Mean %	Mean Difference	Paired t Test	P value
Anatomy and physiology of reproductive system	Pre test	6.07	1.635	50.56	3.983	20.250	<0.001*
	Post test	10.05	1.241	83.75			
Menstruation and menstrual hygiene	Pre test	5.43	2.037	41.79	5.567	21.436	<0.001*
	Post test	11.00	1.473	84.62			
Early pregnancy and care	Pre test	3.12	1.541	38.96	3.617	23.179	<0.001*
	Post test	6.73	0.821	84.17			
Contraception and Contraceptives	Pre test	1.73	0.861	43.33	1.583	13.803	<0.001*
	Post test	3.32	0.651	82.92			

*significant

Data in the table 8 shows that the mean pre test knowledge score of study subjects regarding anatomy and physiology of reproductive system is (6.07±1.635) ,regarding menstruation and menstrual hygiene is (5.43±2.037), regarding early pregnancy and care is(3.12±1.541) and regarding contraception and contraceptives is (1.73±0.861).The data also depicts that the mean post score regarding anatomy

and physiology of reproductive system is (10.05±1.241) ,regarding menstruation and menstrual hygiene is (11±1.473), regarding early pregnancy and care is(6.73±0.821) and regarding contraception and contraceptives is(3.32 ±0.651) is significantly higher than the mean pre test knowledge score respectively at 0.05 level of significance hence null hypothesis (H_{01}) is rejected and the research hypothesis (H_1) is accepted which states that there is significant difference in knowledge about reproductive health among adolescent girls after administration of health education package at 0.05 level of significance, which shows the effectiveness of health education package.

Table 9 : Comparison of frequency and percentage distribution of correct responses of items in pre test and post test of study subjects. n=60

Item wise analysis	Pretest frequency of correct responses	Pretest percentage of correct responses	Post test frequency of correct responses	Post test percentage of correct responses
Section "A" knowledge regarding anatomy and physiology of reproductive system				
Q1: which age of a girl is considered as physically mature? 15-17years	12	20.0%	30	50.0%
Q2: Puberty means Process of physical change and period of sexual maturity	5	8.3%	50	83.3%
Q3: Female reproductive Organs consists of Ovaries, fallopian tubes ,Uterus, Vagina	16	26.7%	52	86.7%
Q4: Female sex cell is named as Ovum	34	56.7%	56	93.3%
Q5: Male sex cell is named as Sperm	36	60.0%	53	88.3%
Q6: Name of the organ which produces female sex cell is Ovary	54	90.0%	55	91.7%
Q7: The release of female sex cell from Ovary is called Ovulation	24	40.0%	45	75.0%
Q8: Number of female sex cells produced during each cycle One	24	40.0%	55	91.7%
Q9: Released female sex cell is carried to uterus through Fallopian tube	30	50.0%	53	88.3%
Q10: Fusion of female sex cell and male sex cell is called as	35	58.3%	47	78.3%

Conception				
Q11: Hormones produced by ovary are Estrogen and progesterone	39	65.0%	50	83.3%
Q12: Hereditary traits are passed from parents to children through Genes	55	91.7%	57	95.0%
Section "B" knowledge regarding Menstruation and menstrual hygiene				
Q1: **Menstruation is a process in which** Destruction of endometrium layer of uterus takes place which comes out through vagina every month	8	13.3%	38	63.3%
Q2: **The first Menstruation is known as** Menarche	39	65.0%	51	85.0%
Q3: **The reason for menstruation is** Hormonal changes	15	25.0%	48	80.0%
Q4: **Common age for attaining menarche is** 9-13years	26	43.3%	49	81.7%
Q5: **Duration of normal menstrual cycle is** 3-5 days	24	40.0%	58	96.7%
Q6:**Average interval period between each menstrual period is** 28 days	46	76.7%	58	96.7%
Q7: **Menstrual hygiene means** Personal hygiene during menstruation, bathing and showering during menstruation and using of sanitary protection products during menstruation	6	10.0%	36	60.0%
Q8: **Menstrual hygiene is important to** Prevent infection	31	51.7%	57	95.0%
Q9: **Best way to maintain menstrual hygiene is to use** Clean cloths ,homemade sanitary napkins, readymade sanitary napkins	22	36.7%	44	73.3%
Q10: **If the cloth is used, it should be washed in** Cold water first and then in hot water	24	40.0%	55	91.7%

and dry in sunlight				
Q11: **Sanitary pad should be changed** 2-4 times a day	17	28.3%	59	98.3%
Q12: **The best method of disposing used pads is to** Burning of used pads	17	28.3%	47	78.3%
Q13: **After changing the pad the hands should be** Washed with soap and water	51	85.0%	60	100%
Section "C" knowledge regarding early pregnancy and care				
Q1: **Early pregnancy means** Pregnancy at age of 13-19yrs or pregnancy before reaching legal adulthood (18-21yrs)	11	18.3%	42	70.0%
Q2: **Another term for early pregnancy is** Teen age pregnancy or adolescent pregnancy	12	20.0%	49	81.7%
Q3**:Recommended age of marriage for girls in India** 18-20 years	52	86.7%	60	100%
Q4: **Early marriage is not advisable because it has adverse effects on** Mothers health and baby's health	20	33.3%	48	80.0%
Q5: **Early pregnancy can result in** Anemia, abortion ,mother's death	16	26.7%	44	73.3%
Q6**: The effects of early pregnancy on young women can lead to** Incomplete education, poverty, unemployment	20	33.3%	52	86.7%
Q7: **Early pregnancy is not recommended because** Adolescents body is not fully mature	19	31.7%	52	86.7%
Q8: **A pregnant women should have regular antenatal checkups to prevent complications to** Mother and baby	37	61.7%	56	93.3%
Section "D" knowledge regarding contraception and contraceptives				

Q1: **Contraceptive means** Avoid unwanted pregnancy Regular interval between pregnancy	14	23.3%	48	80.0%
Q2: **The various methods of contraception are** Temporary methods ,Permanent methods	38	63.3%	57	95.0%
Q3: **Temporary method of female contraception is** copper T, oral pills	5	8.3%	38	63.3%
Q4: **Permanent method of female contraception is** Cutting the tube which carries ovum	47	78.3%	56	93.3%

Data in Table 9 depicts that the percentage of correct responses of all the items is significantly higher in the post test than the pre-test, which shows the effectiveness of health education package.

Table 10 : Association between pre test knowledge scores of study subjects regarding reproductive health with selected demographic variables(educational standard, mothers education, mothers occupation, birth order, family income)

Variables		Excellent	Good	Average	Below average	Chi square test	Df	P value
Educational Standard	9th	1	9	18	2	1.519	3	0.678 NS
	10th	0	11	16	3			
Mothers Education	Illiterate	0	17	23	5	7.894	6	0.246 NS
	Up to high School	1	3	9	0			
	Graduate	0	0	2	0			
	Professional	0	0	0	0			
Mothers Occupation	Teacher	0	0	1	0	1.580	6	0.954 NS
	Health Worker	0	0	1	0			
	House Wife	1	20	32	5			
	Any Other	0	0	0	0			
Birth Order	First Child	0	5	5	2	20.922	9	0.013*
	Second Child	0	7	9	0			
	Third Child	0	6	19	3			
	Above third Child	1	2	1	0			
Family	Rs.10000-	0	20	11	2	42.84	9	0.000*

Income	20000					5		
	Rs. 20001-30000	0	0	12	1			
	Rs. 30001-40000	0	0	1	2			
	Rs. 40001-50000	1	0	10	0			

NS= Not significant S*= significant

The data presented in table 15 shows that there was no significant association between selected demographic variables like educational standard, mother's education and mother's occupation and the pre-test knowledge score. But pre test knowledge score has significant association with birth order and family income. Hence the null hypothesis (H_{02}), which states that there is no significant association between pre test level of knowledge and selected demographic variables such as educational standard, mother's education, mother's occupation, birth order and family income at the significant level of 0.05 is partially accepted and partially rejected. It is partially rejected for birth order and family income and partially accepted for educational standard, mother's education and mother's occupation.

SUMMARY

A pre-experimental design was adopted in order to evaluate the effectiveness of health education package regarding reproductive health. Closed ended questionnaire was used to assess the knowledge regarding reproductive health. Validity and reliability of the questionnaire was tested. Pilot study was conducted to find the feasibility of the study. Data was collected from the subjects after obtaining permission from the concerned authority. Collected data was analyzed using descriptive and inferential statistics and presented in the form of tables and graphs.

DISCUSSION

This chapter presents the major findings of the study and discusses them in relation to similar studies conducted by other researchers. The study intended to assess the effectiveness of health education package on knowledge regarding reproductive health among adolescent girls of selected higher secondary school of District Pulwama Kashmir.

Hypotheses:

1. **H1:** - There is significant difference in knowledge about reproductive health among adolescent girls after administration of health education package at 0.05 level of significance.
2. **H2:-**There is significant association between pre interventional knowledge and selected demographic variables such as mother's education, mother's occupation, birth order and family income at 0.05 level of significance.

Related to **educational standard** 30(50%) of the study subjects were studying in 9th standard and 30(50%) in 10th standard. Related to **mothers education** maximum number of the study subjects 45(75%) had illiterate mothers. Related to **mother's occupation** majority of the study subjects 58(96.66%) had house wife mothers. Related to **birth order** maximum number of the study subjects 28(47%) had third birth order. Related to monthly family income maximum number of study subjects 33(55%) belonged to monthly family income of 10,000-20,000.

The findings of the study showed that among the total sample (N= 60), in pretest maximum number of the study subjects 34(56.7%) had average knowledge, 20(33.3%) had good knowledge, 5(8.3%) had below average knowledge and least i.e.,1(1.7%) had excellent knowledge regarding reproductive health.

These findings are supported by a study conducted by **Choudhari, Koshy, HN (2015)[5]** to assess the effectiveness of structured teaching program on knowledge regarding reproductive health among adolescent girls in selected schools of Bhavnagar District. Findings revealed that in the pre test majority 80% had average knowledge, 16.7% had poor knowledge and least 3.3% had good knowledge regarding reproductive health. These findings are also supported by a study conducted by **Suja, Aruna, Susila, Jayasri(2015)[6]** to assess the effectiveness of planned teaching programme on knowledge and attitude of adolescent regarding reproductive health in selected rural school of district Tamil Nadu. Findings revealed that in pre test majority of the subjects (86.7%) had inadequate knowledge and 13.3% had moderate knowledge and none had adequate knowledge regarding reproductive health.

The findings of the study showed that in post test majority of the study subjects 53(88.30%) had excellent knowledge and least i.e.,7 (11.70%) had good knowledge regarding reproductive health. None of the study subjects had below average knowledge regarding reproductive health.

These findings are supported by a study conducted by **Choudhari, Koshy, HN (2015)[5]** who revealed that in post test majority 81.7% had good knowledge, 18.3% had average knowledge and none had poor knowledge regarding reproductive health regarding reproductive health. These findings are also supported by a study conducted by **Suja, Aruna, Susila, Jayasri(2015)[6]**who revealed that in post test majority of the subjects (63.3%) had moderate knowledge and none of the subjects had inadequate knowledge regarding reproductive health.

The Findings of the present study showed highly significant improvement in knowledge regarding reproductive health after implementation of health education package, as significant differences were found between pre-test and post test knowledge score. The mean post test knowledge score (31.10±3.040) of the study subjects on over all reproductive health is significantly higher than that of the mean pre test knowledge scores (16.52±4.436) at 0.05 level of significance. This indicates that health education package was effective in enhancing the knowledge regarding reproductive health.

These findings are supported by a study conducted by **Choudhari, Koshy, HN (2015)[5]** who revealed that the post test mean knowledge score 22.71$\pm$2.35 was significantly greater than the pre-test mean knowledge score 13.81$\pm$3.67, which shows the effectiveness of intervention (planned teaching program). These findings are also supported by a study conducted by **Suja, Aruna, Susila, Jayasri(2015)[6]** who revealed that in pre test mean knowledge score was 38.39 $\pm$2.31and post test mean knowledge score was 73.75$\pm$1.74 with mean enhancement of 92% .The overall pre test mean attitude score was 53.46% and post test score was 60.74% with mean enhancement of 13.61%.The paired t test value for knowledge was 29.25 and attitude was 18.95 at $P<0.05$ level. Hence the intervention significantly improved the adolescent reproductive health knowledge and attitude. Results of the study were also supported by a study conducted by **Lazarus (2011)[7]** regarding reproductive health awareness programme to assess the knowledge, attitude and behavior. Findings showed that the mean score in the pretest knowledge was 5.9 and in post test it was 6.8 which was significant. The attitude mean score in pre test was 4.3 and in post test it was 6.8 which shows significant increase in attitude. The mean behavior pretest score showed a significance ($p = 0.019$). Hence the intervention significantly improved the adolescent reproductive health knowledge, attitude and practice.

The present study revealed that there was no significant association between selected demographic variables like educational standard, mother's education and mother's occupation and the pre-test knowledge score. But pre test knowledge score has significant association with birth order and family

income. These findings are also supported by a study conducted by **Abajobir, Seme (2014)[8]** to assess the level of reproductive health knowledge and services utilization of rural adolescents in Machakel district Ethiopia. Findings revealed that reproductive health knowledge was significantly associated with demographic variables like age, educational status, Living arrangement (living with grandparents and other relatives) and family income. These findings are also supported by a study conducted by **Sophia (2005)[9]** to assess the knowledge, attitude and practice regarding reproductive health among adolescent girls of B.E.S college jayanagar, Bangalore. Findings revealed that there was a significant association between knowledge level and selected socio demographic variables like mother's education, guardian's occupation, place of residence, type of family, source of information, and family income.

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