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A Study On The Knowledge And Attitude Regarding Pubertal Changes Among Early Adolescent Girls

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ABSTRACT

Background of the study- Puberty is the process of physical changes by which adolescents reach into physiological and sexual maturity. Puberty refers to bodily changes, while adolescence is period of social and psychological transition between childhood and adulthood. Early-adolescent girls have less knowledge about puberty. However, this may lead to unfavorable attitude ,lack of self-confidence which may contribute to many health problems. So, It is important to understand when and from where adolescent girls acquire knowledge and develop favorable attitude that will prepare them for various pubertal changes which are occurring in them.

Objective –This study has been conducted with an objective to assess the knowledge and attitude regarding pubertal changes among early-adolescent girls with a view to develop guidelines on its preparedness.

Methodology: A descriptive study was conducted on 200 early-adolescent girls of Bhartiya Vidya Mandir and USPC Jain Public Schools of city, Ludhiana Punjab. The sample was selected by convenience sampling technique. The tool of Structured knowledge questionnaire and 5 point structured Likert scale was used to assess the knowledge and attitude respectively regarding pubertal changes. Analysis was done using both descriptive and inferential statistics.

Results: The findings of the study revealed that early-adolescent girls were between 10-12 years with mean age 11.61± 0.59. 48.5% of early adolescent-girls had good , 48% had average, 2% had excellent knowledge and only 1.5% had poor level of knowledge. 93.5% of early-adolescent girls had favorable attitude and 6.5% had unfavorable attitude regarding pubertal changes. Correlation between knowledge and attitude was non-significant(r=0.11;p=0.09). It was also found that there was statistically significant association of knowledge

and attitude with selected socio-demographic variables like age, family income, socio economic status, source of information regarding pubertal changes and menstruation and menstrual hygiene.

Conclusion :The study concluded that most of the early-adolescent girls had good and average level of knowledge and favorable attitude regarding pubertal changes. Thus, Information regarding pubertal changes need to be provided to early-adolescent girls related to all aspects of pubertal preparedness.

Recommendations: Based on the findings of the study, it is further recommended to do this study on rural schools of district, Ludhiana. Qualitative study can be conducted to assess the fear and misconceptions regarding pubertal changes and menstruation among early-adolescent girls of Ludhiana, Punjab.

Keywords: knowledge, attitude, early-adolescent girls, pubertal changes.

Introduction

Adolescence is a period of transition between childhood to adulthood. It is a time of rapid physical, cognitive, social and emotional maturation as the girl gets prepare for womanhood. This period is customarily viewed as beginning with the appearance of secondary sexual characteristics at about 10 or 12 years of age and ending with cessation of body growth at the age of 18 to 20 years. Adolescence literally means, to grow into maturity. It involves three distinct sub phases: Early-adolescence ranges between 10 to 12 years, Middle adolescence that is from 13 to 17 years and late adolescence ranges between 18 to 20 years.[1]Adolescents are the primary potential human resource for the development of any country. According to a report, released by UNICEF, there are an estimated 1.2 billion adolescents in the world, which constitutes around 18 percent of the global population. India is the home of more than 243 million adolescents, and they account for one fourth of the country's population.[2]

The fundamental biologic changes of adolescence are collectively referred to as puberty. So, the word 'Puberty' is derived from the Latin word "Pubertas "the age of maturity and womanhood". Puberty is the process of physical changes by which adolescents reach into sexual maturity. Puberty refers to bodily changes, while adolescence is period of social and psychological transition between childhood and adulthood.[3]

Puberty primarily refers to the state of maturation, hormonal and growth process that occurs when the reproductive organs begin to function and the secondary sexual characteristics start to develop. Secondary sexual characteristics are the changes that occur throughout the body as a result of hormonal changes (e.g.Voice alteration, development of axillary and pubertal hair, growth spurt, fat depositions on hips, breast development) .The voice becomes deep during puberty Breast development begins between 8 years of age and 13 years of age and continues throughout puberty. The hair in the genital region is known as the pubic hair, the Pubic hair starts along the vaginal lips, the outer opening of private parts. The hair becomes darker and coarser and grows like an inverted triangle. Sometimes, the hair spreads to the inner side of thighs, as well. The hair growth underarms known as axillary hair that usually appears after the development of pubic hair. A rapid increase in height, referred to as a growth spurt, by the time of approximately 16 years the girls attain 98% of their height .The weight gain during puberty is perfectly normal, there is deposition of fat around

the hips of adolescent girls and hips become widen. There is initial appearance of menstruation, called Menarche also called the first period. Menarche occurs about two years after the appearance of the first pubescent changes and it occurs between 11 and 15 years with a mean age of 13 years.[4]

Review of literature is being categorized as :Literature review related to

1. Knowledge regarding pubertal changes .
2. Attitude regarding pubertal changes .
3. knowledge and attitude regarding pubertal changes..

1. **Knowledge regarding pubertal changes**.

Ujjval S, Kushlendra K.S. (2017) conducted a cross-sectional study exploring knowledge and perceptions of school adolescents regarding pubertal changes and reproductive health in the urban area of Varanasi city of Uttar Pradesh, India. It consisted 1022girls of 9th and 11th standard, by using a self- structured questionnaire and the results had shown that among 1022 girls, 60% girls had the knowledge about menstruation before it started.[6]

L. Anusha, Radhika M, Indira S (2015) did pre-experimental study to assess the knowledge regarding pubertal changes among pre-adolescent girls in KNR government high school at Nellore district .The sample size was 60 preadolescent girls and non-probability convenience sampling technique was used for the selection of subjects .Structured questionnaire was used to assess knowledge regarding pubertal changes . The finding of the study revealed that in pretest, 43(71.6%) had inadequate knowledge and 17(28.4%) had moderately adequate knowledge .Whereas in posttest 34(56.7%) had moderately adequate knowledge,15(25%) had inadequate knowledge and 11(18.3%) had adequate knowledge. It was concluded that structured teaching programme was found to be effective in providing knowledge regarding pubertal changes in pre-adolescent girls.[3]

2. Attitude regarding pubertal changes among early-adolescent girls

Tiwari H.et al (2006) investigated attitude and belief towards menstruation in 22 schools in Anand district, Gujarat state. 900 school girls aged 11-17 years were selected. Results revealed that 38.5% felt comfortable about menarche and 31.0 % believed that menstruation was a normal physiological process.37.2% of girls had not been informed about menarche before its onset and 48.2% felt they were not mentally prepared. The major sources of information was mother (60.7%) or an elder sister (15.8%) teachers.[7]

Sandhy P.,Bimla P.(2017) conducted a cross-sectional study to assess awareness and attitude towards pubertal changes among 205 adolescents by using purposive sampling technique . Data was collected using semi-structured interview schedule questionnaire and the results showed that only 11% of the adolescents had moderately favorable attitude, while 89% showed unfavorable attitude towards pubertal changes.[28]

3. Knowledge and Attitude regarding pubertal changes.

Sapkota D.S.(2017) : Evaluated the effectiveness of structured teaching programme on knowledge and attitude regarding teenage pregnancy among early adolescent girls of selected school in which the quasi-experimental design was used. The result revealed that the pre-test knowledge and attitude mean percentage was 45.5%, 66.4% and in post-test it was 78.3%, 86.0%respectively and there was significant association between the pre-test knowledge level and attitude level with some socio-demographic variables at 0.05 levels. These findings indicate that the structured teaching programme was effective in enhancing the knowledge and developing positive attitude among adolescent girl students regarding teenage pregnancy.

Mehrabi S., Etemadi A., Borjali A., Sadipoor E. (2016) conducted a quasi-experimental study on effect of puberty education on knowledge, attitudes, and function of female students of Iran. The population under investigation corresponds to a group of 40 girls studying in the first year of high school in Jiroft. Knowledge, attitude, and function scores were found to be significantly different in the pretest and posttest in both experimental and control groups. The results demonstrated the importance of puberty education in improving knowledge, attitude, and function of female students.[28]

Research Methodology

Research design

Descriptive

Research setting

USPC Jain public school and BCM school of city, Ludhiana

Target population

Early-adolescent girls

Sampling technique

Convenience

Sample size

N=200

Tools and method of data collection

TOOLS

Part A: Socio demographic profile.
Part B: Menstrual profile
Part C: Structured knowledge questionnaire to assess the knowledge regarding pubertal changes.
Part D: StructuredLikert scale to assess the attitude of early-adolescent girls.

Method

Self report(paper, pen)

Analysis and interpretation of data

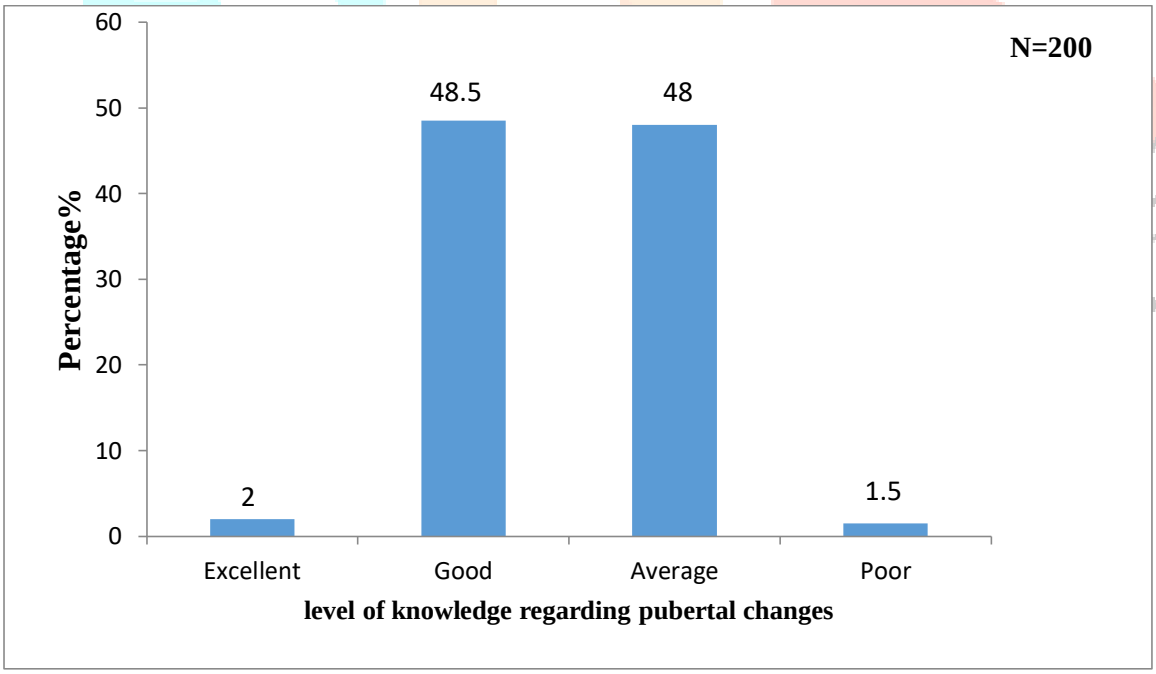
Descriptive and inferential statistics

Figure: 3 Research Methodology

ANALYSIS AND INTERPRETATION OF DATA

Assessment and correlation of knowledge and attitude regarding pubertal changes

Objective 1: To assess the knowledge regarding pubertal changes among early adolescent girls.



Maximum Knowledge Score=30
Minimum knowledge Score=0

Mean Knowledge Score ±SD=15.77 ± 4.33
Mean % of knowledge scores= 52.6%

Figure 5: Percentage distribution of early-adolescent girls as per level of knowledge regarding pubertal changes.

The above figure reveals the percentage distribution of early-adolescent girls as per level of knowledge regarding pubertal changes. It shows that 48.5% of early adolescent-girls had good knowledge followed by 48% had average level of knowledge , 2% had excellent knowledge and only 1.5% had poor level of knowledge.

So, it can be concluded that half of the early-adolescent girls had good and average level of knowledge regarding pubertal changes which may be related to their age, socio-economic status, family income and sources of information regarding pubertal changes.

Table 4: Rank wise distribution of components on structured knowledge questionnaire for assessment of knowledge regarding pubertal changes

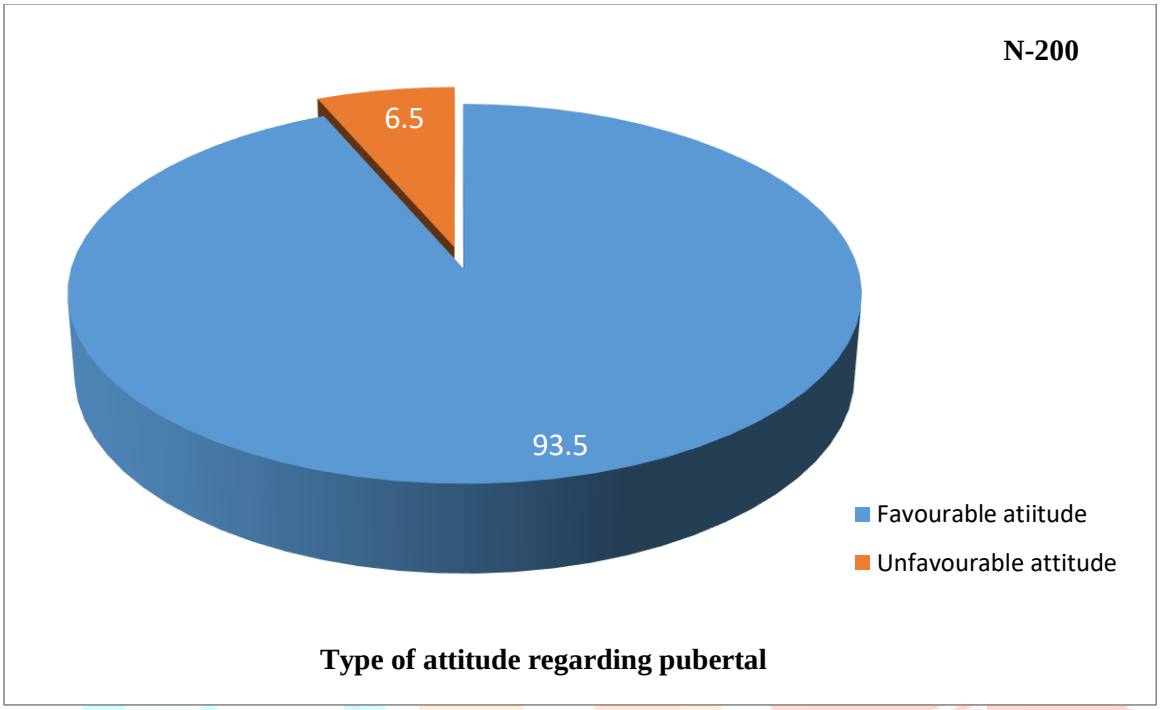
N=200

Components	Maximum score	Mean ±SD	Mean %	Rank
Female reproductive system	5	2.94±1.21	58.8	2
Puberty	4	2.06±1.06	51.5	3
Physical and physiological changes	5		42.4	6
Hormonal changes	5	2.36±1.46	47.2	5
Psychological changes	5	1.92±1.01	48.0	4
Menstruation and menstrual hygiene	7	4.37±1.49	62.4	1
Overall Knowledge	30	15.77± 4.33	52.6	

Table 4 illustrates rank wise distribution of components on structured knowledge questionnaire for assessment of knowledge regarding pubertal changes among early-adolescent girls. It shows that early-adolescent girls had higher mean knowledge score in the section of menstruation and menstrual hygiene i.e. 4.37±1.49 followed by mean knowledge score of female reproductive system is 2.94±1.21, puberty 2.06±1.06, psychological changes 1.92±1.01 , 2.36±1.46 of hormonal changes and least mean knowledge score i.e. 2.12±1.05 regarding physical and physiological changes.

Hence, it can be concluded that early-adolescent girls had more information regarding menstruation and menstrual hygiene and least knowledge regarding physical and physiological changes.

Objective 1: To assess the attitude regarding pubertal changes among early adolescent girls



Mean attitude score ±SD= 45.15± 4.97 *Maximum attitude score=70*
Mean % of attitude scores = 64.5% *Minimum attitude score =14*

Figure 6: Percentage distribution of early-adolescent girls as per type of attitude regarding pubertal changes.

The above figure reveals that, 93.5% of early-adolescent girls had favorable attitude whereas, rest 6.5% had unfavorable attitude regarding pubertal changes.

So, it can be concluded that maximum early-adolescent girls had favorable attitude regarding pubertal changes, which means that they are mentally prepared to learn about puberty and its components like female reproductive system , physical and physiological changes, hormonal changes, psychological changes related to puberty , menstruation and menstrual hygiene.

Objective 2: Correlation between knowledge and attitude regarding pubertal changes among early adolescent girls

Table 5: Correlation between knowledge and attitude regarding pubertal changes among early adolescent girls

Variables	Mean ±SD	Mean%	r value p value	t value p value
Knowledge	15.77±4.33	52.6%	0.117	0.139
Attitude	45.15±4.97	64.4%	0.098^{NS}	0.098 ^{NS}

Maximum knowledge score=30 *NS=non-significant at the level of p≤0.05.*
Maximum attitude score=70

Table 5. illustrates the correlation of knowledge and attitude regarding pubertal changes among early-adolescent girls. The mean knowledge score regarding pubertal changes among early-adolescent girls was 15.77±4.33. The mean attitude score regarding pubertal changes among early-adolescent girls was 45.15±4.97. The correlation was statistically tested (r= 0.11)and found to be non-significant (p= 0.09) which shows that there was no correlation between knowledge and attitude.

Hence it can be concluded that, there was no effect of knowledge on the attitude of early-adolescent girls regarding pubertal changes.

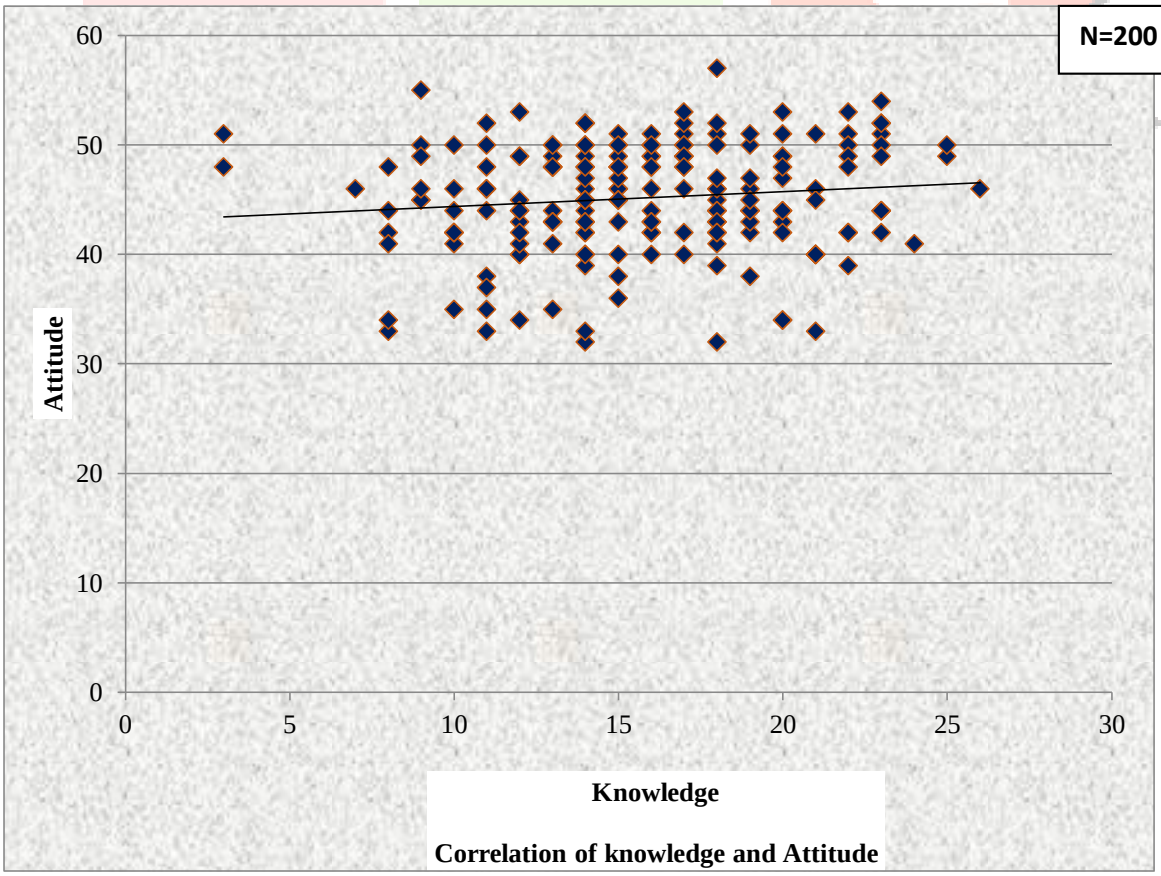


Figure 7: Scatter diagram shows the correlation between knowledge and attitude regarding pubertal changes among early-adolescent girls.

The above scatter diagram shows no correlation between knowledge and attitude.

Hence, it is concluded that there seems to be no effect of knowledge on attitude regarding pubertal changes among early-adolescent girls.

SECTION - III

Association of knowledge and attitude with selected Socio demographic variables

Objective 2: Association of knowledge and attitude with socio demographic variables

Table 6 : Association of knowledge and attitude with socio demographic variables

N=200

Socio demographic variables	n	Knowledge score		Attitude score	
		Mean ± SD	F/t value pvalue	Mean ± SD	F/t value p value
Age					
10 Years	12	12.75±2.05	F=5.679	43.67 ±4.85	F=2.77
11 Years	53	14.89±4.44	p=0.004*	44.04 ±5.33	p=0.06 NS
12 Years	135	16.39±4.28		45.71 ±4.77	
Class					
6th	38	14.76±3.82	F=1.90	43.84 ±5.76	F=3.84
7Th	92	16.34±4.64	p=0.15 NS	44.75 ±5.25	p=0.02*
8th	70	15.57±4.11		46.37 ±3.81	
Education status (Mother)					
Illiterate	7	14±3.32	F=0.44	44.86 ±3.02	F=2.54
Elementary	37	15.81±4.51	p=0.719 NS	43.51 ±4.68	p=0.05 NS
Higher Secondary	94	15.73±4.15		46.05 ±4.65	
Graduate and Above	62	16±4.62		44.77 ±5.56	
Education status (Father)					
Illiterate	1	12±2.2		53	F=1.79
Elementary	30	14±4.17	F=1.07	43.80 ±5.11	p=0.14 NS
Higher Secondary	97	15.85±4.20	p=0.36 NS	45.13 ±4.67	
Graduate and Above	72	16.17±4.55		45.61 ±5.22	
Occupation (Mother)					
Working	37	15.16±3.85	F=0.94	45.35 ±4.67	F=0.11

Socio demographic variables	n	Knowledge score		Attitude score	
		Mean ± SD	F/t value pvalue	Mean ± SD	F/t value p value
Non-Working	163	15.91±4.43	p= 0.34 NS	45.10 ±5.05	p=0.89 NS
Govt	10	14.90±4.65		45.60 ±4.09	
Private	24	15.67±4.16		45.21 ±5.16	
Factory Labour	4	14.25±0.50		44.25 ±2.99	
Occupation (Father)					
Working	182	15.82±4.31		45.15 ±5.02	
Non-Working	18	15.22±4.62	F=0.27	45.1 ±4.63	F=0.30
Govt.	56	15.68±4.47	p= 0.76 NS	45.11 ±4.83	p=0.96 NS
Private	133	15.81±4.23		45.11 ±5.15	
Factory Labour	11	15.73±5.24		45.82 ±3.60	
Others	0				
Habitat					
Rural	15	16.73±6.04	t=0.89	46.13 ±5.25	t=0.79
Urban	185	15.69±4.17	p= 0.37 NS	45.06 ±4.96	p= 0.42 NS
Type of Family					
Joint	62	15.89±4.42	F= 0.15	45.66 ± 4.85	F= 0.95
Nuclear	135	15.70±4.10	p= 0.90 NS	44.85 ±5.03	p= 0.38 NS
Extended	3	16.67±11.93		47.67 ±4.93	
Socio Economic Status(kuppuswamy's scale 2014)					
Upper class	18	16.33±3.50		45.50 ±4.89	
Upper middle class	118	16.42±4.44	F= 2.45	44.65 ±5	F= 1.28
Lower middle class	45	14.56±4.52	p=0.04 *	46.20 ±4.61	p=0.27 NS
Upper lower class	14	14.14±2.93		46.29 ±5.61	
Lower class	5	13.80±2.49		42.80 ±5.45	
Family Income					
<10,000	21	14.71±4.05		44.81 ±4.74	
10,001-20,000	68	14.84±3.64	F= 2.77	44.85 ±5.32	F=1.13

Socio demographic variables	n	Knowledge score		Attitude score	
		Mean ± SD	F/t value pvalue	Mean ± SD	F/t value p value
20,001-30,000	50	15.54±4.66	p= 0.01*	45.88 ±4.28	p= 0.34 NS
30,001-40,000	39	17.13±4.38		45.87 ±4.53	
40,001-50,000	12	18.17±3.76		42.58 ±6.73	
>50,000	10	17.30±5.91		44.40 ±5.34	
Ever Heard about Pubertal changes					
Yes	10	16.53±4.27	t= 25.13	45.68 ±4.80	t=3.00
No	157	13±3.35	p= 0.00*	43.19 ±5.17	p=0.003*
Source of Information					
TV. or Media	10	16.50±3.69		45.50 ±6.64	
Health Lectures	14	18.79±4.19	F= 3.51	45.50 ±3.37	F=0.05
Friends	13	15.85±3.26	p =0.009*	45.23 ±5.34	P=0.99NS
Parents/Siblings	79	17.16±4.02		45.84 ±4.97	
Any other	41	14.76±4.64		45.63 ±4.39	
Ever Heard about menstrual cycle					
Yes	177	16.10±4.30	t=3.13	45.46 ±4.81	t=2.56
No	23	13.22±3.75	p= 0.002*	42.74 ±5.65	p=0.03*
Source of Information					
Newspaper	1	9		45 ±4.31	
TV. or Media	10	15.30±3.77	F= 1.91	45.40 ±4.55	F=0.83
Health Lectures	8	18±4.47	p= 0.09NS	46.63 ±4.57	p=0.52NS
Friends	13	15.08±3.95		45 ±5.46	
Parents/Siblings	126	16.52±4.14		45.75 ±4.82	
Any other	16	14.31±5.34		43.31 ±4.69	

NS=non-significant p≤0.05.
**significant p>0.05*

Table 6 depicts the association of knowledge and attitude regarding pubertal changes among early-adolescent girls with selected socio-demographic variables.

In relation to knowledge, it was inferred that age, socio-economic status, family income, source of information regarding pubertal changes and menstrual cycle were statistically significant as p = 0.00, 0.04, 0.01, 0.01, 0.00 level respectively and had significant effect on knowledge regarding pubertal changes. Rest other variables likes, class, education status of mother and father, occupation of mother and father, habitat, type of family were statistically non-significant as p>0.05 level.

In relation to attitude, it was inferred that class, source of information about pubertal changes and menstrual cycle were statistically significant as p= 0.02, 0.00, 0.03 level respectively and had significant effect on attitude regarding pubertal changes. Rest other variables like age, education and occupation status of mother and father , habitat, type of family, socio-economic status and family income were statistically found to be non-significant as p>0.05 level.

Hence, it can be concluded that higher the age of early-adolescent girls, more was the knowledge score .The girls with upper middle class status also had good knowledge level regarding pubertal changes, this may be due to their good family income so that they could be easily accessible to the information regarding pubertal changes and menstruation through media/internet and parents.

SECTION - IV

Develop and disseminate guidelines on preparedness regarding pubertal changes among early-adolescent girls.

Objective III : To develop and disseminate guidelines on preparedness regarding pubertal changes among early-adolescent girls.

DISCUSSION:

This chapter deals with the explanation of research findings, where the researcher presents the findings through critical analysis along by comparison with the other findings and theories.

A descriptive Study was conducted to assess the knowledge and attitude regarding pubertal changes among 200 early-adolescent girls of selected schools (BVM and USPC Jain public school) of city Ludhiana Punjab. Structured knowledge questionnaire and 5 point Likert scale were used to assess the knowledge and attitude regarding pubertal changes respectively. Data analysis was done by using descriptive and inferential statistics by using SPSS (version16).

Findings of the present study regarding socio demographic variables revealed that among early-adolescent girls , 68% were in the age group of 12 years,35% were studying in 8th class, 47% mothers and 49% fathers of early-adolescent girls had higher secondary level of education,82% mothers were non-working and 91%

of fathers of early-adolescent girls were working and 60% were doing private job.93% of early-adolescent girls belonged to urban area,68%belonged to nuclear family, 59%were belonged to upper middle class,34% had family income Rs.10001-20000,79% girls had heard about pubertal changes out of which 49% got information from parents/siblings and 89% had heard about menstrual cycle out of which 63% got information from parents/siblings.

Findings of the present study regarding menstrual profile revealed that total 154 early-adolescent girls had menarche 53% were in the age of 12 years,71% had duration of 4-6days, 52% were with regular menstrual cycle,62.9% were having scanty bleeding and 60.38% girls had backache as menstrual problem.

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Objective 1: To assess and correlate the knowledge and attitude regarding pubertal changes among early adolescent girls.

In present study it was found that 48.5% of early adolescent-girls were having good knowledge, 48% were having average level of knowledge , 2% were having excellent knowledge and 1.5% were having poor level of knowledge regarding pubertal changes.

Similar study conducted by **Jwahra A. (2013)** in Taif, Saudi Arabia among intermediate school female students, to assess the knowledge regarding changes occurring during puberty. Findings showed that less than half of the female students (43.8%) had below average and more than half (56.2%) had an above average level of knowledge.

Another study done by **Poojary D.C, John D., Babu C. et.al. (2015**) in Karnataka revealed that 41% of girls had inadequate knowledge and 58% had moderate knowledge regarding pubertal changes.

In the present study, it was found that 94%of early-adolescent girls were having favorable attitude and only 6% were having unfavorable attitude

The study findings were supported by conducted by **Saghi et.al. (2015)** who revealed that 90% of adolescent girls had positive attitude regarding pubertal changes.

In present study, correlation was statistically tested and it was found to be non-significant(p= 0.09) there was no correlation (r= 0.11) between knowledge and attitude regarding pubertal changes among early-adolescent girls.

As supported by **Rani M., Sheoran P. Kumar Y. (2015)** who described that there was no correlation (r=0.17) between knowledge and attitude of early-adolescent girls and results were non-significant as (p = 0.25).

Objective 2: To find-out the association of knowledge and attitude with selected socio- demographic variables.

In the present study there was significant association of knowledge with age (p=0.00), socio-economic status (p=0.04), family income(p=0.01), information regarding pubertal changes (p=0.00), and menstrual cycle (p=0.00),.and association of attitude with class(p=0.02),information about pubertal changes (p=0.00), and information regarding menstrual cycle(p=0.03)

Similar study conducted by **Sadhna G., Achla S. (2006)**, showed that previous information regarding pubertal changes and menstrual cycle was significantly associated (p=0.05) with knowledge and attitude of adolescent girls.

Similarly, Ray Kuntala et.al. (2010)concluded that conducted knowledge about pubertal changes was significantly associated with increasing age (p<0.001) also stated that the girls who were younger, had poor knowledge level regarding pubertal changes.