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# Knowledge and Attitude Regarding Pubertal Health among Adolescent Girls

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## ABSTRACT

**Background:** Adolescence is a critical period and is associated with physical and psycho-social changes induced by puberty, which builds personality, behaviour, and future health of the adolescents. Thus, the aim of the study was to find out the knowledge and attitude regarding pubertal health of adolescence girls.

**Methods:** A descriptive cross sectional study was conducted in Bharatpur Metropolitan City's secondary level schools. A total of 183 adolescent girls were selected using probability simple random sampling from 5 schools out of total 43 schools which were also selected by simple random sampling technique. Data was collected by using structured self-administered questionnaire for knowledge and likert's scale was used for attitude regarding pubertal health.

**Results:** Study findings revealed that 61.4% of the students belonged to early adolescence (11-14) age group with the mean age  $14.27 \pm 1.33$  years. Majority (80.3%) had moderate level of knowledge and around half (48.6%) had positive attitude. Knowledge and attitude varied with the respondents' level of education ( $p=0.001$ ), relation to sibling ( $p=0.013$ ) and source of information by elder sister ( $p=0.022$ ), teachers/school ( $p=0.001$ ). Moderately positive correlation was found between knowledge and attitude which was highly significant ( $r=0.395$ ,  $p<0.001$ ).

**Conclusions:** Majority of respondents had moderate level of knowledge and half of the respondent had positive attitude regarding pubertal health. Findings of the study emphasizes on improvement in education of adolescent girls which can help uplift health status and minimize vulnerability to health issues of pubertal health.

**Keywords:** Adolescents; attitude; knowledge; pubertal health; puberty.

## INTRODUCTION

Adolescents undergo significant physical and cognitive changes during their pubertal development which contribute to and impact their future development.<sup>1</sup>

Puberty is defined in terms of the physical changes that occur. Variations in the physical boundaries of puberty exist, due to nutrition, health and weight patterns.<sup>2</sup> Pubertal health refers to the principles that led to improvement of the physical and psychological health.<sup>3</sup> When pubescent children are not informed of the changes that take place during puberty, it is distressing to undergo these changes and may develop unfavourable attitudes towards these changes.<sup>4</sup> Human puberty stands out in the animal world for its association with brain maturation and physical growth. It marks a transition in risks for depression and other mental disorders, psychosomatic syndromes, substance misuse, and antisocial.<sup>5</sup> Adequate nutrition, healthy eating habits

and physical exercise at this age are foundations for good health in adulthood.<sup>6</sup> The purpose of the study was to find the knowledge and attitude regarding pubertal health of adolescents girls in selected government schools of Bharatpur.

## METHODS

Descriptive cross-sectional study design was used to find out the knowledge and attitude regarding pubertal health among adolescent girls. The required sample for this study was calculated using Cochran, 1977 formula for infinite population and again by using finite sample size with a reference proportion of 50.3% which was 183 by adding 10% non-response rate. The study was conducted in secondary level government schools of Bharatpur Metropolitan City and population were adolescent girls studying in grade 8, 9 and 10 of government school of Bharatpur metropolitan City. Probability, simple random sampling technique was used to select 5 governmental

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schools from total 43 governmental secondary schools of Bharatpur Metropolitan City. After then, the 183 sample were again selected by probability, simple random sampling technique among 293 adolescent girls of those 5 selected government schools. Structured self-administered questionnaire was used to assess the knowledge regarding pubertal health. Attitude regarding pubertal health was measured by using a five point likert's scale research instrument which was structured self-administered questionnaire. Content validity of the research instrument was validated by a group of professionals from CMC, school of nursing including subject experts and linguistic professionals. Research instruments was developed in English language and translated into Nepali language by help of Nepali subject expert teacher. To ensure consistency in meaning provided by both instruments were compared. For the clarity and effectiveness Nepali Version of instruments was used. All developed instrument was pretested among 10% of students from total sample of the study. Internal consistency was measured by Kuder-Richardson formula 20 for structured knowledge questionnaire and Cronbach's alpha for attitude scale, the obtained value was in acceptable range (0.71 & 0.74 respectively). Ethical approval was taken from CMC-Institutional Review Committee (IRC), Bharatpur-10, Chitwan. Written consent was taken from the school principal and verbal consent was obtained from each respondent and their parents.

The data was coded and entered in EPI data 3.1 and exported into the IBM SPSS version 20 for analysis. Data was summarized using descriptive statistics such as frequency, percentage, mean and standard deviation. Chi square test was used to find out the association between adolescent girls' knowledge and attitude regarding pubertal health and selected variables at 0.05 level of significance. Relationship between knowledge score and attitude score regarding pubertal health among adolescent girls was measured by Spearman's correlation at 0.05 level of significance.

The level knowledge was measured by calculating the total score of the knowledge items and was classified into 3 categories: Good knowledge (> 66.7 %), Moderate knowledge (33.4-66.7%) and Poor knowledge (≤33.3%).<sup>3</sup> The level of knowledge was further categorized by merging moderate and good knowledge to fair knowledge for measuring association with selected variables: Fair knowledge (>33.3%) and Poor knowledge (≤33.3%). The level of attitude was measured by using a 5 point Likert's Scale with five categorical responses as strongly agree,

agree, undecided, disagree and strongly disagree and was classified into two categories. Positive attitude (>Median) and Negative attitude (≤ Median).<sup>13</sup>

## RESULTS

**Table 1. Socio-demographic Characteristics of the Respondents**

Variables	Frequency	Percent
<b>Age group (in years)</b>		
Early adolescence (11-14)	113	61.7
Middle adolescence (15-17)	68	37.2
Late adolescence (18-19)	2	1.1
<i>Mean age (in years) ±SD 14.27 ± 1.33; Min= 11, Max= 19</i>		
<b>Level of education</b>		
Class 8	65	35.5
Class 9	65	35.5
Class 10	53	29.0
<b>Ethnic group</b>		
Dalit	21	11.5
Janjati	76	41.5
Madhesi	5	2.7
Muslim	11	6.1
Brahmin/Chhetri	67	36.6
Thakuri	3	1.6
<b>Family type</b>		
Nuclear	98	53.6
Joint	85	46.4
<b>Elder siblings</b>		
Yes	121	66.1
No	62	33.9
<b>Relation to the sibling (n=121)</b>		
Brother	45	37.2
Sister	76	62.8

*\*\*Multiple Responses, SD-Standard Deviation, Min-Minimum, Max- Maximum*

Table 1 shows that out of 183 respondents, 61.7% are in early adolescence period (11-14 years) and 1.1% are in late adolescence period (18-19 years). The mean age of the respondent was 14.27±1.33. Regarding level of education 35.5% were in 8 class, 35.5% were in 9 class and 29% were in 10 class. Regarding ethnic group 41.5% were of Janjati, 36.6% of Brahmin/Chhetri and 1.6% of Thakuri. Regarding type of family more than half (53.6%) of the respondents were from nuclear. Out of 183 respondents, 66.1% had siblings and among them 62.8% had elder sister.

**Table 2. Information regarding Menstruation**

Variables	Frequency	Percent
<b>Occurrence of Menarche</b>		
Yes	166	90.7
No	17	9.3
<b>If yes, age in years at menarche (n=166)</b>		
≤12	78	46.9
>12	88	53.1
<i>Mean age (in years)±SD 12.55 ±0.90; Min=10, Max=16</i>		
<b>If yes, experience at menarche (n=166)</b>		
Scared	106	63.9
Unpleasant	4	2.4
Pleasant	4	2.4
No feeling	52	31.3
<b>Received information on puberty</b>		
Yes	169	92.3
No	14	7.7
<b>Sources of information**(n=169)</b>		
Mother	134	79.8
Father	10	6.0
Friends	67	39.9
Sister	65	38.7
Teacher/School	74	44.0
Relatives	24	14.3
Information Media	5	3.0

Table 2 shows that majority (90.7%) had occurrence of menarche and among them 46.9 % were ≤12 years. The mean age of menarche was 12.55±0.90. Regarding experience at first menstruation, more than half (63.9%) were scared and 2.4% had pleasant and unpleasant experience. Regarding received information on puberty, 92.3% had previously received information on puberty and among them, the major source of information was mother which is 79.8% followed by teacher/school which is 44%.

**Table 3. Respondents' Level of Knowledge and Attitude regarding Pubertal Health.**

Level of Knowledge	Frequency	Percent
Good knowledge (>66.7%)	3	1.7
Moderate knowledge (33.4-66.7%)	147	80.3
Poor knowledge (≤33.33%)	33	18.0
<b>Level of Attitude</b>		
Negative Attitude (≤78)	94	51.4
Positive Attitude (>78)	89	48.6

Table 3 shows that out of 183 respondents, 80.3% had moderate knowledge, 18% had poor knowledge and 1.7% had good knowledge regarding pubertal health whereas regarding attitude, 48.6% had positive attitude and 51.4% had negative attitude towards pubertal health.

**Table 4. Association between Level of Knowledge regarding Pubertal Health and Socio-demographic Characteristics of Respondents.**

Variables	Level of Knowledge		x <sup>2</sup>	p value
	Fair No. (%)	Poor No. (%)		
<b>Age group (in years)</b>				
Early adolescence (11-14)	90(79.6)	23(20.4)	1.077	0.299
Middle adolescence & above (15-19)	60(85.7)	10(14.3)		
<b>Level of education</b>				
Class 8	48(73.8)	17(26.2)	13.243	0.001*
Class 9	51(78.5)	14(21.5)		
Class 10	51(96.2)	2(3.8)		
<b>Ethnic group</b>				
Janjati	60(78.9)	16(21.1)	0.914	0.633
Brahmin/Chhetri	57(85.1)	10(14.9)		
Others <sup>a</sup>	33(82.5)	7(17.5)		
<b>Elder Siblings</b>				
Yes	96(79.3)	25(20.7)	1.669	0.196
No	54(87.1)	8(12.9)		
<b>Relation to sibling (n=121)</b>				
Brother	36(80.0)	9(20.0)	0.019	0.890
Sister	60(78.9)	16(21.1)		
<b>Received information on puberty</b>				
Yes	139(82.2)	30(17.8)	0.000	1.000*
No	11(78.6)	3(21.4)		
<b>Sources of information (n=169)</b>				
Friends	60(89.6)	7(10.4)	4.114	0.043
Teachers/School	69(93.2)	5(6.8)	10.687	0.001

Significance level at 0.05, \*Likelihood ratio

Table 4 shows that there is statistically significant association between level of knowledge regarding pubertal health and level of education (p=0.001), sources of information of friends (p=0.043) and source of information of teachers/school (p=0.001) and there is no significant association with other socio-demographic variables.

**Table 5. Association between Level of Attitude regarding Pubertal Health and Socio-demographic Characteristics of the Respondents.**

Variables	Level of Attitude		x <sup>2</sup>	p value
	Positive No. (%)	Negative No. (%)		
<b>Age group (in years)</b>				
Early adolescence (11-14)	53(46.9)	60(53.1)	0.354	0.552
Middle adolescence and above (15-19)	36(51.4)	34(48.6)		
<b>Level of education</b>				
Class 8	28(43.1)	37(56.9)	4.150	0.126
Class 9	29(44.6)	36(55.4)		
Class 10	32(60.4)	21(39.6)		
<b>Ethnic group</b>				
Janjati	32(42.1)	44(57.9)	3.967	0.138
Brahmin/Chhetri	39(58.2)	28(41.8)		
Others <sup>a</sup>	18(45.0)	22(55.0)		
<b>Elder Siblings</b>				
Yes	58(47.9)	63(52.1)	0.070	0.791
No	31(50)	31(50)		
<b>Relation to Sibling (n=121)</b>				
Brother	15(33.3)	30(66.7)	6.120	0.013
Sister	43(56.6)	33(43.4)		
<b>Received information on puberty</b>				
Yes	84(49.7)	85(50.3)	1.013	0.314
No	5(35.7)	9(64.3)		
<b>Sources of information (n=169)</b>				
Sisters	39(60.0)	26(40.0)	5.213	0.022
Teachers/School	43(58.1)	31(41.9)	4.464	0.035

Significance level at 0.05

Table 5 shows that there is statistical significant association between level of attitude and relation to the sibling (p=0.013), sources of information of sisters (p=0.022) and sources of information of teachers/school (p=0.035) and there is no significant association with other socio-demographic variables.

**Table 6. Relationship between Knowledge Score and Attitude Score regarding Pubertal Health of Respondents.**

	Knowledge	Attitude	p-value
Knowledge	1	0.395	
Attitude	0.395	1	<0.001

Significance level at 0.05, Spearman correlation coefficient

Table 6 depicts Spearman’s correlation which is calculated to find out bivariate relationship among knowledge and attitude regarding pubertal health, significant relationship was found between knowledge and attitude (r=0.395, p<0.001). The strength of the correlation was moderately positive. This indicates that the adolescents who have good knowledge possess good attitude and vice-versa.

## DISCUSSION

In this study, mean age of the adolescent girls was 14.27±1.33 with 61.7% of adolescent girls in early adolescence period which was similar to the mean age of adolescent girls on similar studies.<sup>7</sup>In the present study, majority (92.3%) had received information regarding puberty which was similar in the study done in Iran<sup>3</sup> which is 93.6%. The possible reason for receiving information regarding puberty could be high literacy of the parents. Among the respondents attending menarche in this study, 63.9% were scared during their first menstruation which was similar to 44% in the study conducted in Pakistan.<sup>8</sup> Despite of receiving information about puberty more than half of the respondents were scared during their first menstruation which may be due to incomplete and irrelevant information from different sources regarding pubertal health.

Major source of information regarding puberty in this study was mother followed by teachers, friends and sister which was 79.8%, 44%, 39.9% and 38.7% respectively. Similarly, 76.1% stated mother was their source of information in the study in Gujrat, India, 56% in Iran, and 64.9% in U.P India.<sup>9-10</sup> As an adolescent girl feels more comfortable talking about her health to her mother, she became the major source of information in most of the studies including this study.

The present study shows positive co-relation between knowledge and attitude which is contrary to the findings in a study done by Rani et al<sup>11</sup> which revealed no significant positive correlation. Reasons for contrary findings between two studies may be due to moderate level of knowledge and attitude in the present study as compared to low level of knowledge and attitude.

In the present study, majority of participants (82%) had fair knowledge. A similar finding was observed by Saghi et al<sup>3</sup> in Iran that showed 85.8% in moderate category. The similarity in both the study may be because of the majority of participants receiving previous information regarding puberty.

In the present study, we observed that participants with higher level of education possessed good knowledge compared to those with lower level of education which was similar to findings observed.<sup>12</sup> Reasons for similarity may be due to same educational level of the sample population in both the settings.

In our study, we observed that information regarding puberty from teacher/school and friends has significant association with level of knowledge which is not in accordance with the study done by Alosaimi et al<sup>13</sup> in Saudi Arabia and by Saghi et al<sup>3</sup> in Iran where information source from mother had good knowledge than information source from others. The dissimilarity may be due to information provided by school curriculum via teachers and friends is more reliable than information provided by mothers in the present study.

In our study, 48.6% had positive attitude towards pubertal health which is similar to the observations done by Manizheh et al<sup>12</sup> which was 54.4%. There was significant association between level of attitude and relation with their siblings which was similar to the observation done by Manizheh et al.<sup>12</sup> The presence of positive attitude was more common in participants with elder brother, this may be due to inclusion of reproductive health content in school curriculum which lets the awareness among all the children.

In the present study, the level of attitude was significantly associated with source of information which was not in accordance with the study done by Saghi et al.<sup>3</sup> In the present study we observed that positive attitude was more common in participants when the source of information was teachers and sisters whereas Saghi et al<sup>3</sup> observed that positive attitude was more common when source of information was health members compared other sources. The contrary results can be due to lack of contact with health members until any health issue and lack of presence of health care members in school leading to teacher or school as a source of information in the present study.

The study is conducted only in Bharatpur Metropolitan City and the research only covers government schools and private schools were not included in this study so, it cannot be generalized to private schools.

The study does not contain proportionate sample size from the different schools because there was large variation in study population in those 5 schools.

## CONCLUSIONS

Knowledge and attitude regarding pubertal health varies with the education level of the adolescent girls, relation with siblings and source of information from elder sister, teachers/schools or friends. Education at home and schools at an early age is essential to increase the knowledge regarding puberty and related health issues.

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