Chapter – 6

Data Analysis

Primary data from more than 4000 adolescents, 800 parents and 80 teachers were collected through structured questionnaires. The questionnaire were validated and codified to make compatible to run on the softwares. Different analysis tools as explained in earlier chapter were used to arrive at the analysis. The details are given as under. 'Q-S' is used for 'Questionnaire for Students', 'Q-P' is used for 'Questionnaire for Parents and 'Q-T' is used for questionnaire for Teachers as abbreviation in the following data analysis.

6.1 Demographic data through Frequency Analysis: Adolescents' questionnaires

The overall sample was studied for demographic inputs using frequency analysis to know the schools, gender, city, blood group, age and standard distribution.

6.1.1.City wise distribution

Table 6.1.1 City wise distribution

City	Frequency	Percent
Ahmedabad	170	4 2
Vadodara	2935	73.2
Jamnagar	101	2.5
Navsari	191	4.8
Rajkot	267	6.7
Surat	250	6 2
Vesma	93	2.3
Total	4007	100 0

Six cities of Gujarat were considered in the sample. Also, one school in Village Vesma, district- Navsari was also considered. Majority of schools were selected from Vadodara city, as our base was at Vadodara. Convenience and cost factor was considered to select majority of schools from Vadodara. The school principals were approached with the request letter for permission to conduct the study and allow 45 minutes session with their adolescent students standard wise.

6.1.2.School wise distribution

Table 6.1.2 School wise distribution

Sr.No.	School	City	Frequency	Percent
1	**Bright**	Baroda	78	1.9
2	**Convent**	Baroda	101	2.5
3	**GSFC**	Baroda	191	4.8
4	**IPCL**	Baroda	698	17.4
5	**Kendriya**	Baroda	224	5.6
6	**Maharani**	Baroda	250	6 2
7	**Mothers**	Baroda	93	2.3
8	**Muslim. E. S.**	Baroda	119	3.0
9	**Petrofils**	Baroda	636	15 9
10	**Refinary**	Baroda	291	7.3
11	**SFA-Lions**	Baroda	211	5.3
12	**Shaishav**	Baroda	130	3.2
13	**Sofiya**	Baroda	50	1.2
14	**A-One**	Amdavad	145	3.6
15	**Xaviers**	Amdavad	251	6.3
16	**Rosary**	Rajkot	37	.9
17	**St. Mary**	Rajkot	31	.8
18	**Balachadi**	Jamnagar	102	2.5
19	**Bhakt-ashram**	Navsari	47	1.2
20	**Experimental**	Surat	230	5.7
21	**Government**	Vesma-Navsari	92	2.3
	Total		4007	100.0

Total 4007 questionnaires of adolescents in 20 different schools responded were considered after validation. One assorted group was also considered, who was participating in a Lions-Quest programme on 'Skills For Adolescence (SFA) in Vadodara. The selection of schools consisted of government schools; government aided private schools, non-aided private schools. Also high income, middle income and low-income group schools were considered to get wider representation. The researcher is Vadodara based, so majority of schools were considered from Vadodara, along with few schools from main cities of Gujarat. The Faculty of Management Studies, M. S. University of Baroda was also at Vadodara, having one of the best libraries available for references. Vadodara was also having a cosmopolitan culture, with wide range of students available for analysis.

6.1.2.1 Types of schools

Table 6.1.2.1 Type & medium of schools		
Type of schools	**Frequency**	**Percent**
Co-Educational	3149	78.6
Only Boys	423	10.6
Only Girls	435	10.9
Total	4007	100.0
Medium of Instruction	**Frequency**	**Percent**
English medium	3198	79 8
Gujarati medium	809	20.2
Total	4007	100.0
Gender	**Frequency**	**Percent**
Boy	2250	56.2
Girl	1757	43.8
Total	4007	100.0

Majority of schools were co-educational. Only boys' schools were hardly any. Even only girls' schools were few. The trend is for co-education nowadays. The total sample consisted of 10.6 % of adolescents from only boys' schools, while 10.9 % of adolescents were from only girls' schools and 78.6 % of adolescents were studying in co-educational schools. The total sample of adolescents consisted of 56.2 % of boys and 43.8 % of girls.

Our sample of 4007 adolescents comprised of 2250 boys and 1757 girls. The questionnaire was in English language. The same was explained in Gujarati medium also and the adolescents could understand well as English was already taught to them as second language. 809 respondents comprising 20.2 % of adolescents were from Gujarati medium schools. 3198 respondents were from English medium comprising 79.8 %.

6.1.2.2 Standard wise distribution

Table 6.1.2.2 School Standards distribution

Standard	Frequency	Percent
VII	588	14.7
VIII	1490	37.2
IX	1812	45.2
X	82	2.0
XI	35	.9
Total	4007	100.0

The total adolescents were mainly from standard VII- 14.7 %, standard VIII-37.2 % and standard IX – 45.2 %. The standard X and XI adolescents were busy with their studies and schools could not permit time from standard X and XI. Also standard VI was excluded from the sample as the principals and teachers felt that they are too young for adolescence education during testing of the questionnaires.

6.1.3 Braces for uneven teeth

Table 6.1.3 Braces on the Teeth			
		Frequency	Percent
Valid	Yes	100	2 5
	No	3905	97.5
	Total	4005	100 0
Missing	System	2	.0
Total		4007	100.0

We had asked the respondents to know the unevenness of their teeth. The responses on braces of teeth were encouraging. Only 2.5 % were having braces on their teeth to make their uneven teeth even. Up to standard IX the use of braces on the uneven teeth is limited.

6.1.4 Age wise distribution of adolescents

Table 6.1.4 Age wise distribution of adolescents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	5	1	1	.1
	11	28	.7	.7	.9
	12	285	7.1	7.4	8 2
	13	992	24.8	25.7	34.0
	14	1460	36.4	37.8	71.8
	15	941	23.5	24.4	96.2
	16	129	3.2	3.3	99 5
	17	18	.4	.5	100 0
	Total	3858	96 3	100.0	
Missing	System	149	3 7		
Total		4007	100.0	.	

The age wise distribution of adolescents' shows majority of them are in the age group of 13 to 15 years, studying in standard VII, VIII and IX. The age group for study of pubertal changes, considered as an early adolescent group.

6.1.5 Blood group distribution

Table 6.1.5 Blood Group distribution			
		Frequency	Percent
Valid	O+	562	14.0
	O-	19	.5
	A+	345	8.6
	A-	12	.3
	B+	513	12.8
	B-	26	6
	AB+	99	2 5
	AB-	10	2
	Total	1586	39 6
Missing	System	2421	60.4
Total		4007	100.0

The response to blood group question was an eye opener. 60. 4 % did not know their blood group. Normally schools do have health check up, which includes blood group check up too. Adolescents can easily use their knowledge of blood group, in case of emergency. It will be helpful in case of road accidents, if they know their blood group. Positive blood group had high percentage with O+ = 35.4 %, B+ = 32.3 % and A+ = 21.8 % totaling up to 89.5 %.

6.1.6.t-test for Equality of Means: Power in eyes

Table 6.1.6 t-test for Equality of Means: Power in eyes						
	N	Missing	Mean	Median	Mode	Std. Deviation
Power In Left Eye	498	3509	1 58	1.5	1	1.2501
Power In Right Eye	495	3512	1.64	1.5	1	1.3096

	Gender	N	Mean	Std. Deviation
Power In Left Eye	Boy	283	1.536	1.351
	Girl	215	1.637	1.104
Power In Right Eye	Boy	283	1.557	1.423
	Girl	212	1 755	1.134

	t	p-value	95% Confidence Interval of the Difference	
			Lower	Upper
Power In Left Eye	-.886	.376	-.323	.122
Power In Right Eye	-1.663	.097	-.431	3.586E-02

For Power in Left Eye:

Ho: Mean Power in Left Eye of Boys is equivalent to Mean Power in Left Eye of Girls.

H1: Mean Power in Left Eye of Boys is not equivalent to Mean Power in Left Eye of Girls.

Test Result:

Since, p-value is greater than 0.05, there is no sufficient evidence against null hypothesis Ho to reject it at 5% level of significance. Thus, there is no significant difference between Mean Power in Left Eye of Boys and Girls.

For Power in Right Eye:

Ho: Mean Power in Right Eye of Boys is equivalent to Mean Power in Right Eye of Girls.

H1: Mean Power in Right Eye of Boys is not equivalent to Mean Power in Right Eye of Girls.

Test Result:

Since, p-value is greater than 0.05, there is no sufficient evidence against null hypothesis Ho to reject it at 5% level of significance. Thus, there is no significant difference between Mean Power in Right Eye of Boys and Girls.

6.1.7.Body Mass Index

Respondents were asked to mention their height and weight as well as birth date. 588 (14.7 %) adolescents were not remembering their weight, while 1898 (47.4 %) adolescents were not remembering their height. Birth date was not mentioned by 149 (3.7 %) adolescents. Height and weight is measured almost every year in most of the schools.

Table 6.1.7.A weight, height, BMI analysis						
	N	Missing	Mean	Median	Mode	Std. Deviation
Weight(kg)	3419	588	42.60	41	40	9.6706
Height(ft)	2109	1898	5 08	5.2	5 1	0 4734
Body Mass Index	2024	1983	18.73	17.90	17.22	4 2228
Age	3858	149	13.89	14	14	1 0233

Table 6.1.7.B Body Mass Index		
Body Mass Index	Frequency	Percent
Underweight (<18.5)	1157	57.2
Normal Weight (18.5 - 25)	671	33.2
Overweight (25 - 30)	153	7.6
Obesity (> 30)	43	2.1
Total	2024	100 0
Missing	1983	
Grand Total	4007	

The median weight was 40 kgs and median height was 5.2 feet. The body mass index was suggesting that 57.2 % of adolescents were underweight during this age period. Overweight was 7.6 % and obesity was among 2.1 % of adolescents in the total sample. There is ample scope to generate awareness on height and weight related health, exercise and diet issues.

6.1.7.1.Skewness on height and weight data

Skewness measures to what extent a distribution of values deviates from symmetry around the mean. A value of zero (0) represents a symmetric or evenly balanced distribution. A positive Skewness indicates a greater number of smaller values. A negative Skewness indicates a greater number of larger values. A Skewness value between ±1.0 is considered excellent for most of the cases.

Table 6.1.7.1.A Skewness on height and weight data

Height (ft)	Boys	Girls	Weight (kg)	Boys	Girls	Body Mass Index	Boys	Girls
Mean	5 152	4.969	Mean	45.675	42 813	Mean	18.6402	18 8843
Median	5.200	5 100	Median	45 000	42.000	Median	17.7357	17.9324
Std. Deviation	.485	.438	Std. Deviation	10.304	8 863	Std. Deviation	4 1283	4.3661
Minimum	3.5	3.9	Minimum	20 0	21.0	Minimum	9 94	9 47
Maximum	6.4	5.9	Maximum	82.0	85.0	Maximum	44.82	42 06
Skewness	-.798	-.834	Skewness	.558	.739	Skewness	1.361	1.228
Kurtosis	.461	-.155	Kurtosis	.291	1 208	Kurtosis	3.067	2.248

Table 6.1.7.1.B Skewness on height and weight data

Body Mass Index	VII	VII	VIII	IX	X	XI
Mean	18.2817	18.8004	18.8004	18.7715	18.7901	19.2303
Median	17.3652	17 9133	17.9133	17.9133	18.5348	19.8502
Mode	13.45(a)	17.91	17.91	17.22	19.19	14.42(a)
Std. Deviation	4 5070	4 4275	4.4275	4 0460	3 3842	2.5545
Skewness	1.662	1.383	1.383	1.148	.758	.229
Kurtosis	5.823	2 718	2.718	1.669	.371	1.472
Minimum	10.63	9.94	9.94	9.47	13.04	14 42
Maximum	44.82	42 06	42.06	37.60	27 68	25.61

As, the distribution of BMI is highly skew; median is an appropriate measure of central tendency compared to arithmetic mean, as median is insensitive about extreme values.

6.1.7.2.Non-Parametric Tests Mann-Whitney Test

As the distribution of BMI was highly skewed, non-parametric test is applied as under:

Table 6.1.7.2.A Non-Parametric Tests Mann-Whitney Test

Ranks

	Gender	N	Mean Rank	Sum of Ranks
Body Mass Index	Boy	1238	998.48	1236122.50
	Girl	786	1034 58	813177.56
	Total	2024		

Test Statistics	
	Body Mass Index
Mann-Whitney U	469181.500
Z	-1.354
p-value	176

Kruskal-Wallis Test

Ranks			
	Standard	N	Mean Rank
Body Mass Index	VII	216	931.99
	VIII	773	1007.77
	IX	975	1027 47
	X	41	1075.10
	XI	19	1216.71
	Total	2024	

Test Statistics (a,b)	
	Body Mass Index
Chi-Square	7.580
df	4
P value	108
a Kruskal Wallis Test	
b Grouping Variable: Standard	

Median Test

Frequencies		
	Body Mass Index	
Standard	> Median	<= Median
V	0	0
VI	0	0
VII	99	117
VIII	387	386
IX	488	487
X	23	18
XI	15	4

Test Statistics (b)	
	Body Mass Index
N	2024
Median	17 9017
Chi-Square	8 480(a)
df	4
Asymp. Sig.	.075
a 0 cells (0%) have expected frequencies less than 5. The minimum expected cell frequency is 9 5	
b Grouping Variable: Standard	

Oneway Analysis of Variance : Body Mass Index

Table 6.1.7.2.B Oneway Analysis of Variance : ***Body Mass Index***

Std.	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	upper Bound		
VII	216	18.2817	4.5070	.3067	17.6772	18.8861	10.63	44.82
VIII	773	18.8004	4.4275	.1592	18.4878	19.1130	9.94	42.06
IX	975	18.7715	4.0460	.1296	18.5173	19 0258	9 47	37.60
X	41	18.7901	3.3842	.5285	17.7219	19.8582	13.04	27.68
XI	19	19.2303	2.5545	.5860	17.9990	20.4615	14 42	25.61
Total	2024	18.7350	4.2228	9.386E-02	18.5509	18.9191	9 47	44.82

Ho: All Standards have equivalent effect on BMI.

H1: At least one standard has significantly different effect on BMI.

Table 6.1.7.2.C ANOVA on Body Mass Index

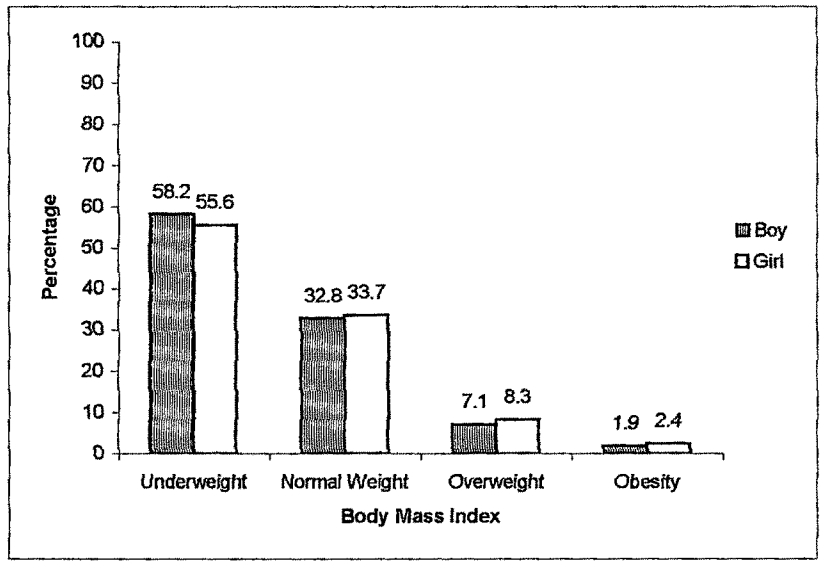
Source	df	Sum of Squares	Mean Square	F	P value
Between Standards	4	53.788	13.447	.754	.555
Within Standards	2019	36020.476	17.841		
Total	2023	36074.265			

Test Result: As p-value corresponding to Standard effect is greater than 0.05, there is no significant between mean value of BMI of different standards.

6.1.7.3.Body Mass Index between boys and girls

Table 6.1.7.3 Body Mass Index between boys and girls				
Body Mass Index	**Boy**		**Girl**	
	Count	***Col %***	***Count***	***Col %***
Underweight (<18.5)	720	58.2	437	55.6
Normal Weight (18.5 - 25)	406	32.8	265	33.7
Overweight (25 - 30)	88	7.1	65	8.3
Obesity (> 30)	24	1.9	19	2.4
Total	1238	100.0	786	100.0

Chart 6.1.7.3.Body Mass Index between boys and girls

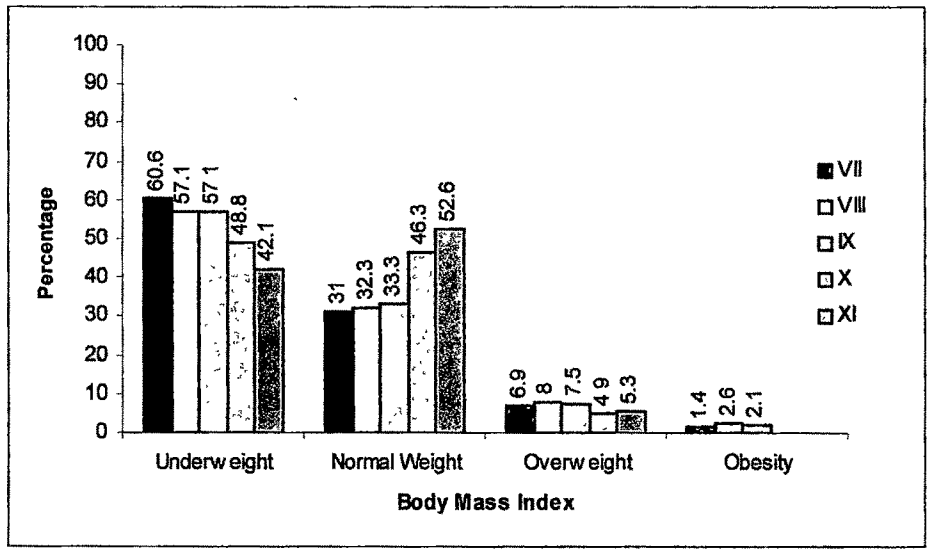


Body Mass Index between boys and girls suggests that 58.2 % of boys and 55.6 % of girls were underweight. So boys as well as girls need to be motivated for their physical health during the pubertal growth period. Obesity percentages were less as seen for boys only 1.9 % and for girls only 2.4 %. Food industry can target this group with nourishing foods.

6.1.7.4.Body Mass Index between standards VII to XI

Table 6.1.7.4.Body Mass Index between standards VII to XI										
Body Mass Index	VII		VIII		IX		X		XI	
	Count	Col %	Count	Col %	Count	Col %	Count	Col %	Count	Col %
Underweight (<18.5)	131	60.6	441	57.1	557	57.1	20	48.8	8	42.1
Normal Weight (18.5 - 25)	67	31.0	250	32.3	325	33.3	19	46.3	10	52.6
Overweight (25 - 30)	15	6.9	62	8.0	73	7.5	2	4.9	1	5.3
Obesity (> 30)	3	1.4	20	2.6	20	2.1				
Total	216	100.0	773	100.0	975	100.0	41	100.0	19	100.0

Chart 6.1.7.4.Body Mass Index between standards VII to XI



The body mass index across the standard shows that the underweight percentage ranged between 60.6 % to 57.1 % during standard VII, VIII, and IX and which got reduced during

higher standard to 48.8 % in X and 42.1 % in XI. Further study on adolescents in XII standard and college may be helpful to arrive at Body Mass Index in late adolescent period.

6.1.8 Q-S-A : Importance of attributes in personality development

Twenty-two attributes were placed for its importance in future personality development in question A in students' questionnaire. The respondents were asked to tick mark their response on a scale of 1 to 6 (Least, Less, Average, Important, Very Important, Very Very Important).

6.1.8.1. How important is Public Speaking for personality development?

Table 6.1.8.1 How important is Public Speaking for personality development?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	94	2.3	2.3	2.3
	Less	186	4.6	4.6	7.0
	Average	475	11.9	11.9	18.9
	Important	916	22.9	22.9	41.8
	Very Important	876	21.9	21 9	63.6
	Very Very Important	1455	36 3	36.4	100.0
	Total	4002	99.9	100.0	
Missing	System	5	.1		
Total		4007	100.0		

Only 18.9 cumulative % of adolescents responded average, less and least importance of public speaking, required for future personality development in life. While 36.4 % believed that public speaking is very very important giving highest weightage of 6 on ordinal scale. 21.9 % believed that public speaking is very important and 22.9 % believed that it was important. 81.1 % of adolescents are aware of importance of learning public speaking, which is a good trend to notice.

6.1.8.2.How important is Event Participation in personality development?

Table 6.1.8.2 How important is Event Participation in personality development?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	67	1 7	1.7	1.7
	Less	192	4 8	4.8	6.5
	Average	459	11 5	11.5	18.0
	Important	975	24.3	24.4	42.3
	Very Important	998	24.9	25.0	67.3
	Very Very Important	1308	32.6	32 7	100.0
	Total	3999	99.8	100.0	
Missing	System	8	.2		
Total		4007	100.0		

Respondents, (82 %), gave more weightage to event participation for personality development. More nos. of such events may encourage adolescents to participate and develop skill of teamwork. Event management courses can be targeted.

6.1.8.3.How important is Mastery In An Art?

Table 6.1.8.3 How important is Mastery In An Art?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	145	3.6	3.6	3 6
	Less	341	8 5	8 5	12.2
	Average	771	19.2	19 3	31.5
	Important	936	23.4	23.4	54.9
	Very Important	808	20.2	20.2	75.2
	Very Very Important	992	24.8	24 8	100 0
	Total	3993	99.7	100.0	
Missing	System	14	.3		
Total		4007	100 0		

The frequency distribution suggests that 31.5 % of total adolescents consider average and less important mastery in an art for personality development. The art activities do not have

weightage in the examination to that extent. Focus group interaction revealed that many consider art as a hobby and not a serious skill development.

6.1.8.4.How important is Vocabulary?

Table 6.1.8.4 How important is Vocabulary?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	62	1.5	1.6	1.6
	Less	158	3.9	4.0	5.5
	Average	357	8 9	8.9	14.5
	Important	697	17.4	17.5	31.9
	Very Important	876	21 9	22.0	53.9
	Very Very Important	1840	45 9	46 1	100.0
	Total	3990	99.6	100.0	
Missing	System	17	4		
Total		4007	100.0		

Vocabulary in any language plays an important role. Majority of respondents, 85.5 % felt that vocabulary is important or very important in developing personality. It helps in better communication.

6.1.8.5.How important is Decision Making?

Table 6.1.8.5 How important is Decision Making?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	60	1.5	1.5	1 5
	Less	128	3 2	3 2	4.7
	Average	330	8.2	8.3	13.0
	Important	729	18.2	18 3	31.2
	Very Important	1043	26.0	26.1	57.4
	Very Very Important	1701	42.5	42 6	100.0
	Total	3991	99.6	100.0	
Missing	System	16	.4		
Total		4007	100 0		

The contribution of learning decision making in personality development is considered important or very important and above by 83 % respondents. The adolescents start making their own decisions mainly with respect to their dress and entertainment.

6.1.8.6. How important is Good Postures?

Table 6.1.8.6 How important is Good Postures?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	58	1 4	1 5	1.5
	Less	137	3 4	3.4	4.9
	Average	439	11.0	11.0	15 9
	Important	817	20.4	20 5	36 4
	Very Important	1012	25 3	25.4	61.7
	Very Very Important	1526	38 1	38.3	100.0
	Total	3989	99.6	100.0	
Missing	System	18	.4		
Total		4007	100.0		

38.3 % respondents considered good postures very very important. The sitting and standing postures help in personality development as felt by 84.1 % respondents in important and above categories. Postures contribute towards look also, as felt during discussion.

6.1.8.7 How important is Communication Skill?

Table 6.1.8.7 How important is Communication Skill?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	52	1.3	1 3	1 3
	Less	119	3.0	3 0	4.3
	Average	380	9 5	9 5	13 8
	Important	715	17.8	17.9	31.8
	Very Important	1081	27.0	27 1	58.9
	Very Very Important	1638	40.9	41 1	100 0
	Total	3985	99.5	100 0	
Missing	System	22	5		
Total		4007	100 0		

Cumulative percent of 86.2 % respondents observed that communication skill is important and above for their personality development. Opportunities will to be created to develop this skill gradually during adolescence period.

6.1.8.8 How important is Mastery in a Sport?

Table 6.1.8.8 How important is Mastery in A Sport?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	76	1.9	1.9	1.9
	Less	192	4 8	4.8	6 7
	Average	560	14.0	14.0	20 8
	Important	851	21.2	21.3	42 1
	Very Important	941	23.5	23 6	65.7
	Very Very Important	1367	34 1	34 3	100.0
	Total	3987	99.5	100.0	
Missing	System	20	.5		
Total		4007	100.0		

Importance of sports in personality development as responded by adolescents is 21.3 % (important), 23.6 % (very important) and 34.3 % (very very important). This shows that cumulative percent of 79.2 % attach importance to sports. More sports activities in the school as well after school hours will help adolescents in their physical growth.

6.1.8.9 How important is Morning Sunlight?

Morning sunlight helps in converting to vitamin D required for bone development during puberty growth. Cumulative percentage of 86.9 % respondents considered that morning sunlight is important and above for bone development resulting into good height and good body image.

Table 6.1.8.9 How important is Morning Sunlight?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	58	1 4	1.5	1.5
	Less	122	3.0	3 1	4.5
	Average	341	8.5	8 5	13.1
	Important	723	18 0	18.1	31.2
	Very Important	939	23.4	23 5	54.7
	Very Very Important	1807	45.1	45 3	100 0
	Total	3990	99 6	100.0	
Missing	System	17	.4		
Total		4007	100.0		

6.1.8.10 How important is Regular Exercise?

Table 6.1.8.10 How important is Regular Exercise?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	71	1.8	1.8	1.8
	Less	163	4.1	4 1	5.9
	Average	335	8 4	8 4	14 2
	Important	745	18.6	18.7	32.9
	Very Important	1062	26.5	26.6	59.5
	Very Very Important	1617	40 4	40.5	100 0
	Total	3993	99.7	100.0	
Missing	System	14	3		
Total		4007	100 0		

85.8 % of cumulative respondents attached importance to regular exercise. A routine daily exercise at school may be desirable, if it is compulsory.

6.1.8.11 How important is Competitive Attitude?

Competitive attitude to improve day by day on different skills by individuals is desirable as responded by 85.1 % of respondents as important and above.

Table 6.1.8.11 How important is Competitive Attitude?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	64	1 6	1 6	1.6
	Less	137	3 4	3.4	5.1
	Average	391	9 8	9.8	14.9
	Important	798	19.9	20.1	34.9
	Very Important	1066	26 6	26.8	61.7
	Very Very Important	1522	38 0	38.3	100 0
	Total	3978	99.3	100.0	
Missing	System	29	.7		
Total		4007	100.0		

6.1.8.12 How important is Removal of Stage Fear?

Table 6.1.8.12 How important is Removal of Stage Fear?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	89	2 2	2.2	2 2
	Less	154	3 8	3.9	6.1
	Average	312	7.8	7 8	13 9
	Important	617	15.4	15.5	29.4
	Very Important	1055	26.3	26.5	55.9
	Very Very Important	1756	43 8	44.1	100 0
	Total	3983	99.4	100 0	
Missing	System	24	6		
Total		4007	100.0		

86.1 % cumulative percent of respondents felt that stage fear has to be removed for future personality development. The first time entry on stage is difficult for everyone. Unless it is compulsory for all, many of them felt they have not gone on stage. Also, for teachers it is easy to choose few who regularly participate on stage.

6.1.8.13 How important is Friendliness?

Table 6.1.8.13 How important is Friendliness?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	60	1 5	1.5	1.5
	Less	87	2 2	2.2	3.7
	Average	257	6.4	6.4	10.1
	Important	638	15 9	16 0	26 1
	Very Important	999	24.9	25.1	51.2
	Very Very Important	1945	48.5	48.8	100.0
	Total	3986	99 5	100.0	
Missing	System	21	.5		
Total		4007	100 0		

Majority respondents, 89.9 cumulative percentage, felt that friendliness build personality. Friendliness with peers help them in all aspects and increase their teach building as well as help in study as informed during the discussion with focused group.

6.1.8.14 How important is formal Education?

Table 6.1.8.14 How important is formal Education?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	21	.5	5	.5
	Less	46	1 1	1.2	1.7
	Average	149	3.7	3.7	5 4
	Important	377	9.4	9.5	14.9
	Very Important	660	16.5	16.6	31 4
	Very Very Important	2732	68 2	68 6	100.0
	Total	3985	99 5	100.0	
Missing	System	22	.5		
Total		4007	100 0		

94.6 cumulative percent of respondents felt that formal education is important or very important to build personality. Their intellectual development plays a major role in this age.

6.1.8.15 How important is Language?

Table 6.1.8.15 How important is Language?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	21	5	5	5
	Less	60	1.5	1.5	2.0
	Average	217	5.4	5.5	7 5
	Important	663	16 5	16.7	24 2
	Very Important	1152	28 7	29.0	53.2
	Very Very Important	1860	46.4	46.8	100.0
	Total	3973	99 2	100.0	
Missing	System	34	8		
Total		4007	100 0		

92.5 % of cumulative percent of respondents attached importance to learning of language to improve upon communication skills and public speaking. Group discussion for admission test was important to them. Language through vocabulary and grammar improvement is the need of the hour to compete in entrance examinations.

6.1.8.16 How important is Balanced Diet?

Table 6.1.8.16 How important is Balanced Diet?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	47	1.2	1.2	1.2
	Less	92	2.3	2 3	3.5
	Average	318	7.9	8.0	11.5
	Important	669	16.7	16.8	28 3
	Very Important	1144	28.6	28.8	57 0
	Very Very Important	1709	42 7	43.0	100.0
	Total	3979	99.3	100.0	
Missing	System	28	.7		
Total		4007	100.0		

90.5 % cumulative percent of adolescents believed that balanced diet is important or above for body growth.

6.1.8.17 How important is Good Looks?

Table 6.1.8.17 How important is Good Looks?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	76	1.9	1 9	1.9
	Less	158	3.9	4.0	5.9
	Average	497	12.4	12.5	18.4
	Important	830	20.7	20 9	39 2
	Very Important	969	24.2	24.4	63.6
	Very Very Important	1449	36.2	36 4	100.0
	Total	3979	99 3	100 0	
Missing	System	28	.7		
Total		4007	100.0		

81.6 % of cumulative respondents felt that good looks is important for personality development. 36.4 % of adolescents believed that good looks were very very important for personality.

6.1.8.18 How important is Positive Attitude?

Table 6.1.8.18 How important is Positive Attitude?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	46	1.1	1 2	1.2
	Less	66	1.6	1.7	2 8
	Average	286	7 1	7 2	10.0
	Important	621	15 5	15.6	25.6
	Very Important	1109	27.7	27.9	53.5
	Very Very Important	1848	46 1	46 5	100.0
	Total	3976	99 2	100.0	
Missing	System	31	.8		
Total		4007	100 0		

90 % cumulative percent responded that positive attitude is important and above for personality development. Positive attitude helps them to enjoy school atmosphere.

6.1.8.19 How important is to Love Your Self?

Table 6.1.8.19 How important is to Love Your Self?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	70	1.7	1.8	1.8
	Less	107	2 7	2.7	4.4
	Average	324	8.1	8.1	12.6
	Important	693	17 3	17 4	30 0
	Very Important	927	23.1	23.3	53.3
	Very Very Important	1859	46 4	46.7	100.0
	Total	3980	99.3	100.0	
Missing	System	27	.7		
Total		4007	100 0		

91.4 % cumulative percent of respondents have felt that loving one self is important and above. One is black or fair, thin or fat, short or tall, it is the body, which is the individual asset, and instead of criticizing any organ or part thereof, it is wiser to love own body first. It builds up the self-confidence and self esteem.

6.1.8.20 How important is to learn Computer Operation?

Table 6.1.8.20 How important is to learn Computer Operation?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	78	1.9	2.0	2.0
	Less	123	3.1	3.1	5 0
	Average	456	11.4	11.5	16.5
	Important	770	19.2	19.3	35.8
	Very Important	1050	26.2	26 4	62.2
	Very Very Important	1504	37 5	37 8	100.0
	Total	3981	99.4	100.0	
Missing	System	26	.6		
Total		4007	100.0		

83.5 % cumulative respondents have attached importance to learning computer operations, which can help them in every field to gain the confidence and improve on the personality. Every profession demands the operating knowledge of computer. The presentation in future are all computer based and familiarity will help to boost the self-confidence.

6.1.8.21 How important is Walking Style?

Table 6.1.8.21 How important is Walking Style?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	101	2.5	2.5	2.5
	Less	165	4.1	4.1	6.7
	Average	474	11.8	11.9	18 6
	Important	823	20.5	20 7	39.3
	Very Important	1073	26 8	27.0	66 3
	Very Very Important	1341	33 5	33.7	100.0
	Total	3977	99.3	100.0	
Missing	System	30	.7		
Total		4007	100.0		

Importance of walking style in overall personality development was described. Walking in to the interview room or walking on the presentation platform or even walking with friends does matter. 81.4 % cumulative respondents felt importance of walking style in grooming personality. Straight-line walk with erect posture may add to pleasant personality.

6.1.8.22 How important is Reading habit?

Reading habits of other than the textbooks and school curriculum in the form of newspaper, magazines, novels, and storybook etc. can be cultivated. 84.1 % cumulative percent of respondents attached the importance of reading habits. School libraries can play a great role in this direction. Reading can help in improvement of vocabulary and language, which ultimately result into better communication skill.

Table 6.1.8.22 How important is Reading habit?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	83	2.1	2 1	2 1
	Less	155	3.9	3 9	6.0
	Average	393	9.8	9.9	15 9
	Important	664	16.6	16 7	32.7
	Very Important	919	22.9	23 2	55.8
	Very Very Important	1752	43.7	44.2	100.0
	Total	3966	99.0	100.0	
Missing	System	41	1.0		
Total		4007	100.0		

6.1.8.23.Factor Analysis for personality development attributes

KMO Test: A measure of whether distribution of values is adequate for conducting factor analysis.

Measure Levels: A measure >0.9 is marvelous, >0.8 is meritorious, >0.7 is middling, >0.6 is mediocre, >0.5 is miserable, and <0.5 is unacceptable.

Table 6.1.8.23 Factor Analysis for personality development attributes

Table 6.1.8.23A Descriptive Statistics

Attributes	Mean	Std. Deviation	N
Public Speaking	4.66	1 32	3837
Event Participation	4.64	1.26	3837
Mastery In An Art	4.22	1.41	3837
Vocabulary	4.92	1.26	3837
Decision Making	4.92	1.20	3837
Good Postures	4.79	1.24	3837
Communication Skills	4.89	1.20	3837
Master A Sport	4.62	1.31	3837
Morning Sunlight	4.95	1.21	3837

Regular Exercise	4 85	1.25	3837
Competitive Attitude	4.81	1.23	3837
Removal Of Stage Fear	4.92	1.27	3837
Friendliness	5 07	1 16	3837
Education	5.46	95	3837
Language	5.12	1 03	3837
Balanced Diet	4.98	1.14	3837
Good Looks	4.70	1.28	3837
Positive Attitude	*5.06*	*1 11*	3837
Love Your Self	4 97	1.22	3837
Computer Operations	4.78	1.25	3837
Walking Style	4 66	1 30	3837
Reading	4.88	1.29	3837

Bartlett's Test: This is a measure of the multivariate normality of set of distribution. It also tests whether the correlation matrix is an identity matrix. A significant value <0.5 indicates that these data do not produce an identity matrix (or "differ significantly from identity") and are thus approximately multivariate normal and acceptable for factor analysis.

Note: Correlation matrix is not an identity matrix and is approximately multivariate normal is assumption/ requirement of factor analysis.

Table 6.1.8.23B KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.922
Bartlett's Test of Sphericity	**Approx. Chi-Square**	14508.943
	df	231
	Sig.	.000

Test Result: KMO test shows data set is marvelous for applying factor analysis. Also, according to Bartlett's test our data set is approximately multivariate normal and acceptable for factor analysis.

Table 6.1.8.23C Communalities

	Initial	*Extraction*
Public Speaking	1.000	.425
Event Participation	1 000	.413
Mastery In An Art	1.000	386
Vocabulary	1 000	.484
Decision Making	1.000	.364
Good Postures	1.000	.358
Communication Skills	1.000	442
Master A Sport	1.000	.403
Morning Sunlight	1 000	.451
Regular Exercise	1 000	.483
Competitive Attitude	1.000	.394
Removal Of Stage Fear	1.000	412
Friendliness	1 000	.335
Education	1 000	.576
Language	1.000	.407
Balanced Diet	1 000	.335
Good Looks	1 000	.521
Positive Attitude	1.000	363
Love Your Self	1 000	.411
Computer Operations	1.000	.285
Walking Style	1 000	516
Reading	1.000	299

Extraction Method: Principal Component Analysis

Table 6.1.8.23D Total Variance Explained

	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.290	24.046	24.046	5.290	24.046	24.046	2.878	13 082	13 082
2	1.472	6.693	30.739	1.472	6.693	30 739	2.173	9 877	22 959
3	1.172	5.328	36.067	1.172	5.328	36.067	2.025	9.206	32.165
4	1.130	5.136	41.202	1.130	5 136	41 202	1.988	9 037	41.202
Extraction Method: Principal Component Analysis									

There are four factors with Eigen values larger than 1.0 and they account more than 40 % of the total variation.

Table 6.1.8.23E Rotated Component Matrix (a)

	Component			
	1	2	3	4
Vocabulary	.620	.170	-7.748E-02	252
Communication Skills	.617	7 401E-02	.200	.127
Public Speaking	605	220	8 919E-02	-5 935E-02
Competitive Attitude	.570	.157	.144	.155
Decision Making	555	2.185E-02	7.478E-02	224
Removal Of Stage Fear	531	-4.901E-03	5.419E-02	.357
Good Postures	.452	211	.324	5.898E-02
Morning Sunlight	8 270E-02	.613	7.691E-02	.249
Master A Sport	7 434E-03	596	.218	1.660E-02
Regular Exercise	.112	.547	3.933E-02	.411
Event Participation	.417	.486	3 131E-02	-4 225E-02
Mastery In An Art	.336	.484	.102	-.168
Reading	.145	.424	.216	228
Computer Operations	.215	302	.289	254
Good Looks	3 774E-02	188	.695	4.578E-02

Walking Style	167	169	678	1 887E-02
Love Your Self	7 983E-02	.128	.612	115
Friendliness	.156	-2.574E-02	.397	.391
Education	.215	7.891E-02	-5.480E-02	721
Language	.143	.221	.156	.560
Balanced Diet	7.759E-02	.325	.209	.424
Positive Attitude	.350	-7.526E-02	.308	.374
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a Rotation converged in 14 iterations				

According to Questionnaire for Students there are 22 variables that give measure of Personality Development in Students. Out of these, 14 variables constitute four factors, which explain more than 40% of total variation.

Four extracted factors are as follow:

1. Communication & presentation & self confidence Activity
2. Sport Activity
3. Body Image Activity
4. Educational Activity

Communication & presentation & self confidence activity involves Vocabulary, Communication Skills, Public Speaking, Competitive Attitude, Decision Making and Removal of stage fear. These variables have heavy factor loading on Factor 1 i.e. Communication & Presentation Activity.

Sport Activity involves Morning Sunlight, Master A Sport and Regular Exercise. These variables have heavy factor loading on Factor 2. i.e. Sport Activity.

Body Image Activity involves Good looks, Walking Style and Love your self. These variables have heavy factor loading on Factor 3 i.e. Body Image Activity.

Educational Activity involves Education and Language. These variables have heavy factor loading on Factor 4 i.e. Educational Activity.

6.1.9. Q-S-B : Efforts for body and mind development during adolescence

In the earlier question they responded on the importance of various attributes for personality development. In this section the respondents were asked if they really put extra effort for their body and mind development in few activities. The four point ordinal scale was used with categories labeled as: never, sometimes, frequently and always.

6.1.9.1 Are you participating in events?

Table 6.1.9.1 Are you participating in Events?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	301	7.5	7.5	7.5
	Sometimes	2177	54 3	54 6	62 1
	Frequently	884	22.1	22.2	84 3
	Always	627	15.6	15.7	100 0
	Total	3989	99.6	100.0	
Missing	System	18	.4		
Total		4007	100.0		

Only 7.5 % adolescents responded that they never participate in the events. While 54.6 % responded that they sometimes participate. 22.2 5 replied that they participate frequently and 15.7 % replied that they always participate. While in earlier question, 82 % cumulative percent of respondents, gave more weightage to event participation for personality

development. Extra efforts are needed in the school to motivate more than 62.1 % to participate frequently. Adolescents attach importance but actual effort is not happening.

6.1.9.2 Are you playing sports games?

Table 6.1.9. 2 Are you Playing Sports Games for body and mind development?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	184	4.6	4.6	4.6
	Sometimes	1060	26.5	26.5	31.2
	Frequently	1058	26.4	26.5	57.7
	Always	1691	42.2	42 3	100.0
	Total	3993	99.7	100 0	
Missing	System	14	.3		
Total		4007	100 0		

42.3 % responded that they always play sports games. 4.6% respondents are not playing any sports game, while 26.5 % play sometimes only. Cumulatively they are 31.2 % of respondents who are yet to be motivated to play sports frequently. Although 79.2 % considered sports as important in earlier question.

6.1.9.3 Are you doing Regular Exercises?

Table 6.1.9.3 Are you doing Regular Exercises?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	439	11.0	11.0	11.0
	Sometimes	1778	44.4	44.6	55.6
	Frequently	889	22.2	22.3	77.8
	Always	884	22.1	22.2	100.0
	Total	3990	99 6	100.0	
Missing	System	17	.4		
Total		4007	100.0		

11 % of respondents never do regular exercise, while 44.6 % do exercise sometimes only. Cumulatively they are 55.6 % adolescents, who can be motivated through opportunities or

compulsory activities to carry out regular exercise. The physical activities have reduced due to many technological developments for comfortable life. Absence of exercise affects the physical health and growth. 85.8 % of cumulative respondents attached importance to regular exercise in earlier response.

6.1.9.4 Are you eating Balanced Diets?

Table 6.1.9.4 Are you eating Balanced Diets?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	213	5.3	5.4	5 4
	Sometimes	864	21 6	21 7	27.1
	Frequently	1249	31.2	31.4	58.5
	Always	1652	41.2	41.5	100.0
	Total	3978	99.3	100.0	
Missing	System	29	.7		
Total		4007	100.0		

Eating of balanced diet for growth of body parts during puberty is to be understood. 5.4 % of respondents never care to eat balanced diet. 21.7 % responded that they sometimes only eat balanced diet. 90.5 % cumulative percent of adolescents believed that balanced diet is important or above for body growth in earlier response. The body mass index shows that 57.2 % of adolescents are below average in weight. Proper nutrition is desired during this critical growth period of life.

6.1.9.5 Are you Keeping Positive Attitude?

27.6 % cumulative percent of respondents need motivation to keep positive attitude in their life for enjoying their adolescence life period.

Table 6.1.9.5 Are you Keeping Positive Attitude?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	173	4.3	4.3	4 3
	Sometimes	926	23 1	23 3	27 6
	Frequently	1342	33 5	33 7	61.3
	Always	1541	38.5	38.7	100.0
	Total	3982	99.4	100.0	
Missing	System	25	.6		
Total		4007	100.0		

6.1.9.6 Are you Doing Meditation/Yoga?

Table 6.1.9.6 Are you Doing Meditation/Yoga?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	964	24 1	24.3	24 3
	Sometimes	1823	45 5	45 9	70 2
	Frequently	654	16.3	16.5	86.7
	Always	528	13.2	13.3	100 0
	Total	3969	99.1	100.0	
Missing	System	38	.9		
Total		4007	100 0		

Meditation and yoga is not very popular among adolescents as seen that 70.2 cumulative percent of respondents need motivation. 24.3 % of respondents are never doing any such activities. Meditation and yoga help them in concentration in their study as well as other activities. It can help in reducing stress. The stretch yoga-asanas can help in increasing their height as well as make their body more flexible.

6.1.9.7 Are you making your own decisions?

64.2 % of respondents have started making their own decisions frequently or always. This initiative cultivates their independent abilities. The cognitive development helps them to seek their own identity in the society.

Table 6.1.9.7 Are you making your own decisions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	200	5 0	5.0	5 0
	Sometimes	1222	30.5	30.7	35 8
	Frequently	1314	32.8	33.1	68 8
	Always	1239	30.9	31.2	100.0
	Total	3975	99.2	100.0	
Missing	System	32	.8		
Total		4007	100.0		

6.1.9.8 Do you expose your body to Morning Sunlight?

Table 6.1.9.8 Do you expose your body to Morning Sunlight?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	389	9 7	9 8	9 8
	Sometimes	1375	34 3	34.6	44 4
	Frequently	1075	26.8	27 1	71.5
	Always	1130	28.2	28.5	100.0
	Total	3969	99.1	100.0	
Missing	System	38	.9		
Total		4007	100.0		

The opportunities to go in the sunlight in the early morning have been reduced. 9.8 % of respondents never have exposure to early morning sunlight, while 34.6 5 sometime avail. The school timings and outdoor activities can be planned to get this natural benefit for vitamin D resulting into better bone development.

6.1.9.9 Are you widening your Friend Circle?

Table 6.1.9.9 Are you widening your Friend Circle?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	224	5 6	5.7	5.7
	Sometimes	656	16 4	16.6	22.3
	Frequently	1018	25 4	25.8	48 0
	Always	2054	51.3	52 0	100.0
	Total	3952	98 6	100 0	
Missing	System	55	1.4		
Total		4007	100 0		

77.7 % cumulative percent of respondents do efforts to increase their friend circle during adolescence age. This age have change in their social relationship. They seek new friends and like to remain in a group. Acceptance in the friend circle gets top priority. Although we have not asked about the opposite gender friendship here.

6.1.9.10 Factor Analysis for efforts made for personality development

Table 6.1.9.10 Factor Analysis for efforts made for personality development

Table 6.1.9.10A Descriptive Statistics

	Mean	Std. Deviation	N
Participating In Event	2.46	84	3898
Playing Sports Games	3.07	.93	3898
Doing Regular Exercises	2.56	95	3898
Eating Balanced Diets	3.09	.91	3898
Keeping Positive Attitude	3.08	.88	3898
Doing Meditation/Yoga	2.19	.95	3898
Making Own Decision	2.91	.90	3898
Expose To Morning Sunlight	2.74	.98	3898
Widening Friend Circle	3.25	.92	3898

Table 6.1.9.10B KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.710
Bartlett's Test of Sphericity	Approx. Chi-Square	2120.611
	df	36
	Sig.	.000

Test Result: KMO test shows data set is middling for applying factor analysis. Also, according to Bartlett's test our data set is approximately multivariate normal and acceptable for factor analysis.

Table 6.1.9.10C Communalities		
	Initial	*Extraction*
Participating In Event	1 000	.475
Playing Sports Games	1.000	.623
Doing Regular Exercises	1.000	.535
Eating Balanced Diets	1.000	.475
Keeping Positive Attitude	1.000	.472
Doing Meditation/Yoga	1 000	544
Making Own Decision	1.000	.339
Expose To Morning Sunlight	1.000	.304
Widening Friend Circle	1.000	470
Extraction Method Principal Component Analysis		

Table 6.1.9.10D Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	**Total**	**% of Variance**	***Cumulative %***	**Total**	**% of Variance**	***Cumulative %***	**Total**	**% of Variance**	***Cumulative %***
1	2.076	23.066	23.066	2.076	23.066	23.066	1.589	17 659	17 659
2	1.148	12.751	35.817	1.148	12.751	35.817	1 435	15 942	33 600
3	1.012	11 250	47.067	1.012	11.250	47 067	1 212	13 466	47 067
Extraction Method: Principal Component Analysis									

There are three factors with Eigen values larger than 1.0 and they account nearly 50% of the total variation.

Table 6.1.9.10E Rotated Component Matrix(a)			
	Component		
	1	**2**	**3**
Doing Meditation/Yoga	.736	-2 283E-02	3.463E-02
Doing Regular Exercises	.691	-1.606E-02	.238
Expose To Morning Sunlight	.518	.165	9.067E-02
Eating Balanced Diets	.463	.451	-.238
Keeping Positive Attitude	*.186*	*.661*	*-2.469E-02*
Widening Friend Circle	-.114	.637	.228
Making Own Decision	5.416E-02	.557	.158
Playing Sports Games	.177	3.004E-02	.769
Participating In Event	6 861E-02	.222	649
Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization.			
a Rotation converged in 6 iterations			

According to Questionnaire for Students there are 9 variables that give measure of effort made for Body and Mind Development in Students. Out of these, 8 variables constitute three which explains nearly 50% of total variation.

Three extracted factors are as follow:

1. Physical Health Improvement Activity
2. Personality relationship Activity
3. Participative team Activity

Physical Health Improvement Activity involves Doing Meditation\Yoga, Doing Regular Exercises and Expose to Morning Sunlight. These variables have heavy factor loading on Factor 1 i.e. Health Improvement Activity.

Personality Activity involves Keeping positive attitude, widening friend circle and making own decision. These variables have heavy factor loading on Factor 2. i.e. Personality Activity.

Participative team Activity involves playing Sports Games and Events.

6.1.10 Q-S-C/D : Interaction in Average Hours/Day With Parents

Table 6.1.10A Average Hour/Day Interacting With Mother and Father

	N	Missing	Min.	Max.	Mean	Median	Mode	Std. Deviation
With Mother	3841	166	0	12	3.00	3	2	1.5168
With Father	3794	213	0	12	2.27	2	2	1.1830

Adolescent interaction with mother and father during the day on any subject was inquired. The mean of 3.00 for mother and mean of 2.27 for father was determined with standard deviation 1.5168 and 1.1830 respectively. Interaction with mother was more with adolescents with around 3 hours per day.

Tables 6.1.10.1B t-test for Equality of Means : Interaction with father and Mother

	Mean	N	Std. Deviation
Average Hour/Day Interacting With Mother	3 0054	3771	I 5152
Average Hour/Day Interacting With Father	2.2635	3771	1.1828

	N	Correlation	p-value.
Average Hour/Day Interacting With Mother & Average Hour/Day Interacting With Father	3771	.645	000

	95% Confidence Interval of the Difference		t	p-value
	Lower	Upper		
Average Hour/Day Interacting With Mother - Average Hour/Day Interacting With Father	.7044	.7795	38.758	000

For Average Hours/Day Interaction between adolescents and their Father & Mother:

Ho: Average Hour/Day Interacting with Mother is equivalent to Average Hour/Day Interacting with Father.

H1: Average Hour/Day Interacting with Mother is not equivalent to Average Hour/Day Interacting with Father.

In other way:

Ho: Difference between Average Hour/Day Interacting with Mother and Average Hour/Day Interacting with Father is equivalent zero.

H1: Difference between Average Hour/Day Interacting with Mother and Average Hour/Day Interacting with Father is not equivalent zero.

Test Result:

Since, p-value is less than 0.05 (in fact very near to 0), there is strong evidence against null hypothesis Ho to reject it at 5% level of significance. Thus, there is significant difference between Average Hour/Day Interacting with Mother and Father.

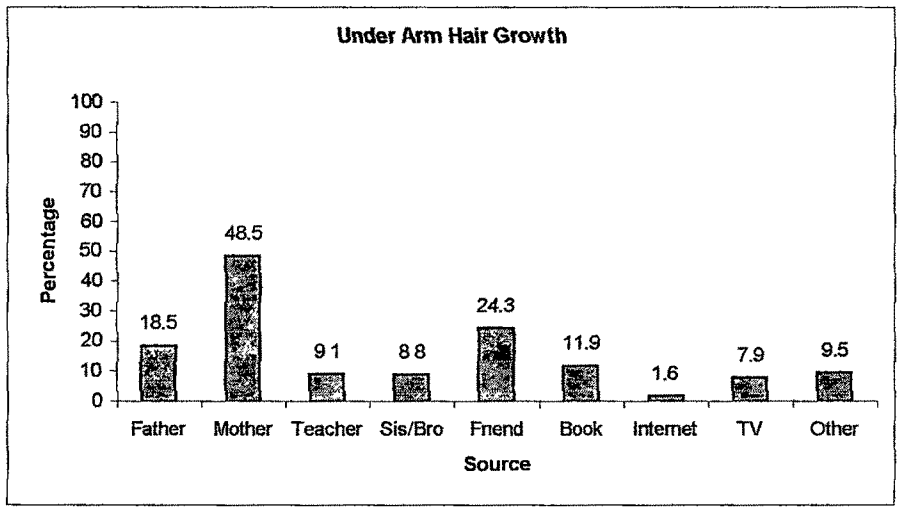
6.1.11 Q-S-E : Sources of information on reproductive healthcare

Respondents were asked about their sources of information on puberty changes. Adolescents were asked to specify, even if the change has not happened to them, but if they have already received the information from any sources. There could be more than one source also. Five physical changes were common for boys and girls. One change was exclusive for boys and two changes were exclusive for girls.

6.1.11.1 underarm hair growth

Adolescents responded about the sources of information with regards to underarm hair growth.

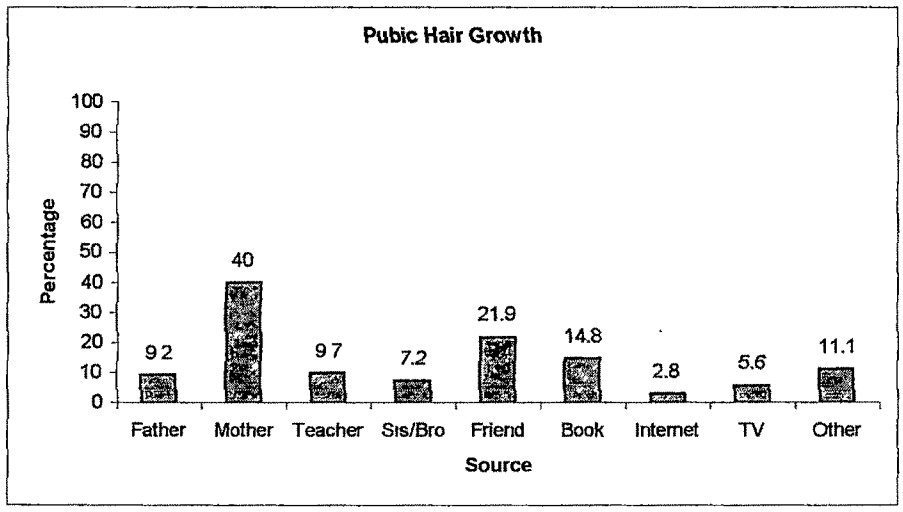
Chart 6.1.11.1 sources of information: underarm hair growth



Mother was the major source of information with 48.5 % adolescents received their knowledge through mother. The second major source was friends with 24.3 %.

6.1.11.2 Pubic hair growth

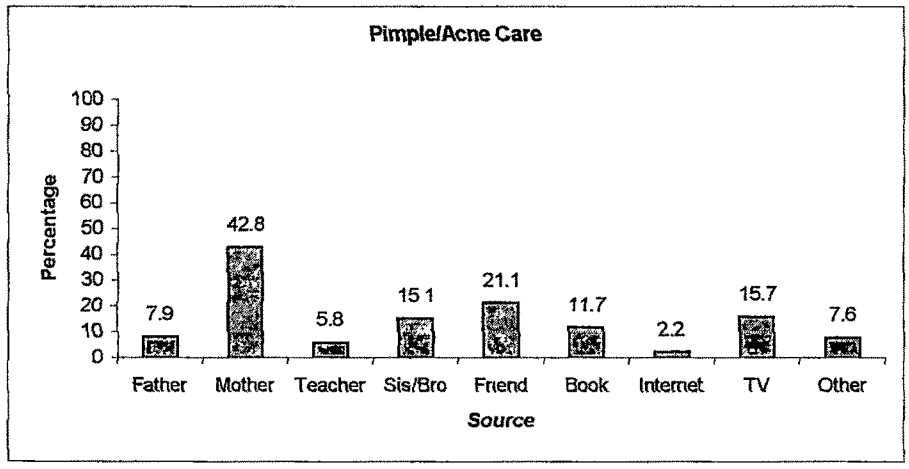
Chart 6.1.11.2 sources of information: Pubic hair growth



Mother was the major source of information with 40 % of adolescents received their knowledge through mother. Friend was the second source with 21.9 %.

6.1.11.3 Pimple and acne care

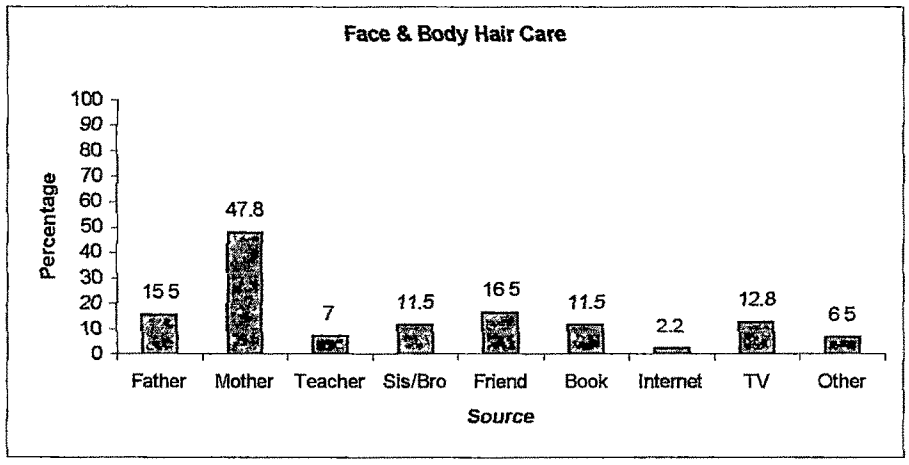
Chart 6.1.11.3 sources of information: Pimple and acne care



The knowledge on pimple and acne was gathered from mainly from mother, friend, and TV. But mother remain far ahead at 42.8 %.

6.1.11.4 Face and body hair care

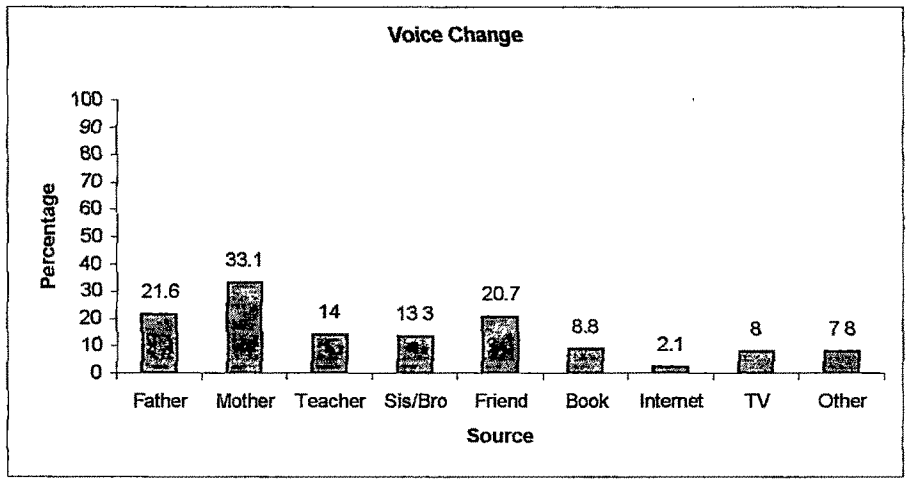
Chart 6.1.11.4 sources of information: Face and body hair care



Mother was major source of information at 47.8 % for body and face hair care information.

6.1.11.5 Voice change

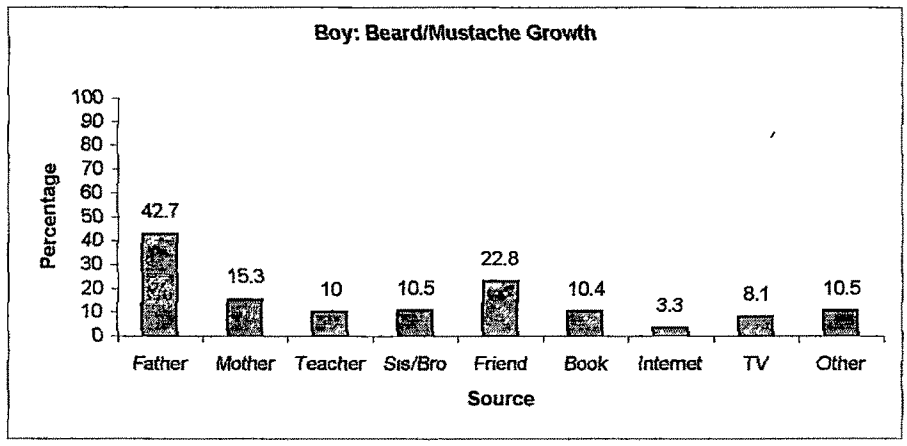
Chart 6.1.11.5 sources of information: Voice change



Mother (33.1 %), father (21.6 %) and friend (20.7%) were the major sources of information with respect to voice change.

6.1.11.6 Beard and mustache growth in boys

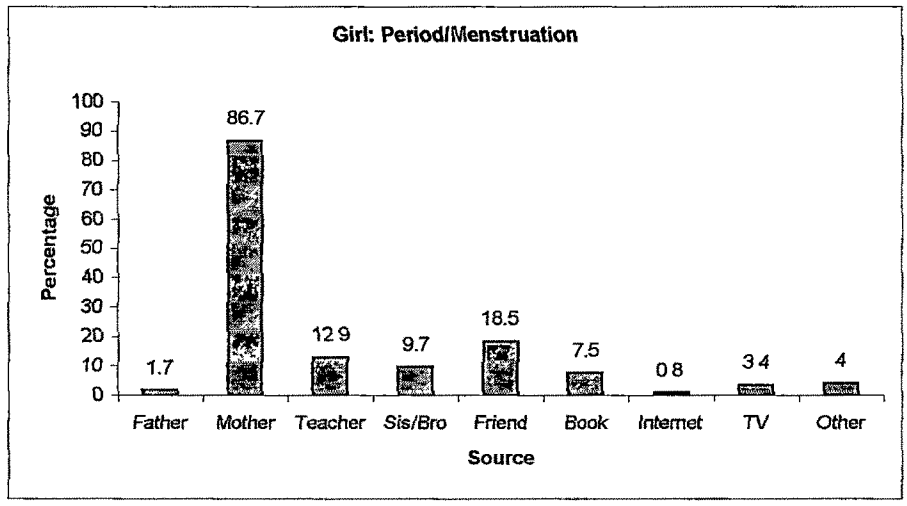
Chart 6.1.11.6 sources of information: Beard/mustache growth in boys



Father was the major source of information at 42.7 % with friend at position two with 22.8 % with respect to beard and mustache for boys.

6.1.11.7 menstruation in girls

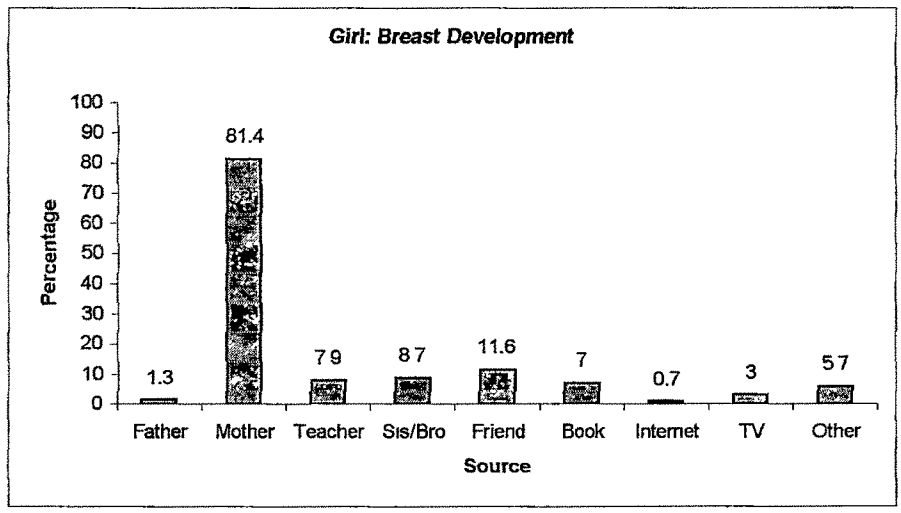
Chart 6.1.11.7 sources of information: menstruation in girls



The mother is the major source of information with 86.7 % of girls responded that they received information on menstruation from mothers.

6.1.11.8 Breast development in girls

Chart 6.1.11.8 sources of information: Breast development in girls



Mother is the best source of information on breast development to girls.

6.1.11.9 Ranking of existing sources of information

The weightage average considering exclusive changes of girls and boys were calculated as:

Weighted Average of % = (A+B+C+D+E+F+G/2+H/2)/7

Table 6.1.11.9 Ranking of existing sources of information		
Existing Sources	Weighted Average of %	Rank
Mother	44.51	1
Friend	20.34	2
Father	16.70	3
Book	10.91	4
Sister/Brother	10.80	5
Teacher	9.43	6
TV	8.76	7
Others	8.26	8
Internet	2.14	9

Mother, friends, father and books are the best existing sources of information with 44.51%, 20.34 %, 16.70 % and 10.91 % respectively in that order.

Table-6.1.11.9B existing sources of information on physical changes

Physical Changes		Father	Mother	Teacher	Sis/Bro	Friend	Book	Internet	TV	Other	Valid Cases	Missing	Grand Total
Under Arm Hair Growth	Count	715	1869	350	339	937	459	60	304	365	3857	150	4007
	%	18.5	48.5	9.1	8.8	24 3	11 9	1.6	7.9	9.5			
Pubic Hair Growth	Count	317	1380	335	248	754	510	98	193	384	3447	560	4007
	%	9.2	40	9.7	7 2	21.9	14.8	2.8	5.6	11.1			
Pimple/Acne Care	Count	279	1508	204	531	745	412	76	552	269	3525	482	4007
	%	7.9	42.8	5.8	15.1	21 1	11.7	2.2	15.7	7.6			
Face & Body Hair Care	Count	540	1672	246	403	575	401	78	449	228	3495	512	4007
	%	15 5	47.8	7	11.5	16.5	11.5	2 2	12.8	6.5			
Voice Change	Count	702	1075	454	433	674	285	67	259	254	3249	758	4007
	%	21.6	33.1	14	13.3	20.7	8.8	2 1	8	7.8			
Boy: Beard/Mustache Growth	Count	733	263	172	180	391	179	57	140	180	1718	532	2250
	%	42 7	15.3	10	10 5	22.8	10 4	3.3	8.1	10.5			
Girl: Period/Menstruation	Count	27	1355	202	151	289	117	13	53	63	1563	194	1757
	%	1.7	86.7	12 9	9.7	18.5	7.5	0 8	3 4	4			
Girl: Breast Development	Count	19	1179	115	126	168	102	10	44	83	1449	308	1757
	%	1.3	81.4	7.9	8.7	11.6	7	0 7	3	5.7			

Adolescents responded on their existing source of information on different physical changes as shown above. Mother plays a very crucial relationship with adolescents. Internet source is not yet popular with them. Father, friends, sister and brothers are near relation from whom they gether information on their physical development.

6.1.12.Q-S-N : Preferred sources for further information

Respondents were asked to specify the most preferred three sources for further additional information on reproductive healthcare, emotions, stress, relationship, body and mind development.

Table 6.1.12 Preferred sources of further information

Preferred Sources	Count	Percentage	Rank
Mother	2070	57.2	1
Friend	1719	47.5	2
Book	1187	32.8	3
Doctor	1116	30.8	4
Teacher	979	27	5
Father	941	26	6
TV	687	19	7
Internet	513	14.2	8
Magazine	396	10.9	9
Cousin	300	8.3	10
Advertisement	165	4.6	11
Aunt	121	3.3	12
Counselor	63	1.7	13
Uncle	50	1.4	14
Total	3622	100	
Missing	385		
Grand Total	4007		

Remark: In existing source Sister/Brother and Others are considered as sources, which are not covered in preferred sources.

Mother and friend are the best-preferred sources for future source of information on reproductive healthcare, followed by book, doctor, and father in that order. School counselor is not yet popular with adolescents.

Assuming Others=Doctor+Magazine+Advertisement+Aunt+Counselor+Uncle
Sister/Brother=Cousin

6.1.12.1.Existing and future preferred sources of information

Table 6.1.12.1A Ranking Comparison for sources of information		
Sources	Existing Source Rank	Preferred Source Rank
Mother	1	1
Friend	2	3
Father	3	6
Book	4	4
Sister/Brother	5	9
Teacher	6	5
TV	7	7
Others	8	2
Internet	9	8

Mother relationship comes out as a winner for existing as well as future sources of information. The mother has to be educated enough as well as comfortable to discuss reproductive healthcare issues with their adolescent sons and daughters.

Table 6.1.12.1B Correlations (Spearman's rho)

		Rank of Existing Sources	Rank of Preferred Sources
Rank of Existing Sources	**Correlation Coefficient**	1.000	**.467**
	Sig. (2-tailed)	.	.205
	N	9	9
Rank of Preferred Sources	**Correlation Coefficient**	**.467**	1 000
	Sig. (2-tailed)	.205	.
	N	9	9

As p-value is greater than 0.05, there is no significant correlation between ranking of existing sources of knowledge about physical changes and that of preferred sources, which indicates current sources of information about physical changes are not in accordance with the preferred sources for same.

6.1.13.Q-S-F : The current knowledge of teenage products

Teenage products, whose first time use expected only during adolescence period. The current knowledge of the teenage products was measured on 3 points ordinal scale. Even if adolescents have not started the use of specific teenage product, the knowledge could have been gathered in advance. The response was asked as very less knowledge or average knowledge or complete knowledge.

6.1.13.1 Current level of knowledge about shaving blade/razor

Table 6.1.13.1A Current level of knowledge about Blade/Razor (Shaving)

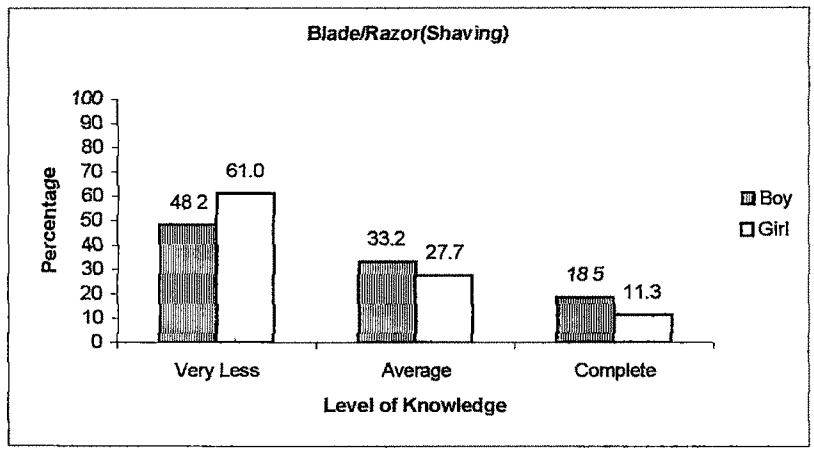
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Less	2059	51 4	53.7	53 7
	Average	1182	29 5	30 8	84 6
	Complete	592	14.8	15.4	100.0
	Total	3833	95.7	100.0	
Missing	System	174	4.3		
Total		4007	100.0		

Only 15.4 % of adolescents were having complete knowledge of shaving blade and razors. While 53.7 % adolescents responded very less knowledge on shaving razors and blade. It suggests that awareness is very less and scope of education on this very important product which they are all going to use it for their personal hygiene care.

61 % of girls were having very less knowledge compare to 48.2 % of boys about shaving blade and razor. Also 18.5 % of boys were having complete knowledge compare to 11.3 % of girls about shaving blades and razors. This suggests that boys were better informed on shaving products compared to girls.

Table 6.1.13.1B knowledge about Blade/Razor (Shaving) boys and girls				
Teenage Product			Gender	
			Boy	Girl
Blade/Razor (Shaving)	Very Less	Count	1053	1006
		%	48.2	61.0
	Average	Count	726	456
		%	33.2	27.7
	Complete	Count	405	187
		%	18.5	11.3
Total	Count		2184	1649
	%		100.0	100 0

Chart 6.1.13.1A knowledge about Blade/Razor (Shaving) boys and girls



6.1.13.2 Current level of knowledge about Pimple Cream

15 % of respondents were having complete knowledge of pimple cream, while 51.9 % responded that they have very less knowledge. Pimple is unavoidable during adolescence age. The adolescents need correct information on their skincare and treatment. Even one pimple on the face can make them tense. A systematic medical education is desirable.

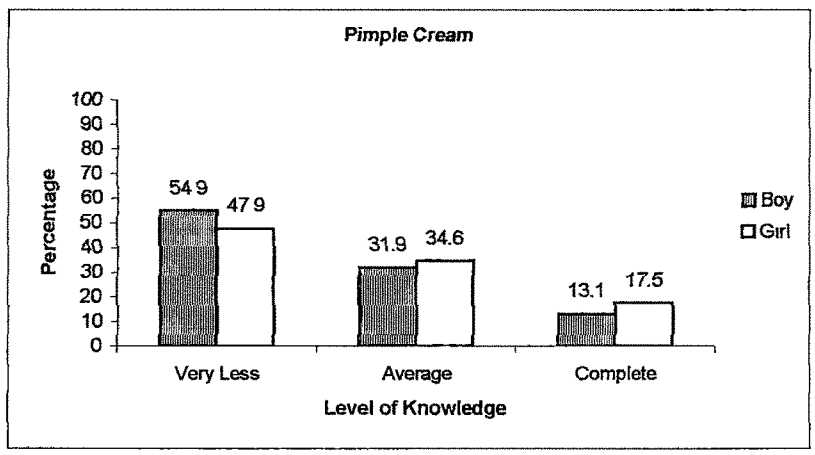
Table 6.1.13.2A Current level of knowledge about Pimple Cream

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Less	1983	49.5	51 9	51.9
	Average	1265	31.6	33 1	85.0
	Complete	575	14.3	15.0	100.0
	Total	3823	95.4	100.0	
Missing	System	184	4.6		
Total		4007	100.0		

Table 6.1.13.2B knowledge about Pimple Cream Boys and girls

Teenage Product			Boy	Girl
Pimple Cream	Very Less	Count	1188	795
		%	54.9	47.9
	Average	Count	691	574
		%	31.9	34.6
	Complete	Count	284	291
		%	13.1	17.5
Total	Count		2163	1660
	%		100.0	100.0

Chart 6.1.13.2A knowledge about Pimple Cream Boys and girls



47.9 % of girls were having very less knowledge compare to 54.9 % of boys about pimple cream. Also 13.1 % of boys were having complete knowledge compared to 17.5 % of girls about pimple cream. It suggests that girls were better informed on pimple cream compared to boys.

6.1.13.3 Current level of knowledge about Height Booster

Table 6.1.13.3A Current level of knowledge about Height Booster

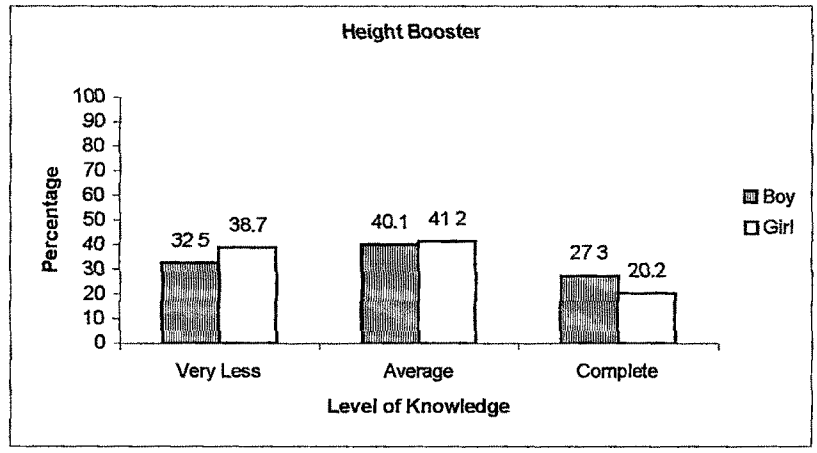
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Less	1331	33.2	35.2	35.2
	Average	1536	38 3	40.6	75 7
	Complete	918	22.9	24.3	100.0
	Total	3785	94.5	100.0	
Missing	System	222	5.5		
Total		4007	100 0		

24.3 % of adolescents had complete knowledge on height booster. Adequate height is of great concern during puberty. The growth spurt takes place a t different time with individual, which exerts psychological pressure on them due to unequal growth. The activation of pituitary gland to produce growth hormones may be explained.

Table 6.1.13.3B knowledge about Height Booster boys vs. girls

Teenage Product			Boy	Girl
Height Booster	Very Less	Count	704	627
		%	32.5	38.7
	Average	Count	868	668
		%	40.1	41.2
	Complete	Count	591	327
		%	27.3	20.2
Total	Count		2163	1622

Chart 6.1.13.A knowledge about Height Booster boys vs. girls



38.7 % of girls were having very less knowledge compared to 32.5 % of boys about height booster. Also 27.3 % of boys were having complete knowledge compare to 20.2 % of girls about height booster. This suggests that boys were better informed on height booster compared to girls.

6.1.13.4 Current level of knowledge about Trimming Tiny Scissors

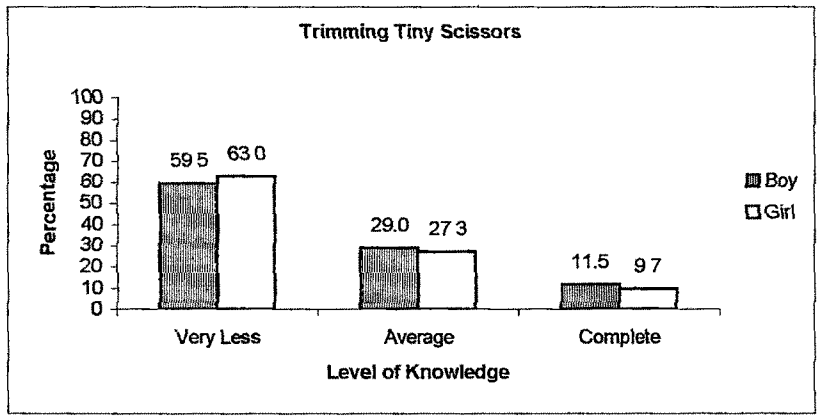
Table 6.1.13.4A Current level of knowledge about Trimming Tiny Scissors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very Less	2268	56 6	61 0	61.0
	Average	1051	26.2	28 3	89.3
	Complete	399	10 0	10.7	100.0
	Total	3718	92 8	100 0	
Missing	System	289	7 2		
Total		4007	100.0		

Only 10.7 % of respondents were having complete knowledge on trimming scissors mainly required for their pubic hair. A proper knowledge by parents and teachers is necessary during this puberty to initially trim their pubic and underarm hair for hygiene purpose

Table 6.1.13.4B knowledge about Trimming Tiny Scissors boys Vs. girls				
Teenage Product			**Boy**	**Girl**
Trimming Tiny Scissors	**Very Less**	**Count**	1269	999
		%	59.5	63.0
	Average	**Count**	619	432
		%	29.0	27.3
	Complete	**Count**	245	154
		%	11.5	9.7
Total	**Count**		2133	1585
	%		100.0	100

Chart 6.1.13.4A knowledge about Trimming Tiny Scissors boys Vs. girls



63 % of girls were having very less knowledge compare to 59.5 % of boys about Trimming Tiny Scissors. Also 11.5 % of boys were having complete knowledge compare to 9,7 % of girls about Trimming Tiny Scissors. This suggests that boys were better informed on Trimming Tiny Scissors compared to girls.

6.1.13.5 Current level of knowledge about Brassiere/Bra

38.8 % of respondent girls had complete knowledge on brassiere. While 32.1 % of respondent girls felt that they had very less knowledge. If one takes cumulative percent of 61.2 % girls do need more knowledge on brassiere.

Table 6.1.13.5 Current level of knowledge about Brassiere/Bra			
		Frequency	Valid Percent
Valid	Very Less	550	32.1
	Average	499	29.1
	Complete	664	38 8
	Total	1713	100.0
Missing	System	44	
Total girls		1757	

6.1.13.6 Current level of knowledge about Washable Pad

Table 6.1.13.6 Current level of knowledge about Washable Pad			
		Frequency	Valid Percent
Valid	Very Less	592	34.9
	Average	417	24.6
	Complete	687	40.5
	Total	1696	100.0
Missing	System	61	
Total girls		1757	

40.5 % of respondent girls had complete knowledge on washable menstrual pads, while 34.9 % had very less knowledge of this important item.

6.1.13.7 Current level of knowledge about Sanitary Napkin

Table 6.1.13.7 Current level of knowledge about Sanitary Napkin			
		Frequency	Valid Percent
Valid	Very Less	477	28.2
	Average	461	27.2
	Complete	756	44.6
	Total	1694	100.0
Missing	System	63	
Total girls		1757	

The knowledge of sanitary napkin with respondent girls was comparatively good. 44.6 % responded for complete knowledge.

6.1.13.8. Standard wise Teenage Product Awareness

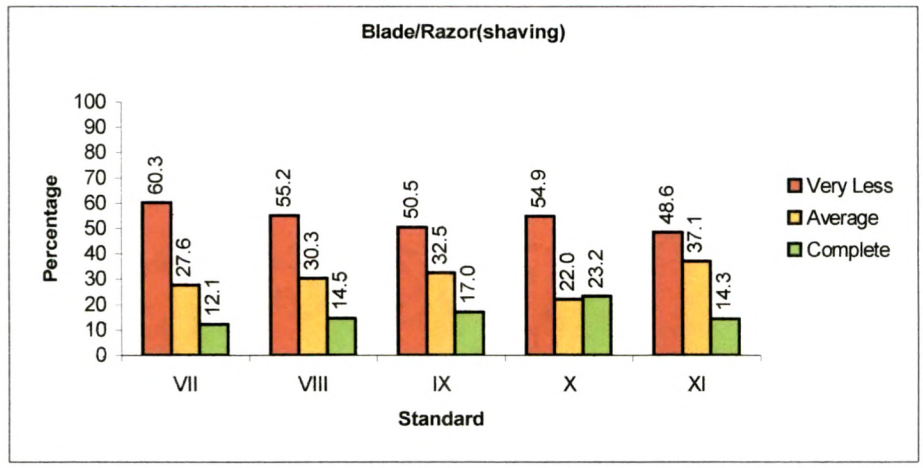
Standard wise teenage products awareness was observed to see the significant increase in the awareness level for common teenage products as adolescents move to higher standards.

6.1.13.8.1 Standard wise Shaving razor/blade Awareness

Table 6.1.13.8.1Standard wise Shaving razor/blade Awareness

Common Teenage Products			VII	VIII	IX	X	XI
Blade/Razor (Shaving)	Very Less	Count	330	779	888	45	17
		%	60.3	55.2	50.5	54.9	48.6
	Average	Count	151	428	572	18	13
		%	27.6	30.3	32.5	22.0	37.1
	Complete	Count	66	204	298	19	5
		%	12.1	14.5	17.0	23.2	14.3
Total	Count		547	1411	1758	82	35
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.13.8.1Standard wise Shaving razor/blade Awareness

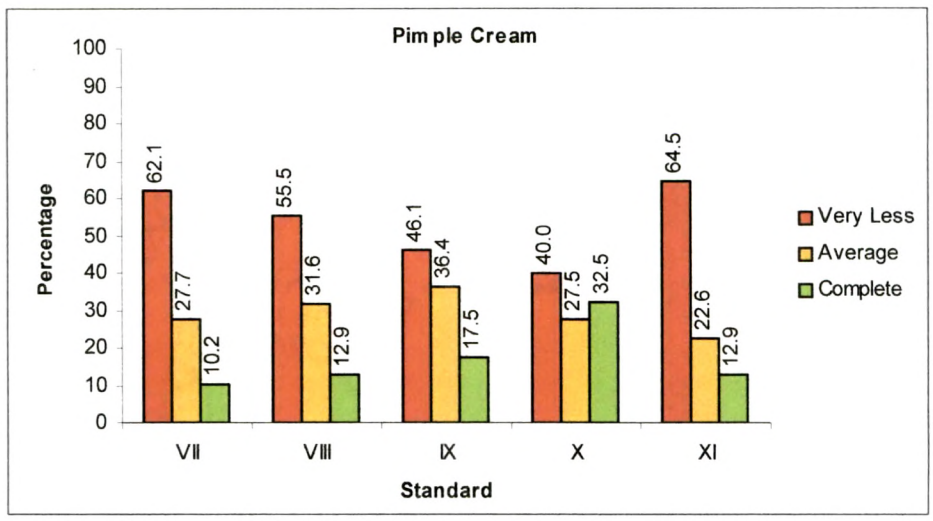


The awareness level was very less on shaving blade and razors for pubic hair for 60.3 % respondents of standard VII. Even in standard X also it was not improved much.

6.1.13.8.2 Standard wise pimple cream Awareness

Table 6.1.13.8.2 Standard wise pimple cream Awareness							
Common Teenage Products			VII	VIII	IX	X	XI
Pimple Cream	Very Less	Count	341	781	809	32	20
		%	62.1	55.5	46.1	40.0	64.5
	Average	Count	152	445	639	22	7
		%	27.7	31.6	36.4	27.5	22.6
	Complete	Count	56	182	307	26	4
		%	10.2	12.9	17.5	32.5	12.9
Total	Count		549	1408	1755	80	31
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.13.8.2 Standard wise pimple cream Awareness

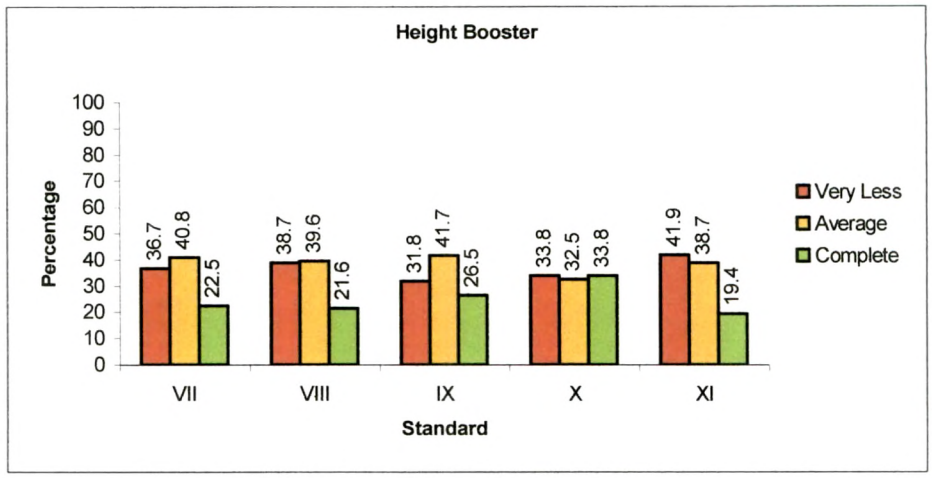


Pimple cream awareness improved from very less awareness at 62.1 % in standard VII. And also from complete knowledge of 10.2 % in standard VII to 32.5 % in standard X. XI standard students were not very serious in filling up the questionnaire, as the researcher himself had administered the questionnaire to them.

6.1.13.8.3.Standard wise height booster Awareness

Table 6.1.13.8.3.Standard wise height booster Awareness							
Common Teenage Products			VII	VIII	IX	X	XI
Height Booster	Very Less	Count	199	539	553	27	13
		%	36.7	38.7	31.8	33.8	41.9
	Average	Count	221	551	726	26	12
		%	40.8	39.6	41.7	32.5	38.7
	Complete	Count	122	301	462	27	6
		%	22.5	21.6	26.5	33.8	19.4
Total	Count		542	1391	1741	80	31
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.13.8.3.Standard wise height booster Awareness



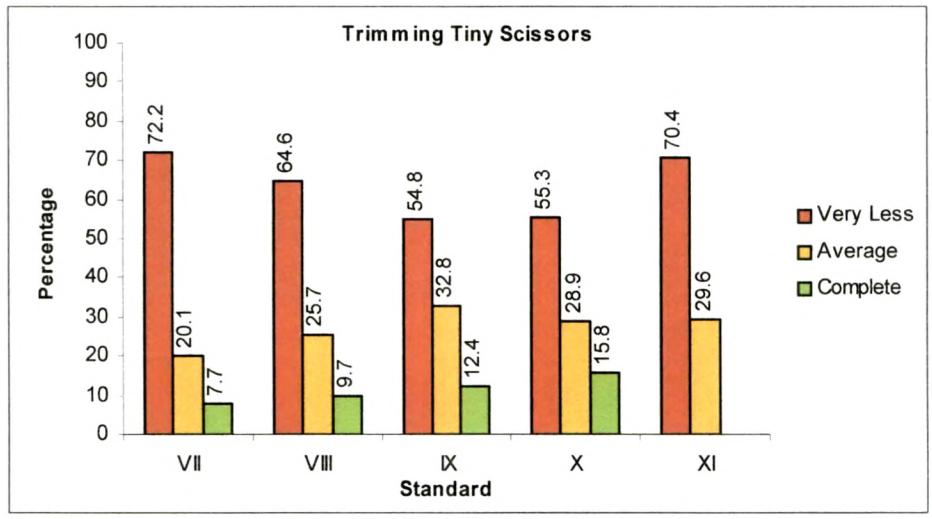
The change in height booster awareness was not very significant as standard increased.

6.1.13.8.4.Standard wise Trimming tiny scissors Awareness

The knowledge of tiny scissors for trimming hair improved with increase in standard from 7.7 % complete knowledge in standard VII to 15.8 %in standard X. But still it remained very less knowledge for 55.3 % in standard X.

Table 6.1.13.8.4.Standard wise Trimming tiny scissors Awareness							
Common Teenage Products			VII	VIII	IX	X	XI
Trimming Tiny Scissors	Very Less	Count	385	884	938	42	19
		%	72.2	64.6	54.8	55.3	70.4
	Average	Count	107	352	562	22	8
		%	20.1	25.7	32.8	28.9	29.6
	Complete	Count	41	133	213	12	
		%	7.7	9.7	12.4	15.8	
Total	Count		533	1369	1713	76	27
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.13.8.4.Standard wise Trimming tiny scissors Awareness



6.1.14.Q-S-G/H : Sharing relationships for problems and interests

Adolescents were asked to specify the sharing relationship for their problems as well as for their interests separately. More than one relationship was allowed.

Sharing relationship was best with mother for their problems. Also friends were almost equal to share their problems at number two, followed by father, sister and brother in that order.

Sharing relationship was best with friend for their interests. Mother was ranked second and father was ranked at third for interest sharing.

Comparison of sharing Personal Problems and Interests

Table 6.1.14A.Sharing relationships for problems and interests

Persons	To Share Personal Problems			To Share Personal Interests		
	Count	Percentage	Rank	Count	Percentage	Rank
Mother	2763	70.9	1	2075	54.6	2
Friend	2755	70.7	2	2800	73.7	1
Father	1331	34.1	3	1576	41.5	3
Sister	1232	31.6	4	1216	32	4
Brother	837	21.5	5	1151	30.3	5
Cousin	712	18.3	6	933	24.6	6
Grand Parents	424	10.9	7	405	10.7	7
Teacher	333	8.5	8	367	9.7	8
Other	278	7.1	9	337	8.9	9
Aunt	211	5.4	10	206	5.4	11
School Counselor	127	3.3	11	153	4	12
Uncle	120	3.1	12	224	5.9	10
Total	3898			3798		
Missing	109			209		
Grand Total	4007			4007		

School counselor is still not so popular with adolescent for sharing relationship.

Table 6.1.14B Correlations (Spearman's rho)

		Rank of persons to share problems	Rank of Persons to share interest
Rank of persons to share problems	Correlation Coefficient	1.000	.972(**)
	Sig. (2-tailed)	.	.000
	N	12	12
Rank of Persons to share interest	Correlation Coefficient	.972(**)	1 000
	Sig. (2-tailed)	.000	
	N	12	12

** Correlation is significant at the .01 level (2-tailed).

As p-value is less than 0.05, there is significant correlation between ranking of persons to share problems and ranking of person to share interests. Moreover, since p-value is very close to 0, shows strong correlation between ranking of persons to share problem and that of person to share interests.

6.1.15.Q-S-I : Competence in extra curricular activities

The response on adolescents major extra curricular activities was requested in terms of their level of competence on 3 points ordinal scale. The response helped to know their self-perception on few extra curricular activities.

6.1.15.1 Level of competence in outdoor sports activities.

Table 6.1.15.1 Level of competence in Sports-Outdoor activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	1180	29.4	30.7	30.7
	Average	1543	38.5	40.2	70.9
	Excellent	1119	27.9	29 1	100.0
	Total	3842	95.9	100 0	
Missing	System	165	4.1		
Total		4007	100.0		

29.1 % of adolescents considered themselves as excellent in outdoor sports activities. While 30.7 % considered themselves as not good at all in outdoor sports. A good scope exists to increase 70.9 % adolescents in their competence in playing outdoor sports.

6.1.15.2 Level of competence in Indoor Sports activities.

Table 6.1.15.2 Level of competence in Indoor Sports activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	1046	26.1	29 3	29.3
	Average	1657	41.4	46.5	75.8
	Excellent	864	21.6	24.2	100 0
	Total	3567	89.0	100.0	
Missing	System	440	11 0		
Total		4007	100.0		

24.2 % of adolescents believed that they were excellent in indoor sports activities. Balance 75.8 % can increase their level of competence in indoor sports.

6.1.15.3 Level of competence in Dance/Music

Table 6.1.15.3 Level of competence in Dance/Music

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	1146	28.6	35.6	35 6
	Average	1129	28.2	35 0	70.6
	Excellent	948	23 7	29.4	100.0
	Total	3223	80 4	100.0	
Missing	System	784	19.6		
Total		4007	100.0		

29.4 % of respondents felt that they were excellent in dance and music activities. 70.6 % of respondents need encouragement to pursue such activities.

6.1.15.4 Level of competence in Reading Novels

Table 6.1.15.4 Level of competence in Reading Novels

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	1040	26.0	30.0	30.0
	Average	1556	38.8	44 9	74 9
	Excellent	869	21 7	25.1	100.0
	Total	3465	86 5	100.0	
Missing	System	542	13.5		
Total		4007	100.0		

25.1 % of respondents felt that they were excellent in reading novels and other literatures. The reading habit is cultivated in them. But other 74.9 % of respondents still have scope of improvement in their reading habits.

6.1.15.5 Level of competence in Internet surfing

38 % of respondents are used to Internet and reported excellence in gaining knowledge. The use of Internet is gradually increasing among adolescents.

Table 6.1.15.5 Level of competence in Internet surfing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Low	689	17.2	18 6	18.6
	Average	1615	40.3	43.5	62.0
	Excellent	1410	35.2	38 0	100.0
	Total	3714	92 7	100.0	
Missing	System	293	7.3		
Total		4007	100.0		

6.1.15.6 Average hours spent on extra curricular activities

Table 6.1.15.6 Average hours spent on extra curricular activities							
Average Hours/Day Spent on Activities	% not participating	N	Missing	Mean	Median	Mode	Std. Deviation
for Sports-Outdoor	12	3523	484	1.376	1	1	0.7332
for Sports-Indoor	46	2130	1877	1.19	1	1	0.6974
for Dance/Music	60	1595	2412	1.24	1	1	0 8208
for Reading Novels	51	1966	2041	1.33	1	1	0.8568
for TV/Internet	39	2421	1586	1.74	2	1	0 9445

Around 88 % of adolescents are participating in outdoor sports activities with median one hour per day. TV and Internet is the only activities where the median is two hours per day. 51 5 are not reading novels or any other literature. 60 % do not participate in dance and music activities. There is a good scope to motivate adolescents for increased participation in extra curricular activities.

6.1.16.Q-S-J : Factors That Helps To Increase Height

Respondents were asked to specify three things/activities by which the height of an individual may increase other than hereditary. Options were not given but they were asked to write in

three simple words only. The responses were tabulated to find different activities and things for height increase, as perceived by the adolescents and the ranking obtained subsequently.

Table 6.1.16 Factors That Helps To Increase Height

Factors that Helps to Increase Height	Count	Percentage	Rank
Cycling	1705	57.2	1
Exercise	1584	53.1	2
Pull-Ups	1082	36.3	3
Diet	481	16.1	4
Jumping	338	11.3	5
Medicine	206	6.9	6
Running	184	6.2	7
Hanging	154	5.2	8
Basket Ball	143	4.8	9
Other	34	1.1	10
Skipping	29	1	11
Swimming	11	0.4	12
Total	2982		
Missing	1025		
Grand Total	4007		

Cycling (57.2 %), followed by Exercise (53.1 %), Pull ups (36.3 %), Diet (16.1 %) and Jumping (11.3 %) were the main responses to increase the height of an individual in that order.

6.1.17. Q-S-K : First notice of Physical changes

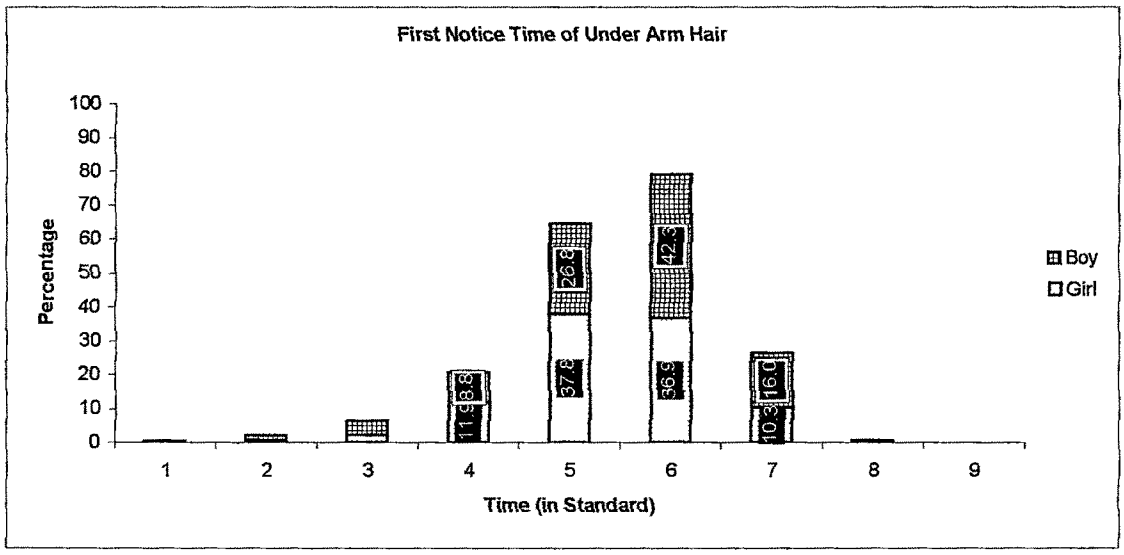
Total eleven changes were inquired in the student's questionnaire. Six physical changes were common for boys as well as girls. Three were exclusively for girls and two were exclusively for boys. The respondents were asked to mention the standard in which they first noticed the physical change. The option was given, if they have not yet noticed. The analysis of data used to establish the age of specific pubertal changes happening with adolescents. The graphical representation shows the comparison between boys and girls standard wise on first notice of physical changes.

6.1.17.1.First Notice Time Of Under Arm Hair

Table 6.1.17.1A First Notice Time Of Under Arm Hair

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I	1	.0	0	0
	II	4	1	.1	.2
	III	6	.1	.2	.4
	IV	26	.6	1.0	1.4
	V	87	2.2	3.2	4.6
	VI	276	6.9	10.2	14 8
	VII	864	21.6	32.0	46.8
	VIII	1071	26 7	39.7	86.4
	IX	358	8.9	13 3	99.7
	X	7	.2	.3	100.0
	XI	1	.0	.0	100 0
	Total	2701	67.4	100 0	
Not yet noticed		1031	25 8		
Missing	System	275	6.8		
Total		4007	100 0		

Chart 6.1.17.1A First Notice Time Of Under Arm Hair



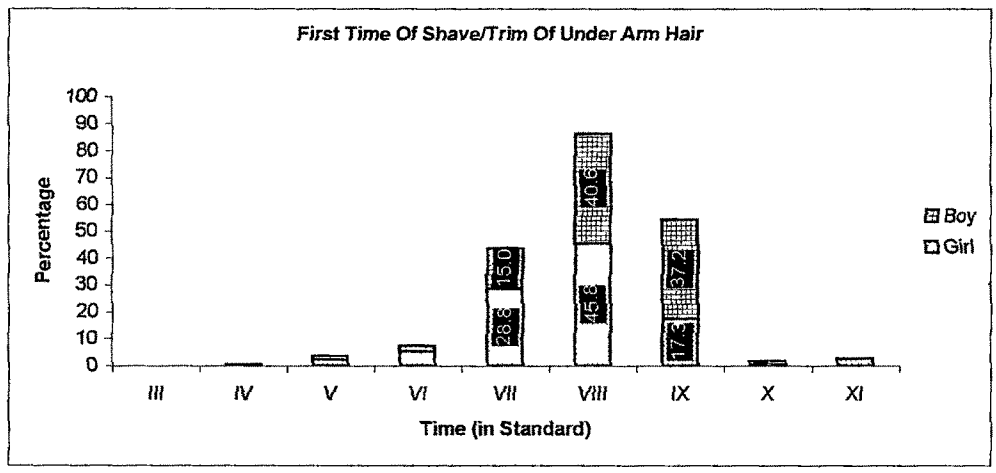
67.4 % of adolescents have noticed the underarm hair. The standard wise distribution shows that cumulative percentage of 14.8 noticed the underarm hair by standard VI. This suggests that even in standard VI awareness can be generated. Out of total sample, 1031 nos , 25.8 % adolescents responded that they have not yet noticed the under arm hair.

Table 6.1.17.1B First Time Shaving / Trimming of Under Arm Hair

		Frequency	Valid Percent
Valid	IV	1	2
	V	10	1.9
	VI	22	4.1
	VII	126	23 5
	VIII	235	43.8
	IX	134	25 0
	X	4	7
	XI	5	9
	Total shaving	537	100 0
Total under-arm hair		2701	

Around 19.9 % mentioned that they have started shaving of the underarm hair out of 2701 that have noticed the underarm hair. The majority of 537 who have started shaving, in standard VII (23.5 %), standard VIII (43.8 %) and standard IX (25.0 %).

Chart 6.1.17.1B First Time Shaving / Trimming of Under Arm Hair

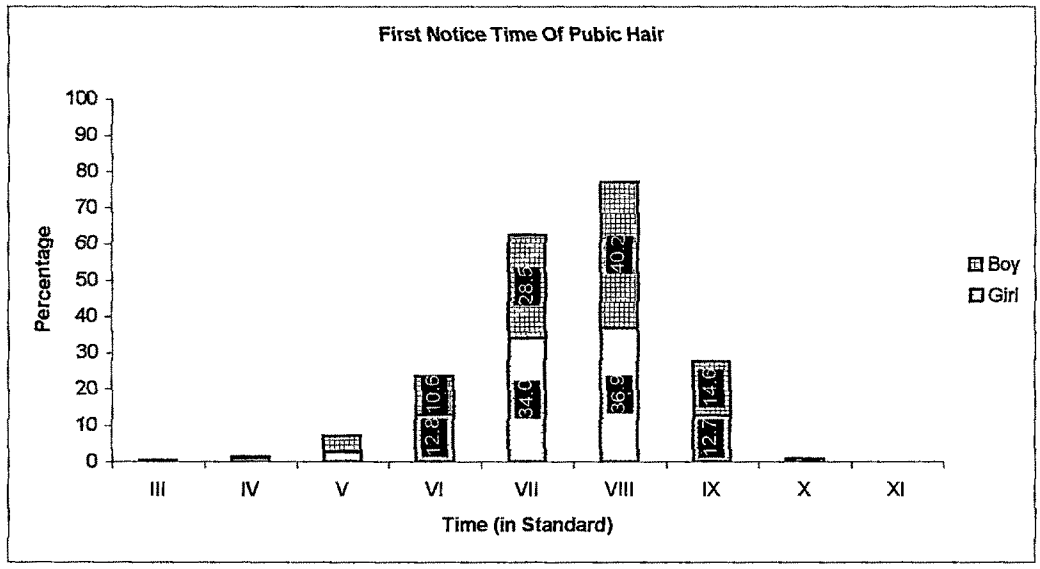


6.1.17.2.First Notice Time Of Pubic Hair

Table 6.1.17.2A First Notice Time of Pubic Hair

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I	1	.0	0	.0
	II	1	.0	0	.1
	III	4	1	2	.3
	IV	16	.4	.7	.9
	V	84	2 1	3.6	4.5
	VI	273	6.8	11.5	16.0
	VII	732	18.3	31.0	47.0
	VIII	916	22 9	38.7	85 7
	IX	326	8 1	13 8	99 5
	X	11	.3	.5	100.0
	Total	2364	59.0	100.0	
Not yet noticed		1276	31.8		
Missing	System	367	9.2		
Total		4007	100.0		

Chart 6.1.17.2A First Notice Time of Pubic Hair

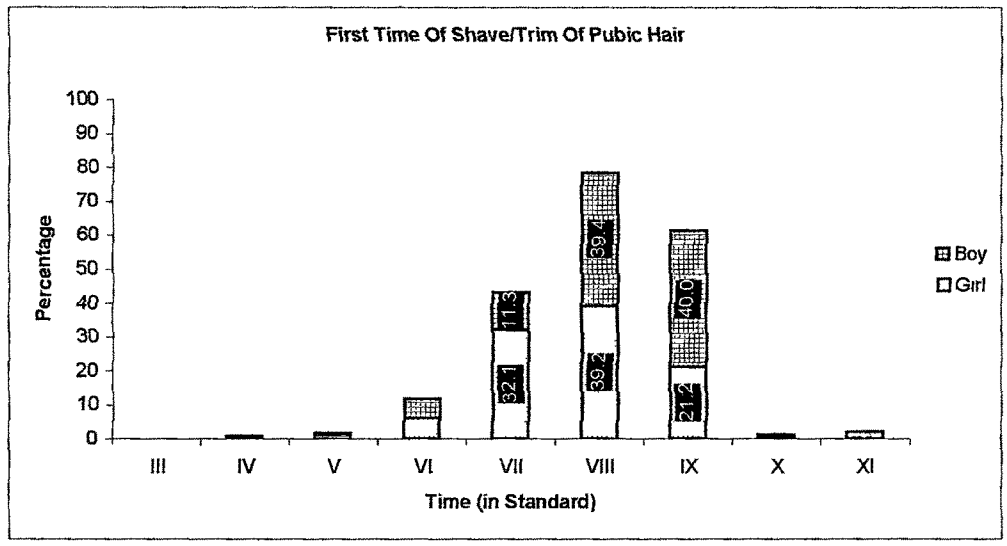


31.8 % of respondents have not yet noticed the pubic hair. Cumulative 16 % of respondents had noticed the pubic hair by standard VI.

Table 6.1.17.2B First Time Of Shave/Trim Of Pubic Hair

		Frequency	Valid Percent
Valid	IV	1	.3
	V	3	.8
	VI	22	5.9
	VII	86	23.1
	VIII	146	39.2
	IX	109	29.3
	X	2	.5
	XI	3	.8
	Total shaving	372	100.0
Total with pubic hair		2364	

Chart 6.1.17.2B First Time Of Shave/Trim Of Pubic Hair



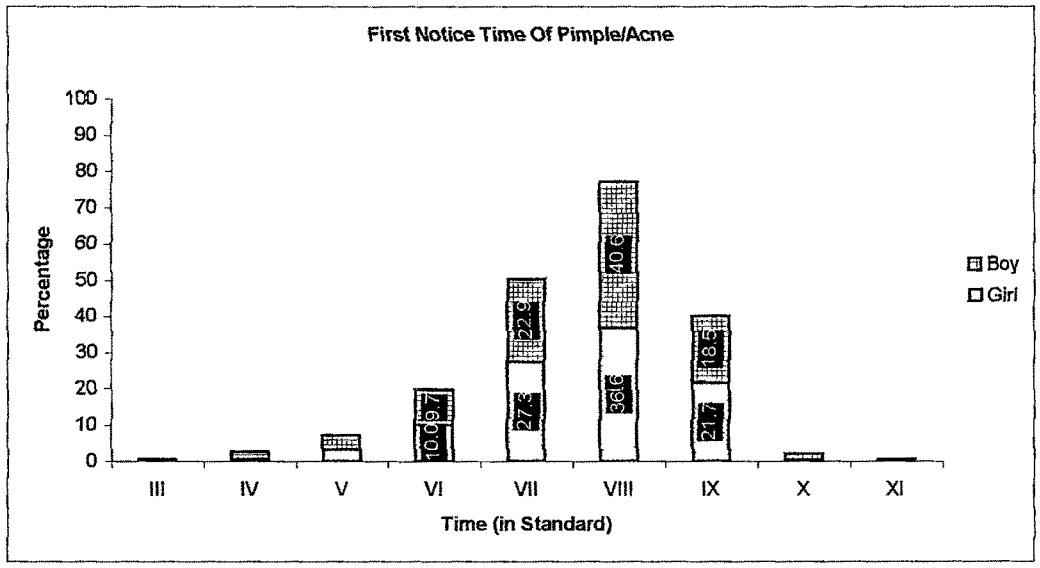
15.7 % of adolescents who have noticed pubic hairs and started shaving them. Cumulative 7 % respondents started shaving by standard VI, while another 23.1 % had started shaving by standard VII. The awareness may be generated in the standard VI or VII.

6.1.17.3.First Notice Time Of Pimple/Acne

Table 6.1.17.3A First Notice Time Of Pimple/Acne

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	II	1	0	1	.1
	III	3	.1	2	.3
	IV	19	5	1 4	1 7
	V	50	1.2	3 6	5 2
	VI	137	3 4	9 8	15.1
	VII	348	8.7	25.0	40.1
	VIII	538	13 4	38 6	78.7
	IX	279	7.0	20.0	98 8
	X	14	.3	1 0	99 8
	XI	3	1	2	100.0
	Total	1392	34 7	100.0	
Not yet noticed		2021	50.4		
Missing	System	594	14.9		
Total		4007	100 0		

Chart 6.1.17.3A First Notice Time Of Pimple/Acne

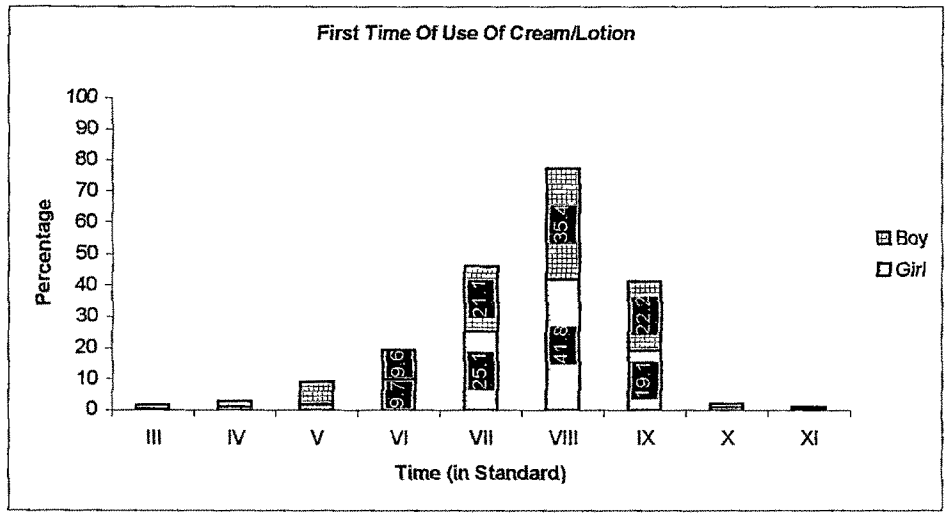


50.4 % of respondents have not noticed any pimple on their body. Cumulative 15.1 % responded that they have noticed pimple in standard VI.

Table 6.1.17.3B First Time Of Use Of Cream/Lotion

		Frequency	Valid Percent
Valid	II	3	.5
	III	5	.8
	IV	9	1 4
	V	30	4 7
	VI	62	9.7
	VII	144	22.5
	VIII	246	38 4
	IX	133	20.7
	X	6	9
	XI	3	5
	Total used cream	641	100 0
Total noticed pimples		1392	

Chart 6.1.17.3B First Time Of Use Of Cream/Lotion



46 % of respondents had started using cream to treat their pimple that had noticed pimples. Cumulative 15.8 % of adolescents had noticed pimples by standard VI. The pimple treatment knowledge may be given from standard VI. Face image is a major concern for adolescents. Teenage girls develop consciousness about their look during this age period as informed during the class discussions.

6.1.17.4 First Notice Time Of Voice Change

Chart 6.1.17.4 First Notice Time Of Voice Change

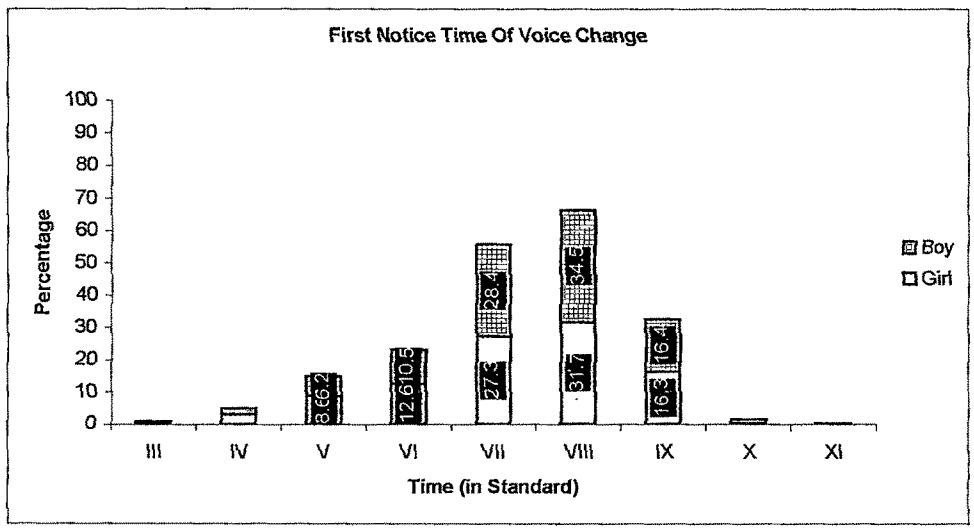


Table 6.1.17.4 First Notice Time Of Voice Change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I	1	.0	.1	1
	II	3	.1	.2	.2
	III	10	2	6	.8
	IV	40	1 0	2 3	3.1
	V	121	3.0	6.8	9 9
	VI	194	4.8	11.0	20.9
	VII	494	12.3	28.0	48.8
	VIII	597	14 9	33 8	82.6
	IX	289	7 2	16 4	99.0
	X	15	.4	.8	99 8
	XI	3	.1	2	100.0
	Total	1767	44.1	100 0	
Not yet changed		1748	43.6		
Missing	System	492	12.3		
Total		4007	100.0		

43.6 % of respondents have informed that their voice has not yet changed. While cumulative 20.9 % of respondents have reported that their voice had changed by standard VI.

6.1.17.5 First Notice Time Of Hair Growth On Legs & Arms

Chart 6.1.17.5 First Notice Time Of Hair Growth On Legs & Arms

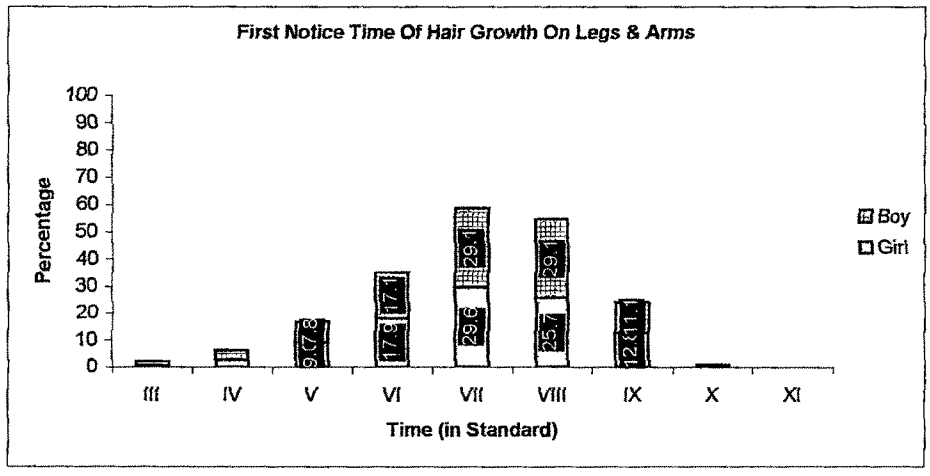


Table 6.1.17.5 First Notice Time Of Hair Growth On Legs & Arms

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I	5	.1	.2	.2
	II	19	5	7	.9
	III	24	6	.9	1 9
	IV	80	2.0	3.1	5.0
	V	209	5.2	8 2	13.3
	VI	442	11.0	17.4	30.7
	VII	744	18.6	29.3	59 9
	VIII	706	17.6	27.8	87 7
	IX	299	7.5	11 8	99.5
	X	12	.3	.5	100.0
	XI	1	0	.0	100 0
	Total	2541	63.4	100.0	
Not yet noticed		1130	28.2		
Missing	System	336	8.4		
Total		4007	100 0		

Cumulative 30.7 % of respondents have noticed the growth of hair on legs and arms in standard VI. 28.2 % of respondents have informed that they have yet to notice sufficient growth of hair on legs and arms.

6.1.17.6 First Notice Time Of Body Odour/Sweat Change

Chart 6.1.17.6 First Notice Time Of Body Odour/Sweat Change

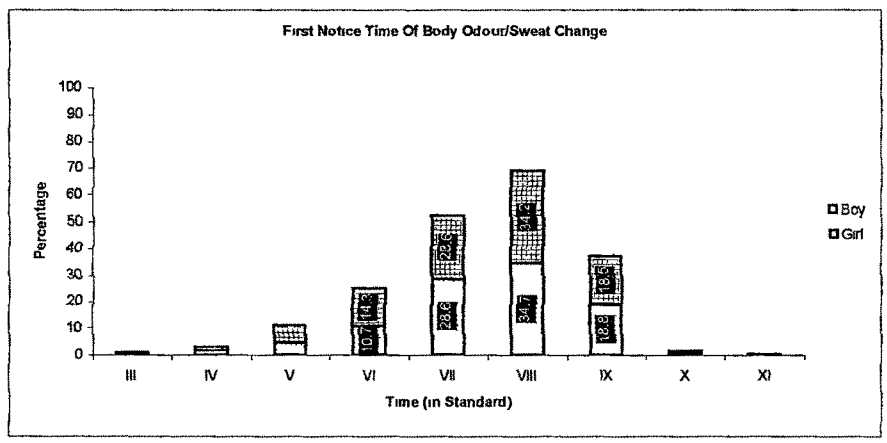


Table 6.1.17.6 First Notice Time Of Body Odour/Sweat Change

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	II	1	.0	1	.1
	III	9	2	.6	.6
	IV	24	6	1.5	2.1
	V	91	2.3	5.7	7 8
	VI	206	5.1	12.9	20.8
	VII	405	10.1	25.4	46.2
	VIII	548	13.7	34 4	80.6
	IX	296	7.4	18.6	99 2
	X	11	3	7	99 9
	XI	2	.0	1	100 0
	Total	1593	39 8	100 0	
Not yet noticed		1908	47.6		
Missing	System	506	12.6		
Total		4007	100.0		

47.6 % of respondents have informed that their body odour or sweat has not changed. Cumulative 20.8 % of respondents have noticed the change in their body odour and sweat by standard VI.

6.1.17.7 First Notice Time Of Period/Menarche/Menstruation

Chart 6.1.17.7 First Notice Time Of Period/Menarche/Menstruation

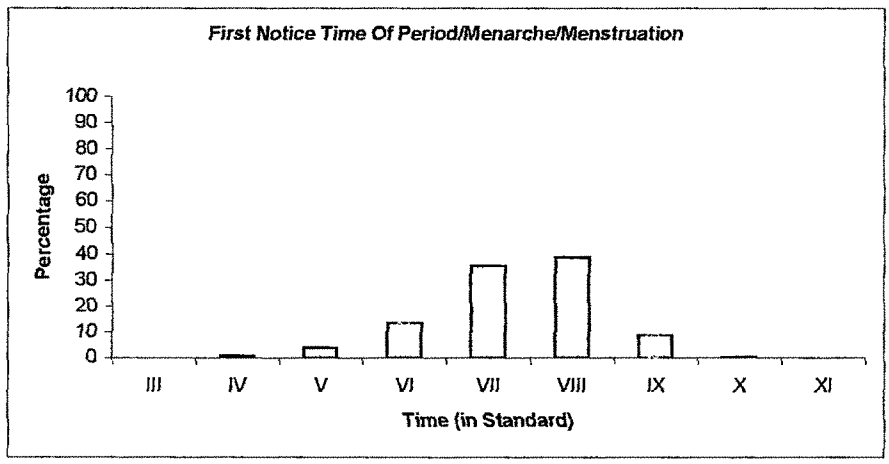


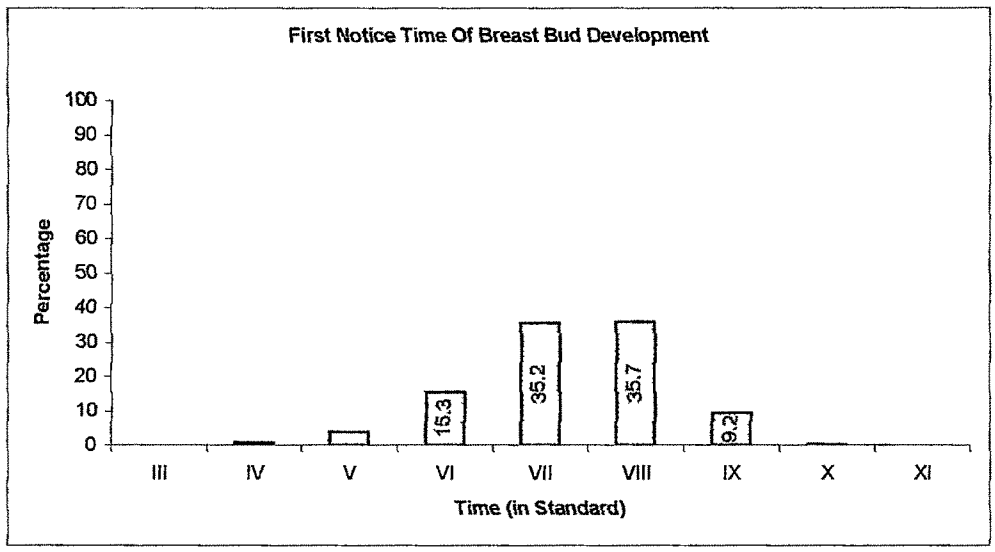
Table 6.1.17.7 First Notice Time Of Period/Menarche/Menstruation			
		Frequency	Valid Percent
Valid	IV	7	6
	V	43	3.5
	VI	161	13.0
	VII	444	35.7
	VIII	474	38.2
	IX	110	8.9
	X	3	2
	Total	1242	100.0
Not yet started		490	
Missing	System	25	
Total		1757	

28 % of girls have not yet started menstruating. Cumulative 17.1 % of girls have started menstruating by the standard VI. The education on menstruation may be given in standard VI.

6.1.17.8 First Notice Time Of Breast Bud Development

Table 6.1.17.8 First Notice Time Of Breast Bud Development			
		Frequency	Valid Percent
Valid	II	1	.1
	IV	8	.7
	V	42	3.7
	VI	174	15.2
	VII	405	35 4
	VIII	407	35.6
	IX	105	9.2
	X	2	.2
	Total	1144	100.0
Not yet noticed		578	
Missing	System	35	
Total		1757	

Chart 6.1.17.8 First Notice Time Of Breast Bud Development



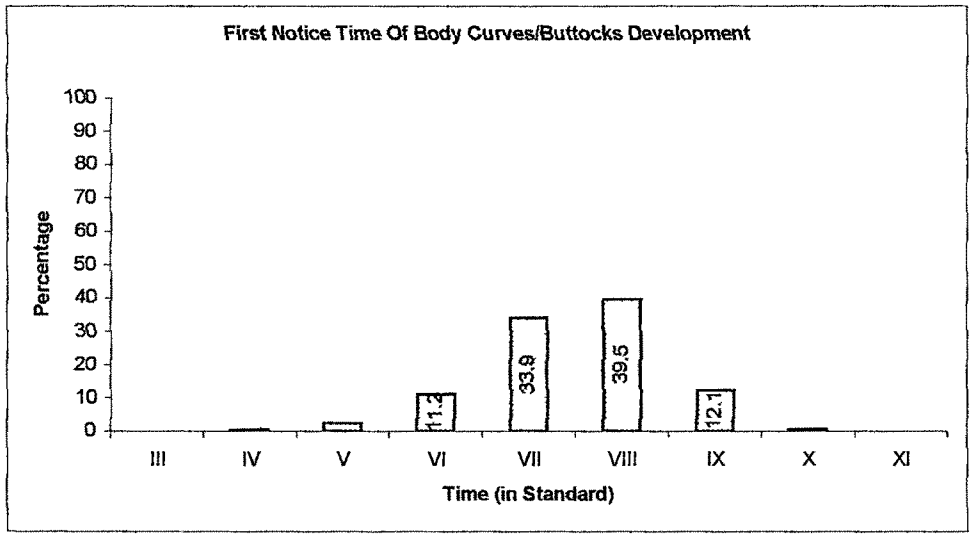
Cumulative 19.7 % of girls observed that their breast bud development started by standard VI. Even cumulative 4.5 % reported that their breast bud development started in standard V. The responses suggest that young girls need proper guidance on breast development by standard VI.

6.1.17.9 First Notice Time Of Body Curves/Buttocks Development

Table 6.1.17.9 First Notice Time Of Body Curves/Buttocks Development

		Frequency	Valid Percent
Valid	IV	3	4
	V	17	2 3
	VI	80	10.8
	VII	250	33 8
	VIII	293	39 6
	IX	91	12.3
	X	5	7
	Total	739	100.0
Not yet started		950	
Missing	System	68	
Total		1757	

Chart 6.1.17.9 First Notice Time Of Body Curves/Buttocks Development



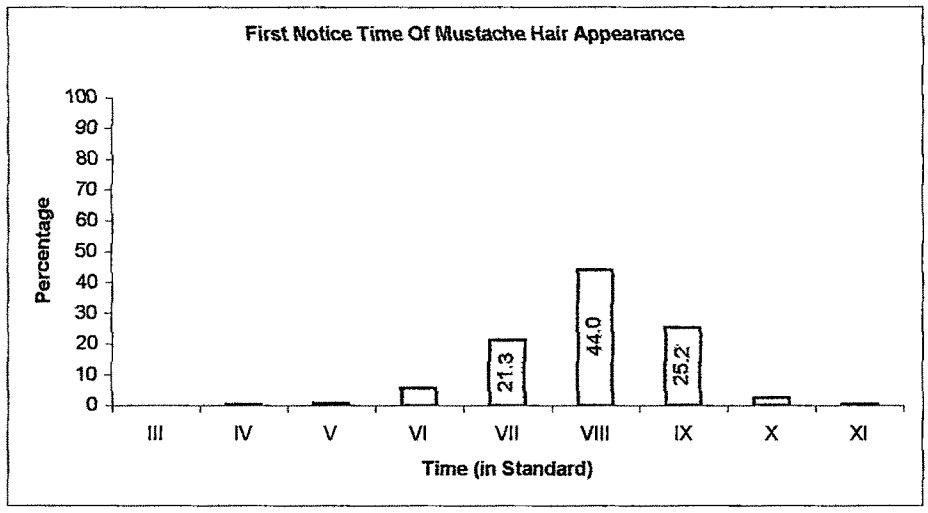
43.7 % of girls noticed that their body curves and buttock started developing. Cumulative 13.5 % of girls have noticed that their body curves and buttocks development started by standard VI.

6.1.17.10 First Notice Time Of Mustache Hair Appearance

Table 6.1.17.10 First Notice Time Of Mustache Hair Appearance

		Frequency	Valid Percent
Valid	III	1	1
	IV	3	3
	V	7	.8
	VI	49	5 6
	VII	187	21 3
	VIII	388	44.1
	IX	221	25.1
	X	20	2.3
	XI	3	.3
	Total	879	100.0
Not yet appeared		1183	
Missing	System	188	
Total		2250	

Chart 6.1.17.10 First Notice Time Of Mustache Hair Appearance



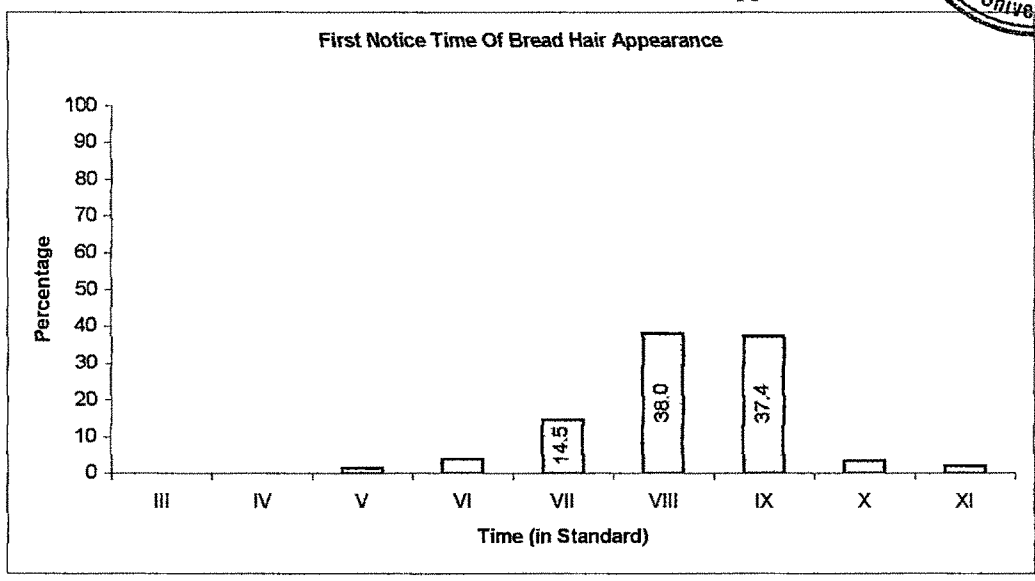
Cumulative 6.8 % by standard VI and additionally 21.3 % in standard VII boys have noticed the growth of Mustache hair.

6.1.17.11 First Notice Time Of Beard Hair Appearance

Table 6.1.17.11 First Notice Time Of Beard Hair Appearance

		Frequency	Valid Percent
Valid	IV	1	.2
	V	6	1.3
	VI	19	4 1
	VII	66	14.1
	VIII	181	38 6
	IX	173	36 9
	X	15	3.2
	XI	8	1.7
	Total	469	100 0
Not yet appeared		1571	
Missing	System	210	
Total		2250	

Chart 6.1.17.11 First Notice Time Of Beard Hair Appearance



Cumulative 5.6 % by standard VI and additionally 14.1 % in standard VII boys have noticed growth of beard hair

6.1.18.Q-S-L: Adolescents' knowledge on changes and products

Adolescents were asked to respond to their degree of knowledge on development of their reproductive system as well as products and care related to all these changes. 3 points ordinal scale was used. Six responses of common nature were asked. Two responses were exclusive for boys, while nine responses were exclusive for girls.

6.1.18.1.Level of knowledge on internal anatomy of reproduction

Table 6.1.18.1A Knowledge on Internal Anatomy of Reproduction			
		Frequency	Valid Percent
Valid	I Don't Know	1922	52 8
	I Know Partially	1388	38.2
	I Know Fully	328	9.0
	Total	3638	100.0
Missing	System	369	
Total		4007	

Only 9 % responded that they have complete knowledge of internal anatomy of reproduction While 52.8 % responded that they do not know about internal anatomy of reproduction. The general awareness is very less and there exists a good scope of improvement.

Table 6.1.18.1B Standardwise Knowledge on Internal Anatomy of Reproduction							
Common for Girls and Boys			VII	VIII	IX	X	XI
Internal Anatomy Of Reproduction	I Don't Know	Count	284	806	797	25	10
		%	50 5	57.5	51 0	31.6	32 3
	I Know Partially	Count	243	506	585	37	17
		%	43.2	36.1	37.4	46 8	54 8
	I Know Fully	Count	35	90	182	17	4
		%	6 2	6.4	11 6	21.5	12.9
Total	Count		562	1402	1564	79	31
	%		100.0	100 0	100 0	100.0	100 0

Knowledge about 'Internal anatomy of reproduction' shows that more than 50% of adolescents did not know the subject in standard VII, VIII and IX. Even in standard X, only 21.5 % knew it fully. The increase does not show a significant improvement in knowledge as adolescents move to higher standard.

6.1.18.2.Level of knowledge on trimming and shaving of Pubic-Hair

Table 6.1.18.2A Knowledge on Trimming & Shaving of Pubic-Hair			
		Frequency	Valid Percent
Valid	I Don't Know	2333	62 9
	I Know Partially	1061	28.6
	I Know Fully	313	8 4
	Total	3707	100.0
Missing	System	300	
Total		4007	

Only 8.4 % of respondents had complete knowledge on trimming and shaving of pubic hair. While 62.9 % of respondents, were totally unaware about trimming and shaving of pubic hair. There is need to generate awareness to cumulative 91.6 % of the adolescents.

Table 6.1.18.2B Standardwise Knowledge on Trimming & Shaving of Pubic-Hair							
Common for Girls and Boys			VII	VIII	IX	X	XI
Trimming & Shaving Of Pubic-Hair	I Don't Know	Count	381	919	987	26	20
		%	67 1	64.1	62.0	32 5	60.6
	I Know Partially	Count	168	420	435	28	10
		%	29 6	29.3	27 3	35.0	30.3
	I Know Fully	Count	19	94	171	26	3
		%	3 3	6.6	10.7	32.5	9.1
Total	Count		568	1433	1593	80	33
	%		100 0	100.0	100 0	100.0	100 0

The increase in fully knowledgeable adolescent about trimming and shaving of pubic hair from 3.3 % in standard VII to 6.6% in standard VIII and 10.7% in standard IX is gradual.

6.1.18.3 Level of knowledge on use of Shaving Blade/Razor

13 % responded that they had complete knowledge on shaving blade and razors. While 56.1 % adolescents were unaware about shaving products.

Table 6.1.18.3A Level of knowledge on use of Shaving Blade/Razor			
		Frequency	Valid Percent
Valid	I Don't Know	2077	56.1
	I Know Partially	1143	30.9
	I Know Fully	482	13 0
	Total	3702	100.0
Missing	System	305	
Total		4007	

Table 6.1.18.3B Standardwise Level of knowledge on use of Shaving Blade/Razor							
Common for Girls and Boys			VII	VIII	IX	X	XI
Use Of Shaving Blade/Razor	I Don't Know	Count	332	818	885	27	15
		%	58.7	57 1	55 6	33.8	45 5
	I Know Partially	Count	178	442	490	23	10
		%	31 4	30.9	30.8	28.8	30.3
	I Know Fully	Count	56	172	216	30	8
		%	9 9	12.0	13 6	37.5	24.2
Total	Count		566	1432	1591	80	33
	%		100.0	100.0	100.0	100.0	100.0

Gradual increase in knowledge of use of shaving razor and blade, from 9.9 % fully knowledgeable adolescents in standard VII to 13.6 % in standard IX and 37.5 % in standard X.

6.1.18.4 Level of knowledge on Acne/Pimple Care & Treatment

10.3 % of respondents confirmed having complete knowledge on acne and pimple care. 55.6 % of respondents were not aware on pimple care treatment.

Table 6.1.18.4A Level of knowledge on Acne/Pimple Care & Treatment			
		Frequency	Valid Percent
Valid	I Don't Know	2059	55.6
	I Know Partially	1260	34.0
	I Know Fully	383	10.3
	Total	3702	100.0
Missing	System	305	
Total		4007	

Table 6.1.18.4B Standardwise Level of knowledge on Acne/Pimple Care & Treatment							
Common for Girls and Boys			VII	VIII	IX	X	XI
Acne/Pimple Care & Treatment	I Don't Know	Count	312	828	879	23	17
		%	55.1	57.7	55.2	28 8	54.8
	I Know Partially	Count	220	477	518	36	9
		%	38.9	33.3	32.6	45.0	29 0
	I Know Fully	Count	34	129	194	21	5
		%	6.0	9 0	12.2	26.3	16 1
Total	Count		566	1434	1591	80	31
	%		100.0	100.0	100.0	100.0	100.0

26.3 % of fully knowledgeable about acne and pimple care adolescents responded in standard X.

6.1.18.5 Level of knowledge on Functions Of sperms And Ovary

Table 6.1.18.5A Level of knowledge on Functions Of sperms And Ovary			
		Frequency	Valid Percent
Valid	I Don't Know	1950	52 7
	I Know Partially	1255	33.9
	I Know Fully	495	13.4
	Total	3700	100.0
Missing	System	307	
Total		4007	

Only 13.4 % were having complete knowledge about function of sperms and ovaries in the reproductive system of human beings. 52.7 % were totally unaware on utility and functions of sperms and ovaries.

Table 6.1.18.5B Standardwise Level of knowledge on Functions of sperms And Ovary							
Common for Girls and Boys			VII	VIII	IX	X	XI
Functions Of sperms And Ovary	I Don't Know	Count	225	875	821	21	8
		%	39.8	61.0	51.7	26.3	25 8
	I Know Partially	Count	236	441	527	35	16
		%	41.7	30 7	33 2	43.8	51 6
	I Know Fully	Count	105	119	240	24	7
		%	18 6	8.3	15.1	30 0	22 6
Total	Count		566	1435	1588	80	31
	%		100.0	100.0	100.0	100 0	100.0

Standard VIII show a drop in % of adolescents knowing about the functions of sperms and ovary. In comparison standard VII had responded higher % up to 18.6 % knowing fully about the subject.

6.1.18.6 Level of knowledge on Child Sexual Abuse

Table 6.1.18.6 Level of knowledge on Child Sexual Abuse			
		Frequency	Valid Percent
Valid	I Don't Know	2571	70.1
	I Know Partially	832	22.7
	I Know Fully	265	7.2
	Total	3668	100 0
Missing	System	339	
Total		4007	

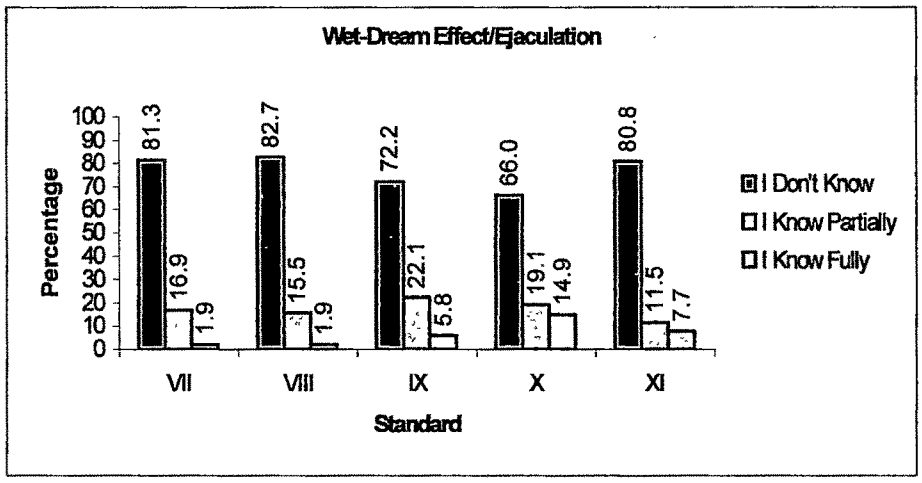
Only 7.2 % of respondents had complete knowledge on child sexual abuse. While 70.1 % of adolescents, were unaware about child sexual abuse.

6.1.18.7 Level of knowledge on Wet-Dream Effect/Ejaculation

Table 6.1.18.7A Level of knowledge on Wet-Dream Effect/Ejaculation			
		Frequency	Valid Percent
Valid	I Don't Know	1616	78.4
	I Know Partially	370	17.9
	I Know Fully	76	3.7
	Total	2062	100.0
Missing	System	188	
Total		2250	

78.4 % of boys were not aware on wet dream and ejaculation of sperms. Only 3.7 % boys were having full knowledge on wet dreams.

Table 6.1.18.7B Standardwise Level of knowledge on Wet-Dream Effect/Ejaculation							
Only for Boys			VII	VIII	IX	X	XI
Wet-Dream Effect /Ejaculation	I Don't Know	Count	260	663	563	31	21
		%	81.3	82.7	72.2	66.0	80.8
	I Know Partially	Count	54	124	172	9	3
		%	16.9	15.5	22.1	19.1	11.5
	I Know Fully	Count	6	15	45	7	2
		%	1.9	1.9	5.8	14.9	7.7
Total	Count		320	802	780	47	26
	%		100.0	100.0	100.0	100.0	100.0



The level of knowledge has not improved so significantly about wet dream and ejaculation among the boys. Even in standard X, 66 % adolescents responded that they do not know about wet dream.

6.1.18.8 Level of knowledge on Testicles Development In Scrotum

Table 6.1.18.8A Level of knowledge on Testicles Development In Scrotum

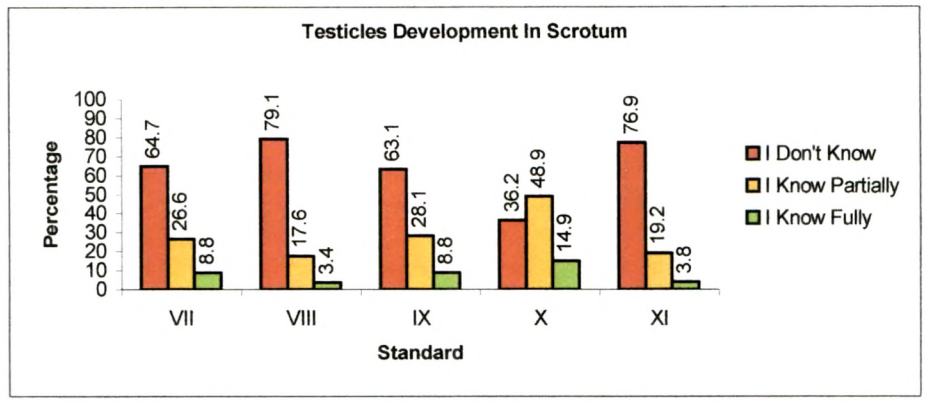
		Frequency	Valid Percent
Valid	I Don't Know	1430	69.7
	I Know Partially	485	23.6
	I Know Fully	136	6.6
	Total	2051	100.0
Missing	System	199	
Total		2250	

69.7 % of boys were unaware on development of scrotum and testicles as reproductive system in their body. Only 6.6 % were having full knowledge about scrotum and testicle development.

Table 6.1.18.8B Stabdardwise Level of knowledge on Testicles Development In Scrotum

Only for Boys			VII	VIII	IX	X	XI
Testicles Development In Scrotum	I Don't Know	Count	207	635	489	17	20
		%	64.7	79.1	63.1	36.2	76.9
	I Know Partially	Count	85	141	218	23	5
		%	26.6	17.6	28.1	48.9	19.2
	I Know Fully	Count	28	27	68	7	1
		%	8.8	3.4	8.8	14.9	3.8
Total	Count		320	803	775	47	26
	%		100 0	100 0	100.0	100.0	100 0

Chart 6.1.18.8 Standardwise Level of knowledge on Testicles Development In Scrotum



The percentage increase in knowledge on development of testicles as adolescent boys move to higher standard remained very low.

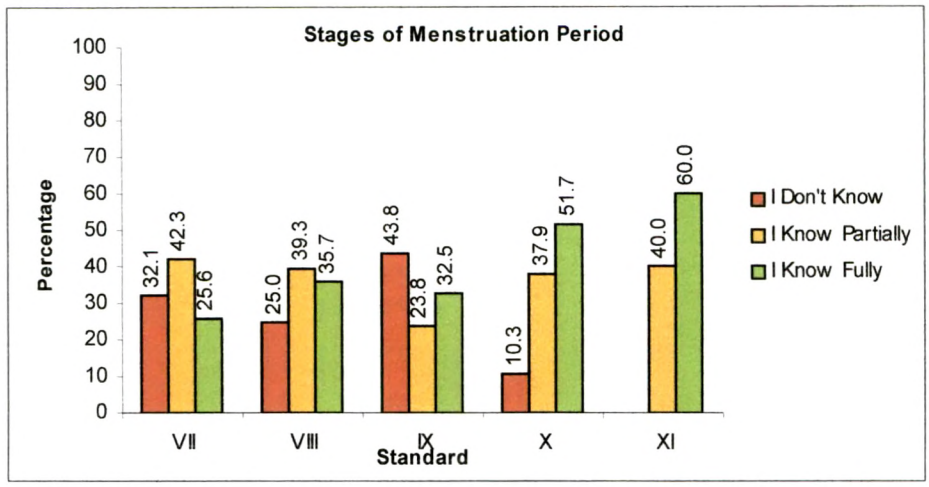
6.1.18.9 Level of knowledge on Stages Of Menstruation Period

Table 6.1.18.9A Level of knowledge on Stages Of Menstruation Period			
		Frequency	Valid Percent
Valid	I Don't Know	570	34.9
	I Know Partially	522	31.9
	I Know Fully	543	33.2
	Total	1635	100.0
Missing	System	122	
Total		1757	

34.9 % of girls did not know about different stages of menstruation cycle within their body.

Table 6.1.18.9B Standardwise Level of knowledge on Stages Of Menstruation Period							
Only for Girls			VII	VIII	IX	X	XI
Stages Of Menstruation Period	I Don't Know	Count	69	139	322	3	
		%	32.1	25.0	43.8	10.3	
	I Know Partially	Count	91	218	175	11	2
		%	42.3	39.3	23.8	37.9	40.0
	I Know Fully	Count	55	198	239	15	3
		%	25.6	35.7	32.5	51.7	60.0
Total	Count		215	555	736	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.9 Standardwise knowledge on Stages Of Menstruation



The complete knowledge on stages of menstruation among girls, increased from 25.5 % in standard VII to 51.7 % in standard X.

6.1.18.10 Level of knowledge on Purpose Of Menstruation In Your Life

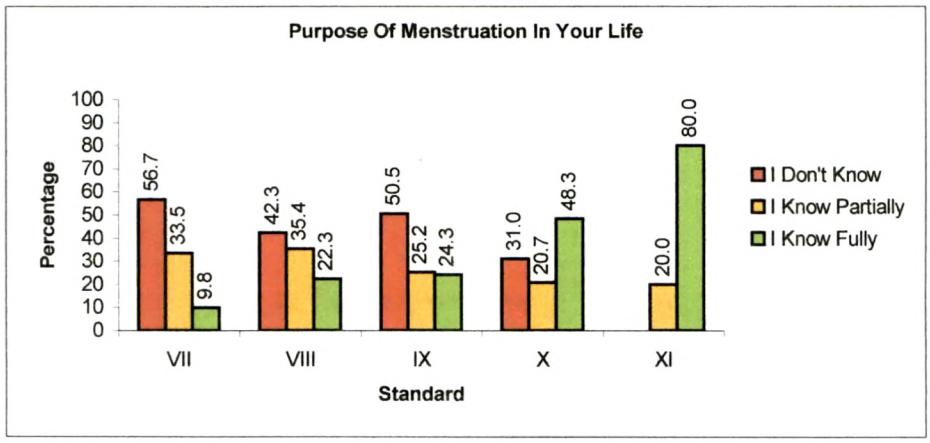
Table 6.1.18.10A Level of knowledge on Purpose Of Menstruation In Your Life

		Frequency	Valid Percent
Valid	I Don't Know	792	47.9
	I Know Partially	496	30.0
	I Know Fully	364	22.0
	Total	1652	100.0
Missing	System	105	
Total		1757	

47.9 % of adolescent girls confirmed that they did not know the purpose of menstruation in their life.

Table 6.1.18.10B Standardwise Level of knowledge on Purpose Of Menstruation In Your Life							
Only for Girls			VII	VIII	IX	X	XI
Purpose Of Menstruation In Your Life	I Don't Know	Count	122	235	381	9	
		%	56.7	42.3	50.5	31.0	
	I Know Partially	Count	72	197	190	6	1
		%	33.5	35.4	25.2	20.7	20.0
	I Know Fully	Count	21	124	183	14	4
		%	9.8	22.3	24.3	48.3	80.0
Total	Count		215	556	754	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.10 Standard wise knowledge on Purpose Of Menstruation in Life



A significant increase in knowledge from 9.8 % in standard VII to 48.3 % in standard X noticed among girls on the purpose of menstruation in the life.

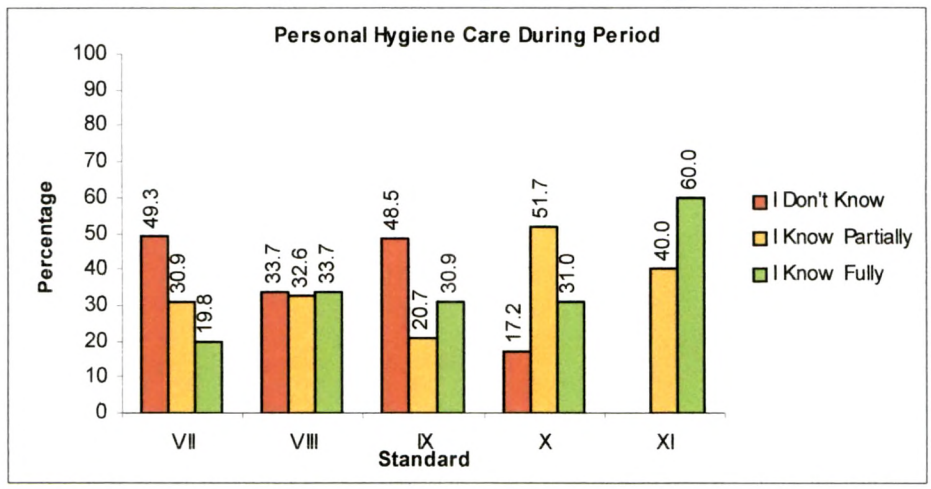
6.1.18.11 Level of knowledge on Personal Hygiene Care During Period

Table 6.1.18.11A Level of knowledge on Personal Hygiene Care During Period			
		Frequency	Valid Percent
Valid	I Don't Know	703	42.4
	I Know Partially	453	27.3
	I Know Fully	503	30.3
	Total	1659	100.0
Missing	System	98	
Total		1757	

42.4 % of respondent girls submitted that their knowledge on personal hygiene care during menstrual period was very less.

Table 6.1.18.11B Standardwise Level of knowledge on Personal Hygiene Care During Period							
Only for Girls			**VII**	**VIII**	**IX**	**X**	**XI**
Personal Hygiene Care During Period	**I Don't Know**	**Count**	107	189	366	5	
		%	49.3	33.7	48.5	17.2	
	I Know Partially	**Count**	67	183	156	15	2
		%	30.9	32.6	20.7	51.7	40.0
	I Know Fully	**Count**	43	189	233	9	3
		%	19.8	33.7	30.9	31.0	60.0
Total	**Count**		217	561	755	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.11 Standard wise knowledge on Personal Hygiene during Period



The full awareness remained at around 30 % about personal hygiene care during period. But the lack of knowledge improved from 49.3 % in standard VII to 17.2 % in standard X.

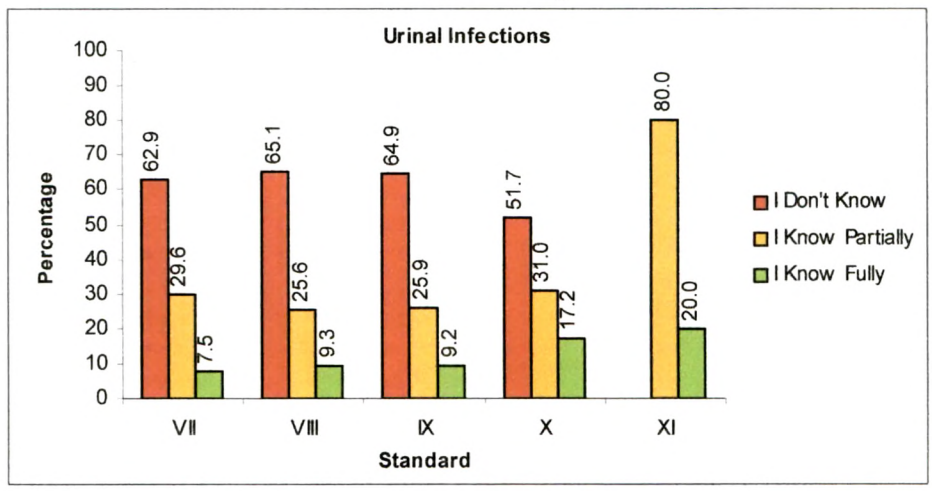
6.1.18.12 Level of knowledge on Urinal Infections

Only 9.2 % of girls responded that they were having full knowledge about urinal infections. While 64.6% reported that they did not know about urinal and vaginal infections, which may happen during puberty.

Table 6.1.18.12A Level of knowledge on Urinal Infections			
		Frequency	Valid Percent
Valid	I Don't Know	1064	64.6
	I Know Partially	431	26.2
	I Know Fully	151	9.2
	Total	1646	100.0
Missing	System	111	
Total		1757	

Table 6.1.18.12B Standardwise Level of knowledge on Urinal Infections							
Only for Girls			VII	VIII	IX	X	XI
Urinal Infections	I Don't Know	Count	134	364	487	15	
		%	62.9	65.1	64.9	51.7	
	I Know Partially	Count	63	143	194	9	4
		%	29.6	25.6	25.9	31.0	80.0
	I Know Fully	Count	16	52	69	5	1
		%	7.5	9.3	9.2	17.2	20.0
Total	Count		213	559	750	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.12 Standardwise knowledge on Urinal Infections



There was no significant increase in knowledge level and remained almost static about urinal infections.

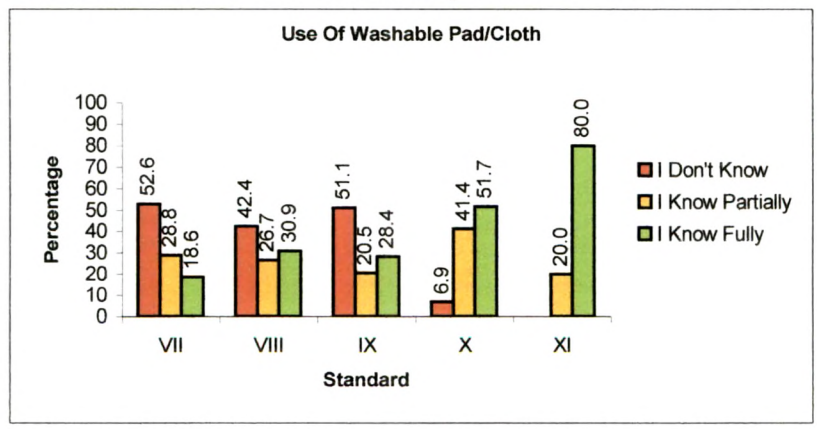
6.1.18.13 Level of knowledge on Use Of Washable Pad/Cloth

Table 6.1.18.13A Level of knowledge on Use Of Washable Pad/Cloth			
		Frequency	Valid Percent
Valid	I Don't Know	773	46.9
	I Know Partially	406	24.7
	I Know Fully	468	28.4
	Total	1647	100.0
Missing	System	110	
Total		1757	

46.9 % of girls confirmed that they did not know much about use of washable pad/cloth during menstruation. This is an alternative to disposable sanitary napkin.

Table 6.1.18.13B Standardwise Level of knowledge on Use Of Washable Pad/Cloth							
Only for Girls			VII	VIII	IX	X	XI
Use Of Washable Pad/Cloth	I Don't Know	Count	113	237	382	2	
		%	52.6	42.4	51.1	6.9	
	I Know Partially	Count	62	149	153	12	1
		%	28.8	26.7	20.5	41.4	20.0
	I Know Fully	Count	40	173	212	15	4
		%	18.6	30.9	28.4	51.7	80.0
Total	Count		215	559	747	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.13 Standard wise knowledge on use of Washable Pad/Cloth



A significant increase is noticed, in the knowledge of use of washable cloth/pad during menstruation.

6.1.18.14 Level of knowledge on Use Of Sanitary Napkin

Table 6.1.18.14A Level of knowledge on Use Of Sanitary Napkin

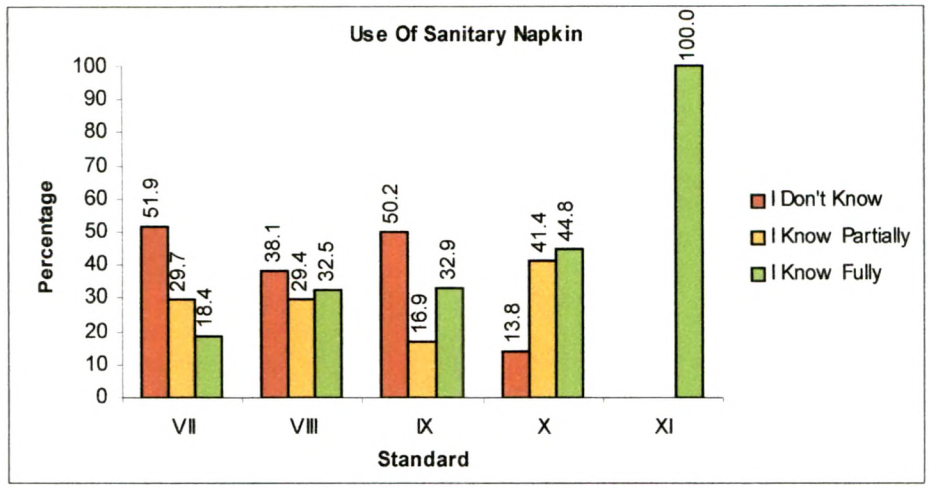
		Frequency	Valid Percent
Valid	I Don't Know	736	45.1
	I Know Partially	389	23.8
	I Know Fully	507	31.1
	Total	1632	100.0
Missing	System	125	
Total		1757	

45.1 % of girls admitted that they did not know about the use of sanitary napkin.

Table 6.1.18.14B Standardwise Level of knowledge on Use Of Sanitary Napkin

Only for Girls			VII	VIII	IX	X	XI
Use Of Sanitary Napkin	I Don't Know	Count	110	212	371	4	
		%	51.9	38.1	50.2	13.8	
	I Know Partially	Count	63	164	125	12	
		%	29.7	29.4	16.9	41.4	
	I Know Fully	Count	39	181	243	13	5
		%	18.4	32.5	32.9	44.8	100.0
Total	Count		212	557	739	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.14 Standardwise knowledge on Use Of Sanitary Napkin



A significant increase in knowledge as girls moved up in higher standards about the use of sanitary napkin.

6.1.18.15 Level of knowledge on Stages Of Breast Development

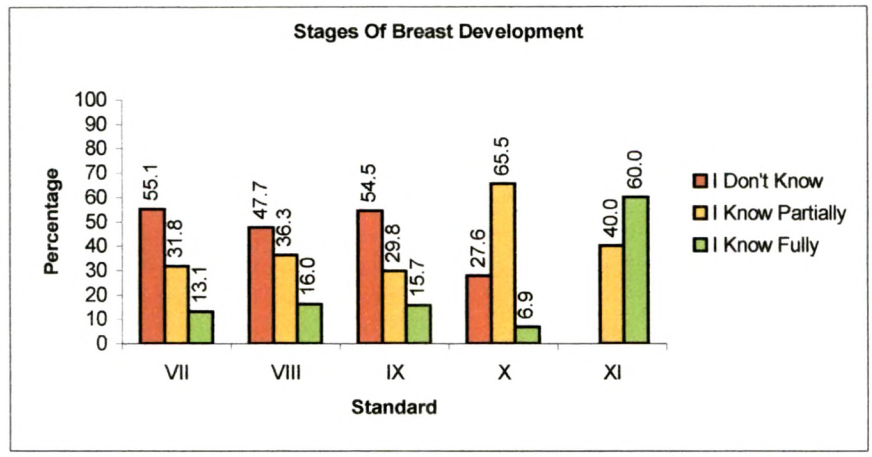
Table 6.1.18.15A Level of knowledge on Stages Of Breast Development

		Frequency	Valid Percent
Valid	I Don't Know	836	50.9
	I Know Partially	550	33.5
	I Know Fully	255	15.5
	Total	1641	100.0
Missing	System	116	
Total		1757	

The level of knowledge of 50.9 % of adolescent girls was very poor. Only 15.5 % knew fully about breast development.

Table 6.1.18.15B Standardwise Level of knowledge on Stages Of Breast Development							
Only for Girls			VII	VIII	IX	X	XI
Stages Of Breast Development	I Don't Know	Count	118	268	404	8	
		%	55.1	47.7	54.5	27.6	
	I Know Partially	Count	68	204	221	19	2
		%	31.8	36.3	29.8	65.5	40.0
	I Know Fully	Count	28	90	116	2	3
		%	13.1	16.0	15.7	6.9	60.0
Total	Count		214	562	741	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.15 Standard wise knowledge on Stages of Breast Development



There was no significant increase seen in knowledge on breast development.

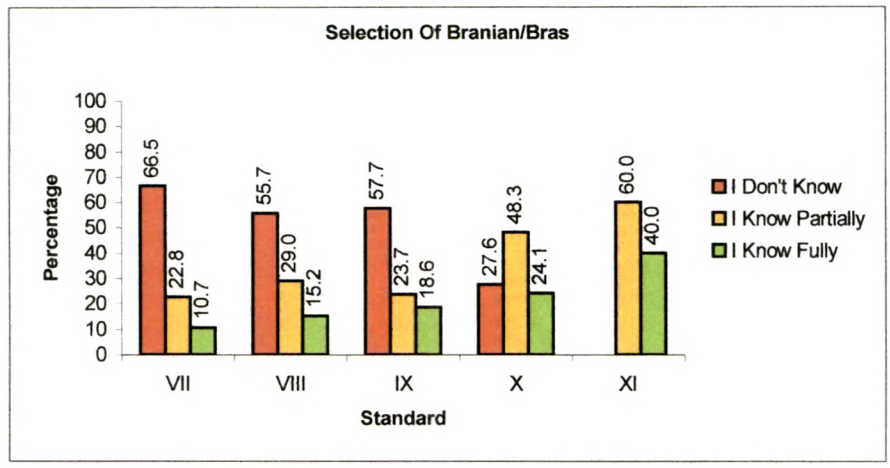
6.1.18.16 Level of knowledge on Selection of Branian/Bras

Table 6.1.18.16A Level of knowledge on Selection Of Branian/Bras			
		Frequency	Valid Percent
Valid	I Don't Know	944	57.7
	I Know Partially	424	25.9
	I Know Fully	267	16.3
	Total	1635	100.0
Missing	System	122	
Total		1757	

57.7 % of girls were ignorant about the selection criteria for brassieres. Only 16.3 % confirmed that they had full knowledge on how to select a brassiere.

Table 6.1.18.16B Standardwise Level of knowledge on Selection Of Branian/Bras							
Only for Girls			VII	VIII	IX	X	XI
Selection Of Branian/Bras	I Don't Know	Count	143	311	426	8	
		%	66.5	55.7	57.7	27.6	
	I Know Partially	Count	49	162	175	14	3
		%	22.8	29.0	23.7	48.3	60.0
	I Know Fully	Count	23	85	137	7	2
		%	10.7	15.2	18.6	24.1	40.0
Total	Count		215	558	738	29	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.16 Standard wise knowledge on Selection of Branian/Bras



A gradual increase in knowledge on selection of brassiere.

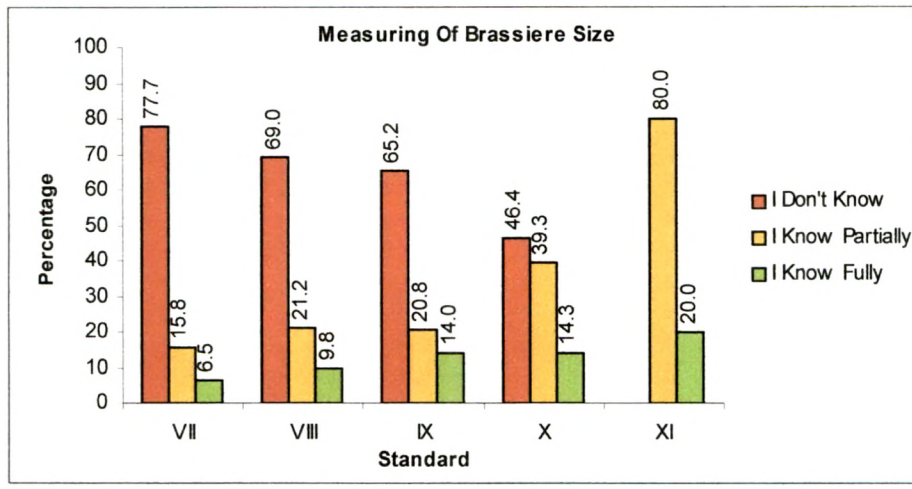
6.1.18.17 Level of knowledge on Measuring Of Brassiere Size

Table 6.1.18.17A Level of knowledge on Measuring Of Brassiere Size			
		Frequency	Valid Percent
Valid	I Don't Know	1101	67.8
	I Know Partially	339	20.9
	I Know Fully	183	11.3
	Total	1623	100.0
Missing	System	134	
Total		1757	

67.8 % of adolescent girls did not know about how to take their own measurement for brassiere size. Only 11.3 % confirmed to have complete knowledge on measurement of brassiere size.

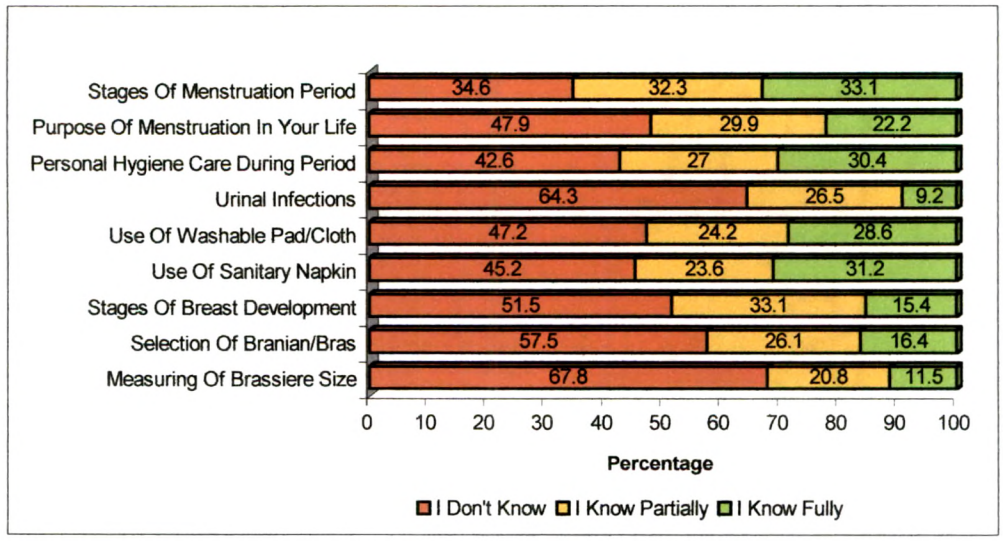
Table 6.1.18.17B Standardwise Level of knowledge on Measuring Of Brassiere Size							
Only for Girls			**VII**	**VIII**	**IX**	**X**	**XI**
Measuring Of Brassiere Size	**I Don't Know**	**Count**	167	381	479	13	
		%	77.7	69.0	65.2	46.4	
	I Know Partially	**Count**	34	117	153	11	4
		%	15.8	21.2	20.8	39.3	80.0
	I Know Fully	**Count**	14	54	103	4	1
		%	6.5	9.8	14.0	14.3	20.0
Total	**Count**		215	552	735	28	5
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.17 Standard wise knowledge on Measuring of Brassiere Size



A significant reduction in % of girls unaware on measurements of brassiere from 77.7 % in standard VII to 46.4 % in standard X.

6.1.18 Level of knowledge of girls on reproductive healthcare



6.1.18.18.Child sexual abuse

Adolescents were asked about that awareness about child sexual abuse. Parents were also asked that they had discussed child sexual abuse with their son/daughter or not.

Table 6.1.18.18A Child Sexual Abuse-Response from students		
	Frequency	%
I Don't Know	2571	70.1
I Know Partially	832	22.7
I Know Fully	265	7.2
Total	3668	100.0
Missing System	339	
Total	4007	

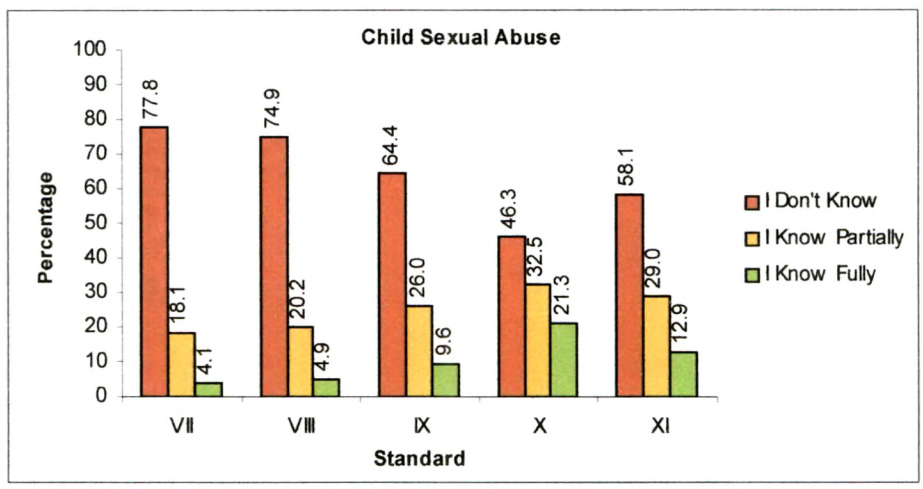
Table 6.1.18.18B Child Sexual Abuse-Response from parents		
	Frequency	Percent
Never Discussed	490	68.1
Partially Discussed	167	23.2
Completely Discussed	63	8.8
Total	720	100.0
Missing System	54	
Total	774	

70.1 % of adolescents ere unaware about child sexual abuse, while only 7.2 % responded that they were having complete knowledge of sexual abuse. 68.1 of parents responded that they had never discussed the topic of child sexual abuse with their son/daughter. Parents feel the subject very sensitive for discussion.

Table 6.1.18.18C Standardwise awareness on Child Sexual Abuse

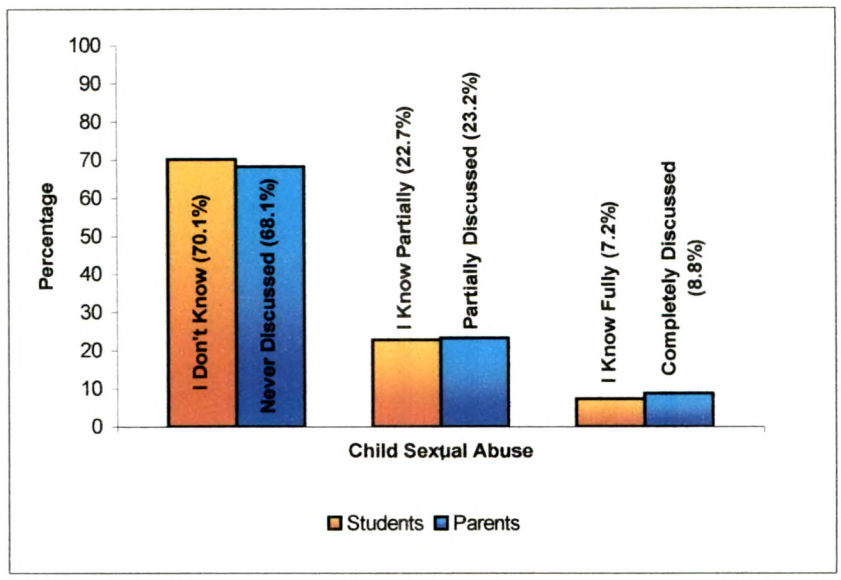
Common for Girls and Boys			Standards				
			VII	VIII	IX	X	XI
Child Sexual Abuse	I Don't Know	Count	437	1067	1012	37	18
		%	77.8	74.9	64.4	46.3	58.1
	I Know Partially	Count	102	287	408	26	9
		%	18.1	20.2	26.0	32.5	29.0
	I Know Fully	Count	23	70	151	17	4
		%	4.1	4.9	9.6	21.3	12.9
Total	Count		562	1424	1571	80	31
	%		100.0	100.0	100.0	100.0	100.0

Chart 6.1.18.18A Standard wise awareness on Child Sexual Abuse



The awareness on the child sexual abuse increased in higher standards, but still around 50 % were needed guidance on the sexual abuse.

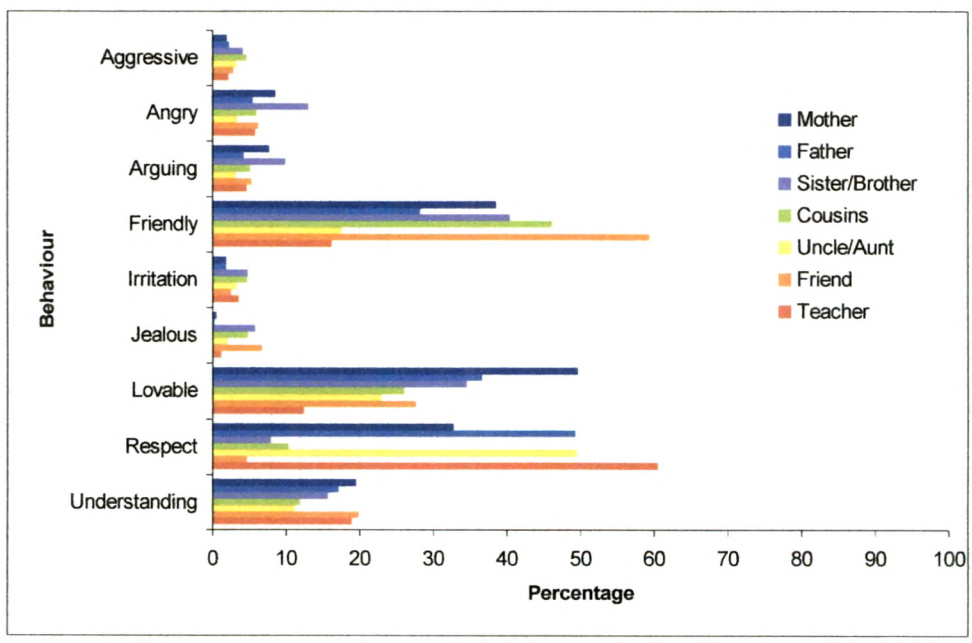
Chart 6.1.18.18B Adolescents and parents awareness on Child Sexual Abuse



6.1.19.Q-S-M : Behavior changes with near relationship

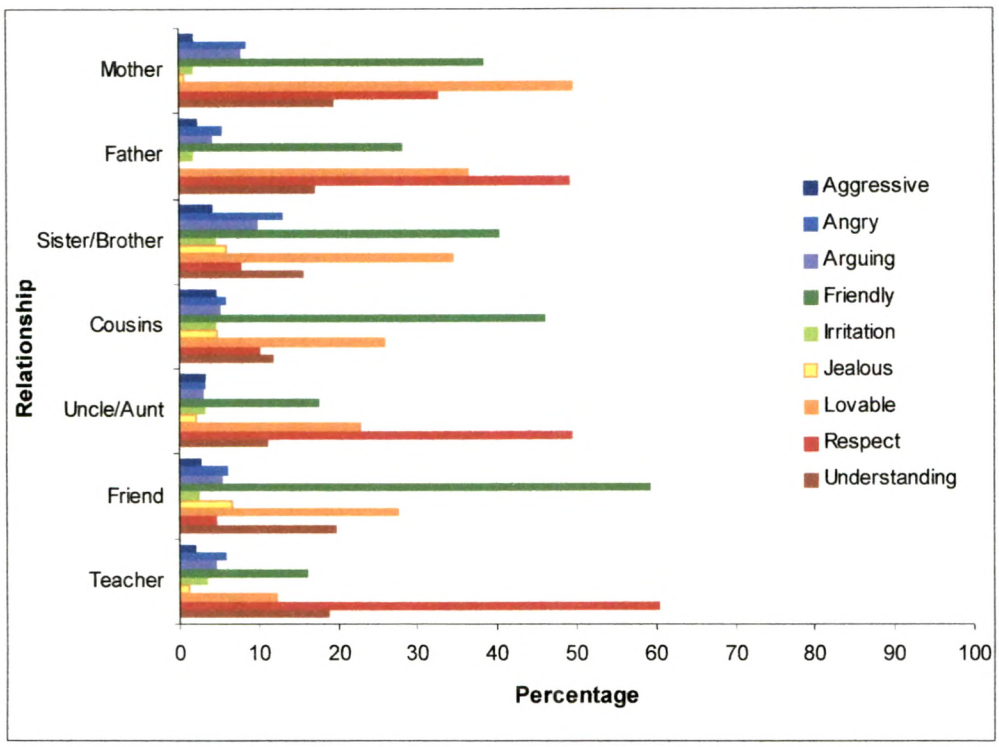
Adolescents responded on their change in behavior with their near relationships with respect to their child hood and now.

Chart 6.1.19A Behavior change with near relationship



The majority of students have shown that their behavior become friendly with near relationship. Mother, father and teacher are emotionally attached with respect to change in behavior.

Chart 6.1.19B Change in behavior with near relationship



Major behavior change is seen in friendliness, respect and lovable related behavior as students enter from childhood to adolescence.

Table 6.1.19A Sharing relationship for interest and changes in behaviour of adolescents

Mother-Interest

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	39	156	141	796	32	11	933	606	403	3117
	No	26	121	112	450	28	7	670	452	231	2097
	Total	65	277	253	1246	60	18	1603	1058	634	5214
Expected	Yes	38.86	165.59	151.25	744.88	35.87	10.76	958.30	632.49	379.01	
	No	26.14	66.60	60.83	299.58	14.43	4.33	385.41	254.38	152.43	
p-value		0.000									
chi-square statistics		590.07									

Father-Interest

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	26	65	55	412	15	4	504	636	251	1968
	No	41	98	73	425	41	4	579	820	257	2338
	Total	67	163	128	837	56	8	1083	1456	508	4306
Expected	Yes	30.62	74.50	58.50	382.54	25.59	3.66	494.97	665.45	232.17	
	No	36.38	40.45	31.76	207.71	13.90	1.99	268.75	361.31	126.06	
p-value		0.000									
chi-square statistics		1506.50									

Interest Sister/Brother

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	60	199	142	663	57	81	540	132	257	2131
	No	60	174	144	491	83	88	446	94	194	1774
	Total	120	373	286	1154	140	169	986	226	451	3905
Expected	Yes	65.49	203.55	156.07	629.75	76.40	92.23	538.07	123.33	246.12	
	No	54.51	92.47	70.90	286.09	34.71	41.90	244.44	56.03	111.81	
p-value		0.000									
chi-square statistics		675.82									

Cousin-Interest

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	21	38	37	375	30	30	208	68	108	915
	No	103	118	99	831	96	99	474	203	203	2226
	Total	124	156	136	1206	126	129	682	271	311	3141
Expected	Yes	36.12	45.44	39.62	351.32	36.70	37.58	198.67	78.94	90.60	
	No	87.88	32.21	28.08	248.98	26.01	26.63	140.80	55.95	64.21	
p-value		0.000									
chi-square statistics		3648.30									

Interest with Uncle/Aunt

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	13	7	8	60	10	3	68	107	37	313
	No	71	80	75	391	74	52	522	1164	249	2678
	Total	84	87	83	451	84	55	590	1271	286	2991
Expected	Yes	8.79	9.10	8.69	47.20	8.79	5.76	61.74	133.01	29.93	
	No	75.21	8.15	7.78	42.26	7.87	5.15	55.28	119.09	26.80	
p-value		0.000									
chi-square statistics		20040.40									

Friend-Interest

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	58	134	114	1237	52	129	634	97	429	2884
	No	24	45	41	465	22	66	160	37	140	1000
	Total	82	179	155	1702	74	195	794	134	569	3884
Expected	Yes	60.89	132.91	115.09	1263.79	54.95	144.79	589.57	99.50	422.50	
	No	21.11	34.22	29.63	325.38	14.15	37.28	151.79	25.62	108.78	
p-value		0.000									
chi-square statistics		115.12									

Teacher-Interest

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	8	10	12	65	10	2	49	146	63	365
	No	52	153	118	384	89	31	295	1525	462	3109
	Total	60	163	130	449	99	33	344	1671	525	3474
Expected	Yes	6.30	17.13	13.66	47.17	10.40	3.47	36.14	175.57	55.16	
	No	53.70	15.33	12.22	42.22	9.31	3.10	32.35	157.12	49.36	
p-value		0.000									
chi-square statistics		23364.50									

H0: Interest sharing with relation and the change in behaviors with that relation is independent to each other.

H1: Interest sharing with relation and the change in behaviors with that relation is not independent to each other.

Conclusion:
Since, p-value for all the chi-square test of independence is less than 0.05 (level of significance), there is sufficient evidence against the null hypothesis to reject it. Thus, event of interest sharing with (mother, father, sister/brother, uncle/aunt, cousin, teacher, friend etc.) and

change in behavior is not independent to each other.

Infact, since p- value is very close to 0, shows the very strong evidence to reject the null hypothesis and indicates the strong association between event of sharing the interest and the change in behavior.

Table 6.1.19B Sharing relationship for problems and changes in behaviour of adolescents

Mother-Problem

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	41	168	147	962	35	16	1180	735	464	3748
	No	24	109	106	284	25	2	423	323	170	1466
	Total	65	277	253	1246	60	18	1603	1058	634	5214
Expected	Yes	46.72	199.12	181.86	895.67	43.13	12.94	1152.29	760.53	455.74	
	No	18.28	55.98	51.13	251.83	12.13	3.64	323.99	213.83	128.14	
p-value		0.000									
chi-square statistics		250.13									

Father-Problem

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	20	49	42	345	11	3	423	488	188	1569
	No	47	114	86	492	45	5	660	968	320	2737
	Total	67	163	128	837	56	8	1083	1456	508	4306
Expected	Yes	24.41	59.39	46.64	304.98	20.41	2.92	394.62	530.53	185.10	
	No	42.59	37.75	29.65	193.85	12.97	1.85	250.83	337.22	117.66	
p-value		0.000									
chi-square statistics		3018.10									

Sister/Brother-Problem

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	50	172	119	629	51	85	512	124	258	2000
	No	70	201	167	525	89	84	474	102	193	1905
	Total	120	373	286	1154	140	169	986	226	451	3905
Expected	Yes	61.46	191.04	146.48	591.04	71.70	86.56	504.99	115.75	230.99	
	No	58.54	93.19	71.46	288.33	34.98	42.22	246.35	56.47	112.68	
p-value		0.000									
chi-square statistics		899.52									

Cousin-Problem											
		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	23	24	27	304	20	22	185	54	87	746
	No	101	132	109	902	106	107	497	217	224	2395
	Total	124	156	136	1206	126	129	682	271	311	3141
Expected	Yes	29.45	37.05	32.30	286.43	29.93	30.64	161.98	64.36	73.86	
	No	94.55	28.25	24.63	218.40	22.82	23.36	123.51	49.08	56.32	
p-value		0.000									
chi-square statistics		5637.03									

Uncle/Aunt-Problem											
		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	6	5	6	42	4	4	66	94	31	258
	No	78	82	77	409	80	51	524	1177	255	2733
	Total	84	87	83	451	84	55	590	1271	286	2991
Expected	Yes	7.25	7.50	7.16	38.90	7.25	4.74	50.89	109.63	24.67	
	No	76.75	6.86	6.54	35.55	6.62	4.34	46.50	100.18	22.54	
p-value		0.000									
chi-square statistics		25707.81									

Friend-Problem											
		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	62	135	111	1228	48	138	637	101	449	2909
	No	20	44	44	474	26	57	157	33	120	975
	Total	82	179	155	1702	74	195	794	134	569	3884
Expected	Yes	61.42	134.07	116.09	1274.75	55.42	146.05	594.68	100.36	426.16	
	No	20.58	33.65	29.14	320.00	13.91	36.66	149.28	25.19	106.98	
p-value		0.000									
chi-square statistics		118.70									

Teacher-Problem

		Aggressive	Angry	Arguing	Friendly	Irritation	Jealous	Lovable	Respect	Understanding	Total
Observed	Yes	4	8	11	49	4	7	44	126	53	306
	No	56	155	119	400	95	26	300	1545	472	3168
	Total	60	163	130	449	99	33	344	1671	525	3474
Expected	Yes	5.28	14.36	11.45	39.55	8.72	2.91	30.30	147.19	46.24	
	No	54.72	13.09	10.44	36.07	7.95	2.65	27.63	134.22	42.17	
p-value		0.000									
chi-square statistics		29415.90									

H0: problem sharing with relation and the change in behaviors with that relation are independent to each other.

H1: problem sharing with relation and the change in behaviors with that relation are not independent to each other.

Conclusion:

Since, p-value for all the chi-square test of independence is less than 0.05 (level of significance), there is sufficient evidence against the null hypothesis to reject it. Thus, event of problem sharing with (mother, father, sister/brother, uncle/aunt, cousin, teacher, friend etc.) and change in behavior is not independent to each other.

Infact, since p- value is very close to 0, shows the very strong evidence to reject the null hypothesis and indicates the strong association between event of sharing the interest and the change in behavior.

6.1.20.Q-S-O : Change in feelings and emotions with near relationship

The change in feelings and emotions in adolescents were asked with respect to their near and dear relationship like mother, father, teacher, friend etc.. The adolescents were asked to respond about their change in various feelings on 4 points ordinal scale. The labels were Never, Sometimes, Frequently and Always.

6.1.20.1 Have you experienced loneliness among people?

Table 6.1.20.1 Have you experienced Loneliness Among People?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1426	35.6	36.4	36.4
	Sometimes	1988	49.6	50.8	87.2
	Frequently	355	8.9	9.1	96.3
	Always	145	3.6	3.7	100.0
	Total	3914	97.7	100.0	
Missing	System	93	2.3		
Total		4007	100.0		

36.4 % responded that they never felt loneliness among people. While 50.8 % agreed that sometimes they felt loneliness even among people. It suggest that there is a change in felling with respect to loneliness, but extreme percentage are less. Only 3.7 % felt always and 9.1 % felt frequently.

6.1.20.2 Did you get feeling like 'No One Understands Me' ?

Feeling of ' No one understand me' have never experienced by 30.5 % of respondents. Cumulative 22.6 % of respondents responded that they frequently get such feeling that they are not being understood by anyone.

Table 6.1.20.2 Did you get feeling like 'No One Understands Me' ?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1177	29.4	30.4	30.4
	Sometimes	1820	45.4	47.0	77.4
	Frequently	588	14.7	15.2	92.6
	Always	287	7.2	7.4	100.0
	Total	3872	96.6	100.0	
Missing	System	135	3.4		
Total		4007	100.0		

6.1.20.3 Did you get feeling like 'I Am Not A Kid Anymore'?

Table 6.1.20.3 Did you get feeling like 'I Am Not A Kid Anymore'?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	934	23.3	24.1	24.1
	Sometimes	1247	31.1	32.2	56.3
	Frequently	979	24.4	25.3	81.6
	Always	711	17.7	18.4	100.0
	Total	3871	96.6	100.0	
Missing	System	136	3.4		
Total		4007	100.0		

Cumulative 45.7 % of respondents felt that they got feeling of ' I am not a Kid anymore' while interacting with others. They hoped that they be treated like grown up child, specifically in the presence of others.

6.1.20.4 Did you get feeling like 'Why, Always It Happens To Me'?

Cumulative 38.9 % of respondents experienced the feeling like 'Why it always happens to me?'. The failure rate was attached to oneself.

Table 6.1.20.4 Did you get feeling like 'Why, Always It Happens To Me'?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	644	16.1	16.6	16.6
	Sometimes	1720	42.9	44.4	61.1
	Frequently	919	22.9	23.7	84.8
	Always	589	14.7	15.2	100.0
	Total	3872	96.6	100.0	
Missing	System	135	3.4		
Total		4007	100.0		

6.1.20.5 Did you get feeling like 'Urge To Talk To A Friend'?

Table 6.1.20.5 Did you get feeling like 'Urge To Talk To A Friend'?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	618	15.4	16.0	16.0
	Sometimes	1086	27.1	28.1	44.1
	Frequently	918	22.9	23.7	67.8
	Always	1245	31.1	32.2	100.0
	Total	3867	96.5	100.0	
Missing	System	140	3.5		
Total		4007	100.0		

Cumulative 55.9 % of respondents felt urge to talk to a friend frequently or always. The friendship outside the home became stronger slowly.

6.1.20.6 Did you get feeling to 'Discuss Personal Matters'?

Table 6.1.20.6 Did you get feeling to 'Discuss Personal Matters'?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	525	13.1	13.6	13.6
	Sometimes	1470	36.7	38.1	51.7
	Frequently	995	24.8	25.8	77.4
	Always	871	21.7	22.6	100.0
	Total	3861	96.4	100.0	
Missing	System	146	3.6		
Total		4007	100.0		

Cumulative 48.3 % felt to discuss personal matters frequently or always in this age. Many questions were arising in the adolescents mind on their personal body growth.

6.1.20.7 Did you get feeling like 'Irritated & Annoyed'?

Table 6.1.20.7 Did you get feeling like 'Irritated & Annoyed'?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	987	24.6	25.6	25.6
	Sometimes	1952	48.7	50.6	76.2
	Frequently	638	15.9	16.5	92.7
	Always	282	7.0	7.3	100.0
	Total	3859	96.3	100.0	
Missing	System	148	3.7		
Total		4007	100.0		

25.6 % of respondents never got irritated or annoyed, while 50.6 % of respondents sometimes felt irritation.

6.1.20.8 Did you get feeling like 'Need Privacy & Independence'?

Table 6.1.20.8 Did you get feeling like 'Need Privacy & Independence'?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	953	23.8	24.8	24.8
	Sometimes	1290	32.2	33.5	58.3
	Frequently	837	20.9	21.8	80.0
	Always	768	19.2	20.0	100.0
	Total	3848	96.0	100.0	
Missing	System	159	4.0		
Total		4007	100.0		

Cumulative 41.7 % of respondents felt the need of some privacy and impendence during this age.

6.1.21.Feelings Vs. Interaction of Father and Mother

Adolescents responded the emotional changes through various feelings. They had also responded on their interaction with their parents.

Table 6.1.21 Feelings Vs. Interaction between parents and adolescents			
Feelings		**Average Hour/Day Interacting**	
		Mother	**Father**
Loneliness Among People	chi-square statistic	3.813	8.606
	p-value	0.923	0.474
I Am Not A Kid Anymore	chi-square statistic	8.753	10.326
	p-value	0.460	0.325
No One Understands Me	chi-square statistic	4.215	4.394
	p-value	0.897	0.884
Why, Always It Happens To Me?	chi-square statistic	14.547	10.288
	p-value	0.104	0.328
Urge To Talk To A Friend	chi-square statistic	20.173	9.254
	p-value	**0.017**	0.414
Discuss Personal Matters	chi-square statistic	16.878	8.371
	p-value	**0.051**	0.497
Irritated & Annoyed	chi-square statistic	6.673	5.863
	p-value	0.671	0.754
Need Privacy & Independence	chi-square statistic	6.336	8.466
	p-value	0.706	0.488

H10: Frequency of feeling of loneliness among people is independent to average time of interaction with mother

H11: Frequency of feeling of loneliness among people is not independent to average time of interaction with mother

H20: Frequency of feeling of loneliness among people is independent to average time of interaction with father

H21: Frequency of feeling of loneliness among people is not independent to average time of interaction with father

Conclusion:1

Since, p-value is greater than the level of significance (0.05), there is no sufficient evidence against the null hypothesis to reject it. Thus, frequency of feeling of loneliness among people is independent to average time of interaction with mother. This means based on sample information one can not assure frequency of feeling of loneliness among people is decreasing with increasing average time of interaction with mother or the other way around.

Conclusion:2

Since, p-value is greater than the level of significance (0.05), there is no sufficient evidence against the null hypothesis to reject it. Thus, frequency of feeling of loneliness among people is independent to average time of interaction with father. This means based on sample information one can not assure frequency of feeling of loneliness among people is decreasing with increasing average time of interaction with father or the other way around.

Similarly for other feelings.....

Overall Conclusion:

Since, p-value of chi-square test of independence between feelings and average interaction time with mother as well with father is greater than 0.05 (level of significance),except for feeling like Urge to talk to a friend and for discuss personal matter, shows the independence between the frequency of feelings and interaction time with mother and father.

Remark:

Since, p-value of chi-square test of independence for frequency to discuss personal matter and average interaction time with mother is less than 0.05(level of significance) indicates that these to events are not independent. Also, the same result is found in case of frequency to urge to talk to a friend and interaction time with mother.

6.1.21.1 Loneliness Among People

Table 6.1.21.1 Interaction Vs. Loneliness									
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
Loneliness Among People	Never	Count	882	453	17	4	1118	221	4	
		Col %	36.6	35.1	42.5	28.6	35.7	39.1	33.3	
	Sometimes	Count	1224	670	17	9	1615	272	6	1
		Col %	50.8	51.9	42.5	64.3	51.6	48.1	50.0	50.0
	Frequently	Count	216	120	5	1	286	50	2	1
		Col %	9.0	9.3	12.5	7.1	9.1	8.8	16.7	50.0
	Always	Count	87	48	1		110	22		
		Col %	3.6	3.7	2.5		3.5	3.9		
Total	Count		2409	1291	40	14	3129	565	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

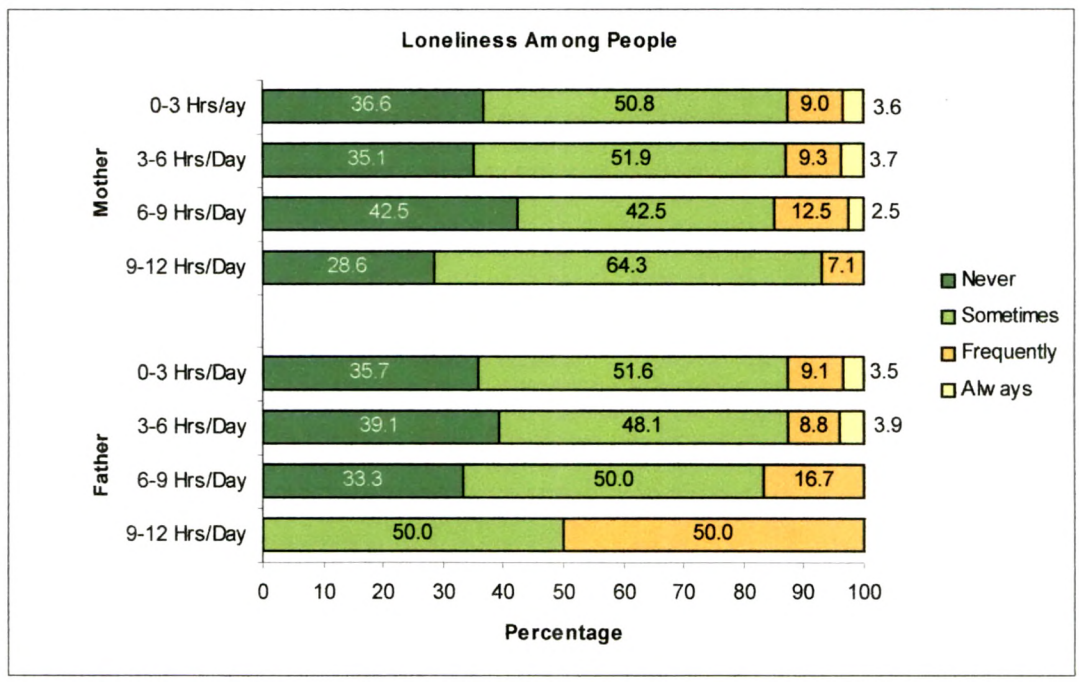


Chart 6.1.21.1 Interaction Vs. Loneliness

The feeling of loneliness among adolescents remains more or less same even with increased interaction with parents.

6.1.21.2 I Am Not A Kid Anymore

Table 6.1.21.2 Interaction Vs. feeling 'I Am Not A Kid Anymore'									
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
I Am Not A Kid Anymore	Never	Count	590	301	8	1	751	135	1	1
		Col %	24.8	23.5	20.0	7.1	24.2	24.1	8.3	50.0
	Sometimes	Count	780	404	9	4	1002	176	2	1
		Col %	32.8	31.6	22.5	28.6	32.4	31.4	16.7	50.0
	Frequently	Count	590	333	14	5	787	137	7	
		Col %	24.8	26.0	35.0	35.7	25.4	24.5	58.3	
	Always	Count	420	242	9	4	557	112	2	
		Col %	17.6	18.9	22.5	28.6	18.0	20.0	16.7	
Total	Count		2380	1280	40	14	3097	560	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

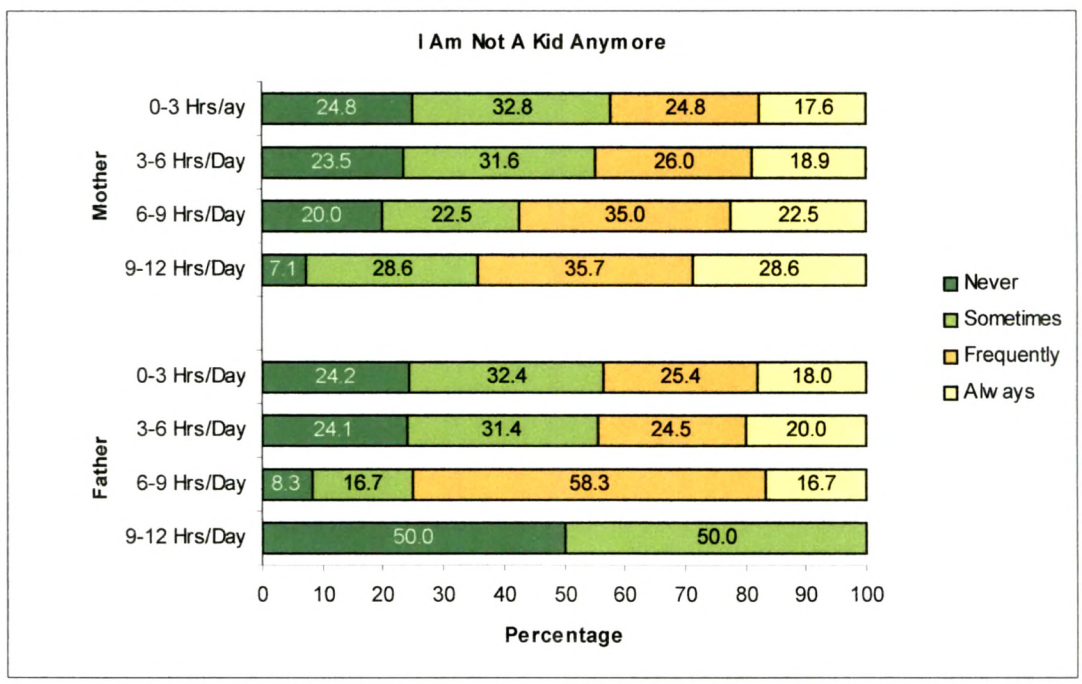


Chart 6.1.21.2 Interaction Vs. feeling 'I Am Not A Kid Anymore'

With the adolescents age the feeling of ' I am not a kid anymore' has been experienced by adolescents. Interactions are not making any significant impact.

6.1.21.3 No One Understands Me

Table 6.1.21.3 Interaction Vs. feeling 'No One Understands Me'									
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
No One Understands Me	Never	Count	722	397	10	7	935	180	5	1
		Col %	30.3	31.0	25.0	50.0	30.2	32.1	41.7	50.0
	Sometimes	Count	1122	602	20	4	1473	253	6	1
		Col %	47.1	47.0	50.0	28.6	47.6	45.1	50.0	50.0
	Frequently	Count	367	185	7	2	464	88		
		Col %	15.4	14.5	17.5	14.3	15.0	15.7		
	Always	Count	169	96	3	1	224	40	1	
		Col %	7.1	7.5	7.5	7.1	7.2	7.1	8.3	
Total	Count		2380	1280	40	14	3096	561	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

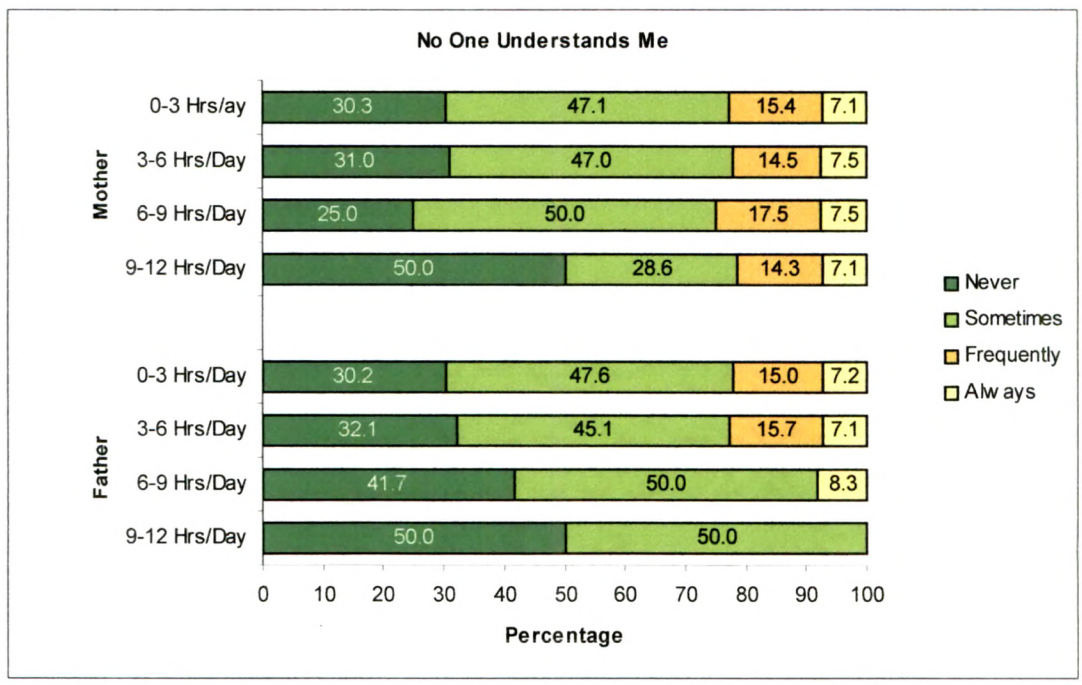


Chart 6.1.21.3 Interaction Vs. feeling 'No One Understands Me'

The feeling of 'No one understands me' has improved compare to other feelings with increased interactions.

6.1.21.4 Why, Always It Happens To Me?

Table 6.1.21.4 Interaction Vs. feeling 'Why, Always It Happens To Me?'										
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
Why, Always It Happens To Me?	Never	Count	426	182	4	3	514	92	2	
		Col %	17.9	14.2	10.0	21.4	16.6	16.4	16.7	
	Sometimes	Count	1038	590	15	5	1363	268	6	
		Col %	43.6	46.1	37.5	35.7	44.0	47.9	50.0	
	Frequently	Count	566	305	10	4	753	115	4	1
		Col %	23.8	23.8	25.0	28.6	24.3	20.5	33.3	50.0
	Always	Count	352	202	11	2	468	85		1
		Col %	14.8	15.8	27.5	14.3	15.1	15.2		50.0
Total	Count		2382	1279	40	14	3098	560	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

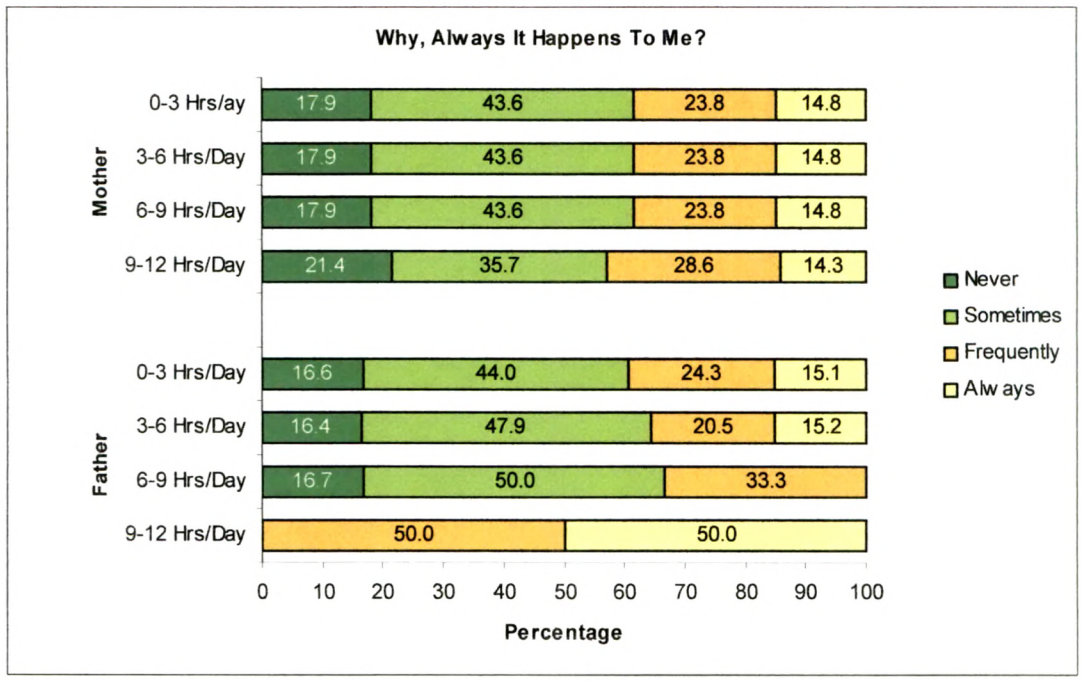


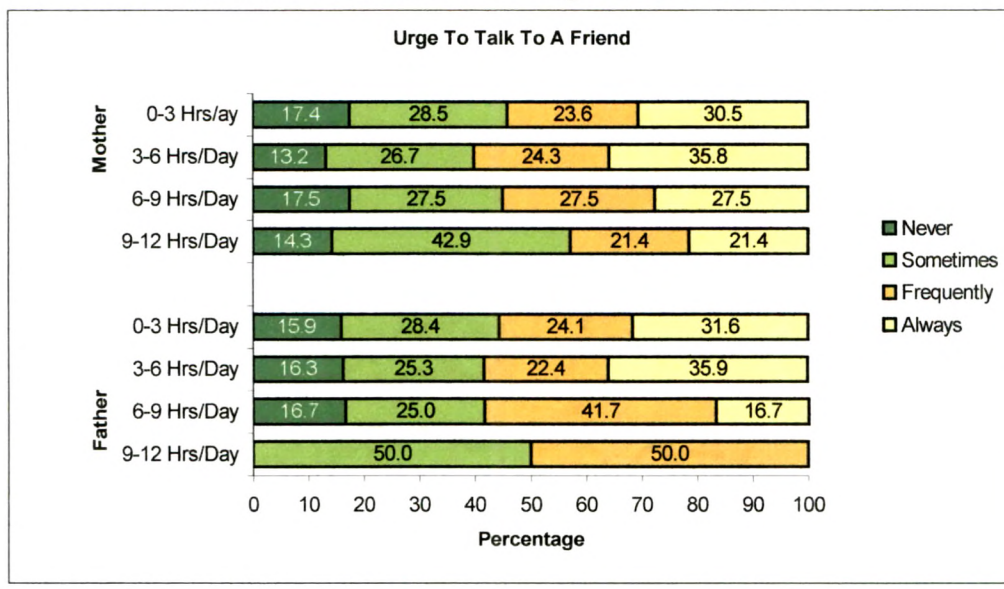
Chart 6.1.21.4 Interaction Vs. feeling 'Why, Always It Happens To Me?'

The feeling of ' Why. Always it happens to me?' remain irrelevant with respect to interactions with mother and father.

6.1.21.5 Urge To Talk To A Friend

Table 6.1.21.5 Interaction Vs. ' Urge To Talk To A Friend'									
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
Urge To Talk To A Friend	Never	Count	415	168	7	2	493	91	2	
		Col %	17.4	13.2	17.5	14.3	15.9	16.3	16.7	
	Sometimes	Count	679	341	11	6	879	141	3	1
		Col %	28.5	26.7	27.5	42.9	28.4	25.3	25.0	50.0
	Frequently	Count	561	310	11	3	745	125	5	1
		Col %	23.6	24.3	27.5	21.4	24.1	22.4	41.7	50.0
	Always	Count	726	457	11	3	980	200	2	
		Col %	30.5	35.8	27.5	21.4	31.6	35.9	16.7	
Total	Count		2381	1276	40	14	3097	557	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Chart 6.1.21.5 Interaction Vs. ' Urge To Talk To A Friend'



No significant relation seen with increased interactions and feeling of ' Urge to talk to a friend'. Adolescents are experiencing that they get urge to talk to friend more often than they were kid.

6.1.21.6 Discuss Personal Matters

Table 6.1.21.6 Interaction Vs. feeling to 'Discuss Personal Matters'										
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
Discuss Personal Matters	Never	Count	343	154	3	1	432	62	2	1
		Col %	14.4	12.1	7.5	7.1	14.0	11.1	16.7	50.0
	Sometimes	Count	905	498	15	2	1177	221	4	
		Col %	38.1	39.1	37.5	14.3	38.1	39.5	33.3	
	Frequently	Count	589	340	10	3	782	142	2	1
		Col %	24.8	26.7	25.0	21.4	25.3	25.4	16.7	50.0
	Always	Count	540	283	12	8	699	134	4	
		Col %	22.7	22.2	30.0	57.1	22.6	24.0	33.3	
Total	Count		2377	1275	40	14	3090	559	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

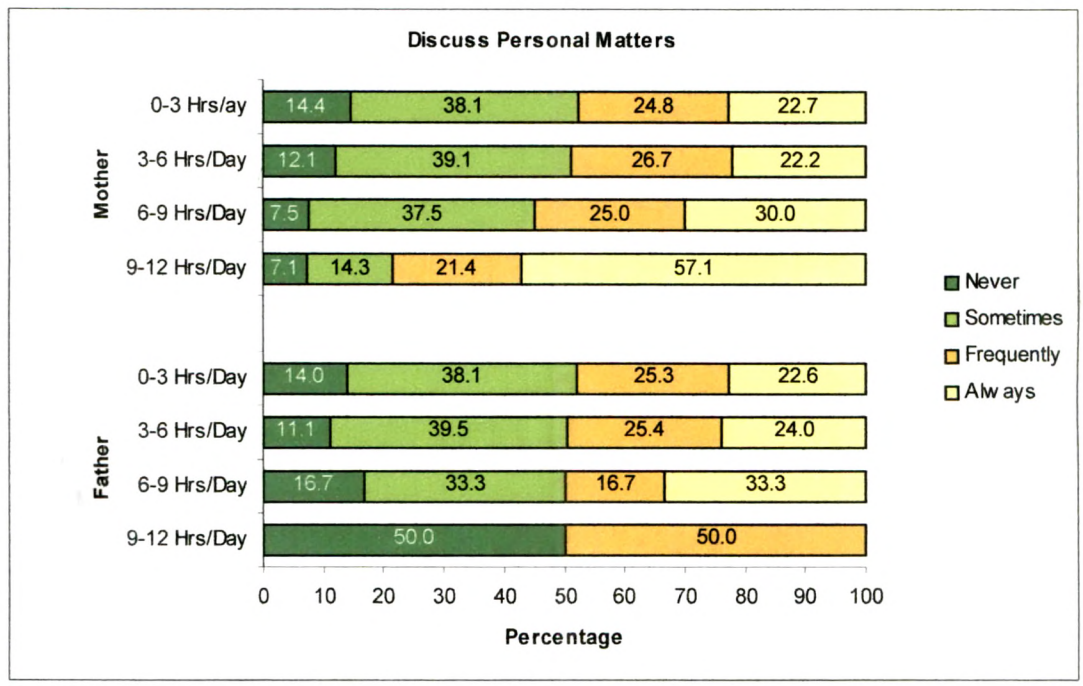


Chart 6.1.21.6 Interaction Vs. feeling to 'Discuss Personal Matters'

Adolescents are experiencing the feeling to discuss their personal matters more.

6.1.21.7 Irritated & Annoyed

Table 6.1.21.7 Interaction Vs. feeling of 'Irritated & Annoyed'									
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
Irritated & Annoyed	Never	Count	623	310	12	4	779	150	2	1
		Col %	26.2	24.4	30.0	28.6	25.2	26.8	16.7	50.0
	Sometimes	Count	1199	648	20	9	1559	286	9	1
		Col %	50.4	51.0	50.0	64.3	50.5	51.2	75.0	50.0
	Frequently	Count	379	221	7		520	83	1	
		Col %	15.9	17.4	17.5		16.9	14.8	8.3	
	Always	Count	176	92	1	1	228	40		
		Col %	7.4	7.2	2.5	7.1	7.4	7.2		
Total	Count		2377	1271	40	14	3086	559	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

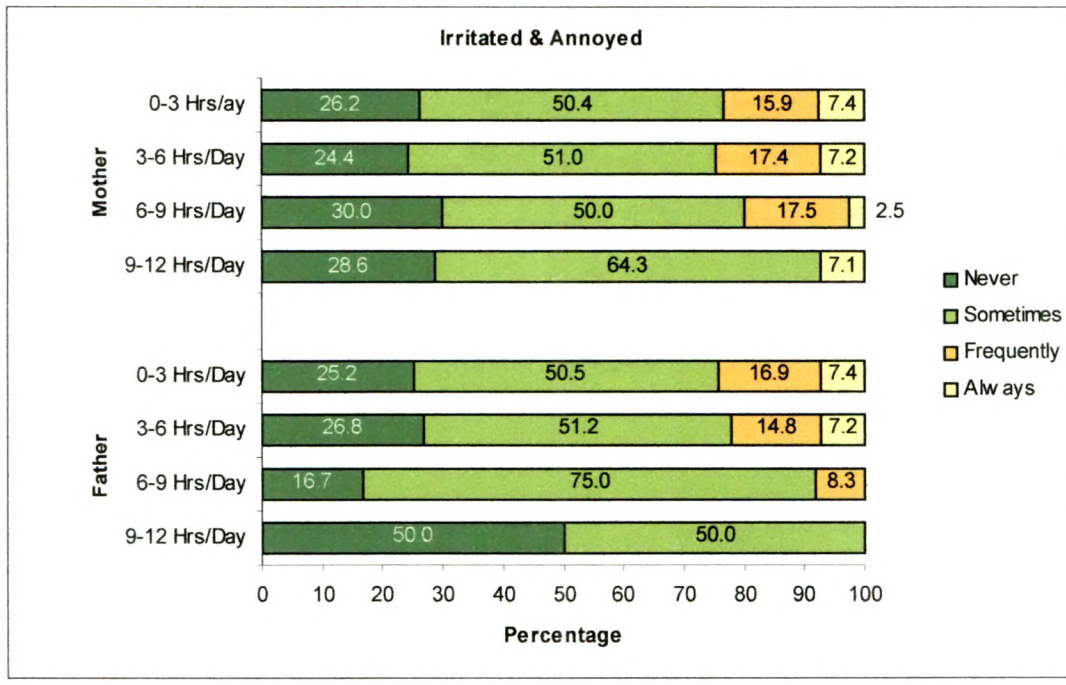


Chart 6.1.21.7 Interaction Vs. feeling of 'Irritated & Annoyed'

The feeling of irritated and annoyed on trivial matters is noticed by adolescents.

6.1.21.8 Need Privacy & Independence

Table 6.1.21.8 Interaction Vs. felling for 'Privacy & Independence'										
			Average Hour/Day Interacting With Mother				Average Hour/Day Interacting With Father			
			0-3 Hrs/ay	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day	0-3 Hrs/Day	3-6 Hrs/Day	6-9 Hrs/Day	9-12 Hrs/Day
Need Privacy & Independence	Never	Count	603	307	9	4	758	149	1	1
		Col %	25.4	24.2	22.5	28.6	24.6	26.8	8.3	50.0
	Sometimes	Count	799	416	12	7	1023	188	6	
		Col %	33.7	32.8	30.0	50.0	33.2	33.9	50.0	
	Frequently	Count	499	287	10	3	670	116	4	1
		Col %	21.0	22.7	25.0	21.4	21.7	20.9	33.3	50.0
	Always	Count	470	257	9		630	102	1	
		Col %	19.8	20.3	22.5		20.4	18.4	8.3	
Total	Count		2371	1267	40	14	3081	555	12	2
	Col %		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

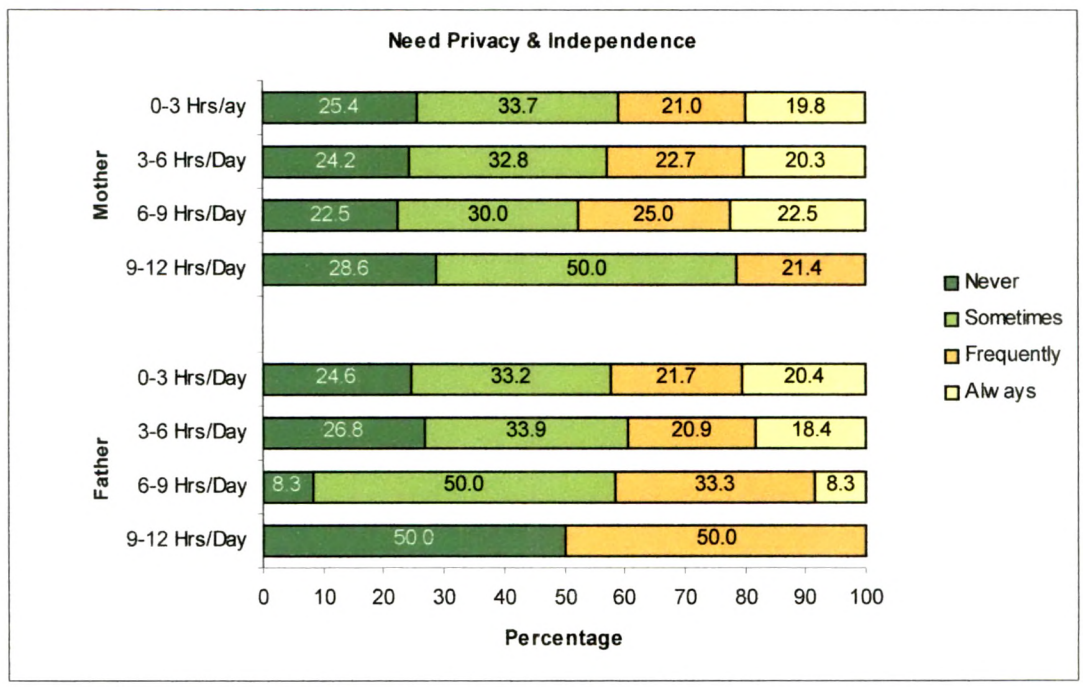


Chart 6.1.21.8 Interaction Vs. felling for 'Privacy & Independence'

Privacy and independence is sought during adolescence.

Also it is seen in most of the above cases, that interaction of father for more than 9 to 12 hours responses were showing abnormality with other responses.

Table 6.1.21.9 Feelings Vs. Interaction of parents and adolescents			
Feelings		**Average Hour/Day *Interacting***	
		Mother	**Father**
Loneliness Among People	chi-square statistic	3.813	8.606
	p-value	0.923	0.474
I Am Not A Kid Anymore	chi-square statistic	8.753	10.326
	p-value	0.460	0.325
No One Understands Me	chi-square statistic	4.215	4.394
	p-value	0.897	0.884
Why, Always It Happens To Me?	chi-square statistic	14.547	10.288
	p-value	0.104	0.328
Urge To Talk To A Friend	chi-square statistic	20.173	9.254
	p-value	**0.017**	0.414
Discuss Personal Matters	chi-square statistic	16.878	8.371
	p-value	**0.051**	0.497
Irritated & Annoyed	chi-square statistic	6.673	5.863
	p-value	0.671	0.754
Need Privacy & Independence	chi-square statistic	6.336	8.466
	p-value	0.706	0.488

Since, p-value of chi-square test of independence between feelings and average interaction time with mother as well with father is greater than 0.05 (level of significance),except for feeling like Urge to talk to a friend and for discuss personal matter, shows the independence between the frequency of feelings and interaction time with mother and father.

Remark:

Since, p-value of chi-square test of independence for frequency to discuss personal matter and average interaction time with mother is less than 0.05(level of significance) indicates that these to events are not independent. Also, the same result is found in case of frequency to urge to talk to a friend and interaction time with mother.

6.1.22 Q-S-P : Importance of personality development

The respondents were asked to rate the importance of personality development with respect to few occasions on 6 points ordinal scale.

6.1.22.1 How much important is personality development to Make Friends?

Table 6.1.22.1 How much important is personality development to Make Friends?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	41	1.0	1.1	1.1
	Less	53	1.3	1.4	2.4
	Average	247	6.2	6.3	8.7
	Important	678	16.9	17.4	26.1
	Very Important	1043	26.0	26.7	52.8
	Very Very Important	1840	45.9	47.2	100.0
	Total	3902	97.4	100.0	
Missing	System	105	2.6		
Total		4007	100.0		

Cumulative 91.3 % of respondents viewed that personality development is important to make friends.

6.1.22.2 How much important is personality development to Win Competition?

Table 6.1.22.2 How much important is personality development to Win Competition?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	46	1.1	1.2	1.2
	Less	92	2.3	2.4	3.6
	Average	368	9.2	9.5	13.1
	Important	882	22.0	22.8	35.9
	Very Important	1052	26.3	27.2	63.1
	Very Very Important	1429	35.7	36.9	100.0
	Total	3869	96.6	100.0	
Missing	System	138	3.4		
Total		4007	100.0		

Cumulative 86.9 % of respondents viewed that personality development is important to win competition.

6.1.22.3 How much important is personality development to Impress Others?

Table 6.1.22.3 How much important is personality development to Impress Others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	83	2.1	2.1	2.1
	Less	174	4.3	4.5	6.6
	Average	463	11.6	12.0	18.6
	Important	839	20.9	21.7	40.3
	Very Important	1011	25.2	26.2	66.5
	Very Very Important	1295	32.3	33.5	100.0
	Total	3865	96.5	100.0	
Missing	System	142	3.5		
Total		*4007*	*100.0*		

Cumulative 81.4 % of respondents viewed that personality development is important and above to impress others.

6.1.22.4 How much important is personality development to Convince Others?

Table 6.1.22.4 How much important is personality development to Convince Others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	49	1.2	1.3	1.3
	Less	138	3.4	3.6	4.8
	Average	459	11.5	11.9	16.7
	Important	992	24.8	25.7	42.4
	Very Important	1202	30.0	31.1	73.5
	Very Very Important	1024	25.6	26.5	100.0
	Total	3864	96.4	100.0	
Missing	System	143	3.6		
Total		*4007*	*100.0*		

Cumulative 83.3 % of respondents viewed that personality development is important and above to convince others.

6.1.22.5 How much important is personality development for Admission Interview?

Table 6.1.22.5 How much important is personality development for Admission Interview?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	54	1.3	1.4	1.4
	Less	92	2.3	2.4	3.8
	Average	273	6.8	7.1	10.8
	Important	651	16.2	16.8	27.7
	Very Important	1032	25.8	26.7	54.4
	Very Very Important	1763	44.0	45.6	100.0
	Total	3865	96.5	100.0	
Missing	System	142	3.5		
Total		4007	100.0		

Cumulative 89.2 % of respondents viewed that personality development is important and above for admission interview.

6.1.22.6 How much important is personality development for Job Interview?

Table 6.1.22.6 How much important is personality development for Job Interview?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	64	1.6	1.7	1.7
	Less	81	2.0	2.1	3.8
	Average	217	5.4	5.6	9.4
	Important	550	13.7	14.2	23.6
	Very Important	891	22.2	23.1	46.7
	Very Very Important	2057	51.3	53.3	100.0
	Total	3860	96.3	100.0	
Missing	System	147	3.7		
Total		4007	100.0		

Cumulative 90.6 % of respondents viewed that personality development is important and above for job interview.

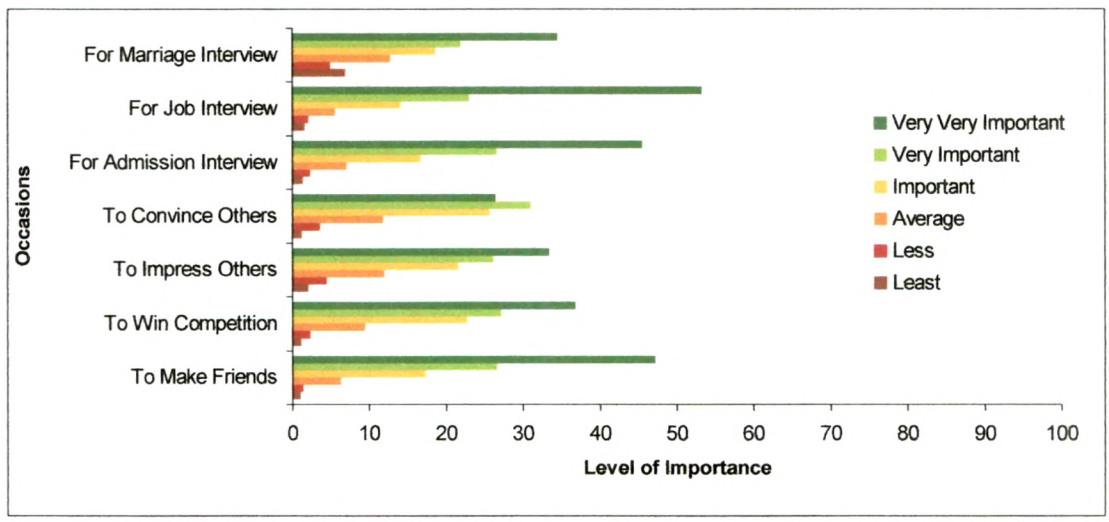
6.1.22.7 How much important is personality development for Marriage Interview?

Table 6.1.22.7 How much important is personality development for Marriage Interview?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Least	270	6.7	7.0	7.0
	Less	191	4.8	5.0	12.0
	Average	494	12.3	12.8	24.8
	Important	719	17.9	18.7	43.5
	Very Important	847	21.1	22.0	65.4
	Very Very Important	1331	33.2	34.6	100.0
	Total	3852	96.1	100.0	
Missing	System	155	3.9		
Total		4007	100.0		

24.8 % responded that personality development is average or less important for marriage interview in future. 33.2 % responded that personality is very very important for marriage interview, while 21.1 % replied in very important category and 17.9 % replied in important category.

Chart 6.1.22 How much important is personality development in life?



Personality development is important for job and to make friends as responded by the adolescents. But overall they feel the need for good personality development.

6.1.23.Q-S-Q : Comfort level with puberty changes

Respondents were asked to answer that they comfortable or uncomfortable with all these puberty changes.

Table 6.1.23 How is the feeling with Puberty Changes?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Comfortable	2725	68.0	70.4	70.4
	Uncomfortable	1145	28.6	29.6	100.0
	Total	3870	96.6	100.0	
Missing	System	137	3.4		
Total		4007	100.0		

Majority of adolescent boys and girls felt comfortable with puberty changes. Only 28.6 % were uncomfortable with all these puberty changes in their life.

Chi-square Statistic:

The chi-square statistic is computed by summing the squared deviations [observed value (fo) minus expected value (fe)] divided by the expected value for each cell:

$$\chi^2 = \sum \left[\frac{(f_o - f_e)^2}{f_e} \right]$$

If there is a large discrepancy between the observed values and the expected values, the χ^2 statistics would be large, suggesting a significant difference between observed and expected values. Along with this statistic, a probability value is computed. With $p<0.05$, it is commonly accepted that the observed values differ significantly from the expected values and that the two variables are not independent of each other.

Remark: A chi-square value is largely dependent on the number of dimensions and sample size, and thus comparisons of one chi-square value with another are often misleading. To

control for this difficulty, Pearson suggested the phi (□) statistic, which divides the chi-square value by N and then takes the positive square root of the result. The purpose was to standardize a measure of association to values between 0 and 1 (with 0 indicating completely independent variable and value close to 1 indicating a strong association between variables). However, if one of the dimensions of the cross tabulation is larger than 2, □ may attain a value larger than 1.0. To control for this, Cramer's V was introduce (the positive square root of $□^2/[N(k-1)]$, where k is the smaller of the number of rows and columns). This measure does vary between 0 and 1.0 and is a commonly used measure of the strength of association between variables in a chi-square analysis.

6.1.23.1 Crosstabs for Boys on puberty changes and knowledge of products

6.1.23.1.1.Boys' Feeling with Puberty Changes * Blade/Razor(Shaving)

Table 6.1.23.1.1 Boys' Feeling with Puberty Changes * Blade/Razor(Shaving)

Feeling With Puberty Changes		Blade/Razor(Shaving)			Total
		Very Less	Average	Complete	
Comfortable	Count	718	574	319	1611
	% within Feeling With Puberty Changes	44.6%	35.6%	19.8%	100.0%
	% within Blade/Razor(Shaving)	70.7%	80.6%	81.6%	76.0%
Uncomfortable	Count	298	138	72	508
	% within Feeling With Puberty Changes	58.7%	27.2%	14.2%	100.0%
	% within Blade/Razor(Shaving)	29.3%	19.4%	18.4%	24.0%
Total	Count	1016	712	391	2119
	% within Feeling With Puberty Changes	47.9%	33.6%	18.5%	100.0%
	% within Blade/Razor(Shaving)	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	P-value
Pearson Chi-Square	30.864(a)	2	.000
Phi	.121		.000
Cramer's V	.121		.000
N of Valid Cases	2119		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 93.74.			

Hypothesis:

H0: Knowledge about Blade/Razor (Shaving) and feeling with puberty changes are independent.

H1: Knowledge about Blade/Razor (Shaving) and feeling with puberty changes are dependent.

Result:

Since, p-value <0.05, there is sufficient evidence against H0 to reject it at 5 % level of significance. Thus, Knowledge about Blade/Razor (Shaving) and feeling with puberty changes are dependent. Moreover, since p-value is very close to 0, shows strong association between Knowledge about Blade/Razor (Shaving) and feeling with puberty changes.

6.1.23.1.2 Boys' Feeling With Puberty Changes * Pimple Cream

Table 6.1.23.1.2 Boys' Feeling With Puberty Changes * Pimple Cream					
Feeling With Puberty Changes		Pimple Cream			Total
		Very Less	Average	Complete	
Comfortable	Count	858	506	234	1598
	% within Feeling With Puberty Changes	53.7%	31.7%	14.6%	100.0%
	% within Pimple Cream	74.5%	75.5%	83.3%	76.0%
Uncomfortable	Count	294	164	47	505
	% within Feeling With Puberty Changes	58.2%	32.5%	9.3%	100.0%
	% within Pimple Cream	25.5%	24.5%	16.7%	24.0%
Total	Count	1152	670	281	2103
	% within Feeling With Puberty Changes	54.8%	31.9%	13.4%	100.0%
	% within Pimple Cream	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	9.692(a)	2	.008
Phi	.121		.000
Cramer's V	.121		.000
N of Valid Cases	2119		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 67.48.			

Hypothesis:

H0: Knowledge about pimple cream and feeling with puberty changes are independent.

H1: Knowledge about pimple cream and feeling with puberty changes are dependent.

Result:

Since, p-value <0.05, there is sufficient evidence against H0 to reject it at 5 % level of significance. Thus, Knowledge about pimple cream and feeling with puberty changes are dependent. Moreover, since p-value is very close to 0, shows strong association between Knowledge about pimple cream and feeling with puberty changes.

6.1.23.1.3. Boys' Feeling With Puberty Changes * Height Booster

Table 6.1.23.1.3 Boys' Feeling With Puberty Changes * Height Booster					
Feeling With Puberty Changes		Height Booster			Total
		Very Less	Average	Complete	
Comfortable	Count	487	672	439	1598
	% within Feeling With Puberty Changes	30.5%	42.1%	27.5%	100.0%
	% within Height Booster	71.4%	79.3%	76.3%	76.0%
Uncomfortable	Count	195	175	136	506
	% within Feeling With Puberty Changes	38.5%	34.6%	26.9%	100.0%
	% within Height Booster	28.6%	20.7%	23.7%	24.0%
Total	Count	682	847	575	2104
	% within Feeling With Puberty Changes	32.4%	40.3%	27.3%	100.0%
	% within Height Booster	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	13.079(a)	2	.001
Phi	.121		.000
Cramer's V	.121		.000
N of Valid Cases	2119		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 138.28.			

Hypothesis:

H0: Knowledge about Height Booster and feeling with puberty changes are independent.

H1: Knowledge about Height Booster and feeling with puberty changes are dependent.

Result:

Since, p-value <0.05, there is sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Height Booster and feeling with puberty changes are dependent. Moreover, since p-value is very close to 0, shows strong association between Knowledge about Height Booster and feeling with puberty changes.

6.1.23.1.4. Boys' Feeling With Puberty Changes * Trimming Tiny Scissors

Table 6.1.23.1.4 Boys' Feeling With Puberty Changes * Trimming Tiny Scissors					
Feeling With Puberty Changes		Trimming Tiny Scissors			Total
		Very Less	Average	Complete	
Comfortable	Count	901	482	196	1579
	% within Feeling With Puberty Changes	57.1%	30.5%	12.4%	100.0%
	% within Trimming Tiny Scissors	73.0%	79.9%	82.0%	76.0%
Uncomfortable	Count	334	121	43	498
	% within Feeling With Puberty Changes	67.1%	24.3%	8.6%	100.0%
	% within Trimming Tiny Scissors	27.0%	20.1%	18.0%	24.0%
Total	Count	1235	603	239	2077
	% within Feeling With Puberty Changes	59.5%	29.0%	11.5%	100.0%
	% within Trimming Tiny Scissors	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	16.132(a)	2	.000
Phi	.088		.000
Cramer's V	.088		.000
N of Valid Cases	2077		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 57.30.			

Hypothesis:

H0: Knowledge about Trimming Tiny Scissors and feeling with puberty changes are independent.

H1: Knowledge about Trimming Tiny Scissors and feeling with puberty changes are dependent.

Result:

Since, p-value <0.05, there is sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Trimming Tiny Scissors and feeling with puberty

changes are dependent. Moreover, since p-value is very close to 0, shows strong association between Knowledge about Trimming Tiny Scissors and feeling with puberty changes.

6.1.23.2 Crosstabs for Girls on puberty changes and knowledge of products

6.1.23.2.1. Girls' Feeling With Puberty Changes * Blade/Razor(Shaving)

Table 6.1.23.2.1 Girls' Feeling With Puberty Changes * Blade/Razor(Shaving)

Feeling With Puberty Changes		Blade/Razor(Shaving)			Total
		Very Less	Average	Complete	
Comfortable	Count	633	277	116	1026
	% within Feeling With Puberty Changes	61.7%	27.0%	11.3%	100.0%
	% within Blade/Razor(Shaving)	64.9%	61.7%	63.0%	63.8%
Uncomfortable	Count	342	172	68	582
	% within Feeling With Puberty Changes	58.8%	29.6%	11.7%	100.0%
	% within Blade/Razor(Shaving)	35.1%	38.3%	37.0%	36.2%
Total	Count	975	449	184	1608
	% within Feeling With Puberty Changes	60.6%	27.9%	11.4%	100.0%
	% within Blade/Razor(Shaving)	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	1.442(a)	2	.486
Phi	.030		.486
Cramer's V	.030		.486
N of Valid Cases	1608		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 66.60.			

Hypothesis:

H0: Knowledge about Blade/Razor(Shaving) and feeling with puberty changes are independent.

H1: Knowledge about Blade/Razor(Shaving) and feeling with puberty changes are dependent.

Result:

Since, p-value >0.05, there is no sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Blade/Razor(Shaving) and feeling with puberty changes are independent.

6.1.23.2.2 Girls' Feeling With Puberty Changes * Pimple Cream

Table 6.1.23.2.2 Girls' Feeling With Puberty Changes * Pimple Cream

Feeling With Puberty Changes		Pimple Cream			Total
		Very Less	Average	Complete	
Comfortable	Count	490	366	181	1037
	% within Feeling With Puberty Changes	47.3%	35.3%	17.5%	100.0%
	% within Pimple Cream	63.5%	64.7%	63.5%	63.9%
Uncomfortable	Count	282	200	104	586
	% within Feeling With Puberty Changes	48.1%	34.1%	17.7%	100.0%
	% within Pimple Cream	36.5%	35.3%	36.5%	36.1%
Total	Count	772	566	285	1623
	% within Feeling With Puberty Changes	47.6%	34.9%	17.6%	100.0%
	% within Pimple Cream	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	.224(a)	2	.894
Phi	.012		.894
Cramer's V	.012		.894
N of Valid Cases	1623		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 102.90.

Hypothesis:

H0: Knowledge about Pimple Cream and feeling with puberty changes are independent.

H1: Knowledge about Pimple Cream and feeling with puberty changes are dependent.

Result:

Since, p-value >0.05, there is no sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Pimple Cream and feeling with puberty changes are independent.

6.1.23.2.3. Girls' Feeling With Puberty Changes * Height Booster

Table 6.1.23.2.3 Girls' Feeling With Puberty Changes * Height Booster

Feeling With Puberty Changes		Height Booster			Total
		Very Less	Average	Complete	
Comfortable	Count	397	402	210	1009
	% within Feeling With Puberty Changes	39.3%	39.8%	20.8%	100.0%
	% within Height Booster	65.2%	61.2%	65.8%	63.7%
Uncomfortable	Count	212	255	109	576
	% within Feeling With Puberty Changes	36.8%	44.3%	18.9%	100.0%
	% within Height Booster	34.8%	38.8%	34.2%	36.3%
Total	Count	609	657	319	1585
	% within Feeling With Puberty Changes	38.4%	41.5%	20.1%	100.0%
	% within Height Booster	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	3.002(a)	2	.223
Phi	.044		.223
Cramer's V	.044		.223
N of Valid Cases	1585		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 115.93.

Hypothesis:

H0: Knowledge about Height Booster and feeling with puberty changes are independent.

H1: Knowledge about Height Booster and feeling with puberty changes are dependent.

Result:

Since, p-value >0.05, there is no sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Height Booster and feeling with puberty changes are independent.

6.1.23.2.4 Girls' Feeling With Puberty Changes * Trimming Tiny Scissors

Table 6.1.23.2.4 Girls Feeling With Puberty Changes * Trimming Tiny Scissors

Feeling With Puberty Changes		Trimming Tiny Scissors			Total
		Very Less	Average	Complete	
Comfortable	Count	635	258	96	989
	% within Feeling With Puberty Changes	64.2%	26.1%	9.7%	100.0%
	% within Trimming Tiny Scissors	65.1%	61.0%	63.6%	63.8%
Uncomfortable	Count	340	165	55	560
	% within Feeling With Puberty Changes	60.7%	29.5%	9.8%	100.0%
	% within Trimming Tiny Scissors	34.9%	39.0%	36.4%	36.2%
Total	Count	975	423	151	1549
	% within Feeling With Puberty Changes	62.9%	27.3%	9.7%	100.0%
	% within Trimming Tiny Scissors	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	2.191(a)	2	.334
Phi	.038		.334
Cramer's V	.038		.334
N of Valid Cases	1549		
a 0 cells (.0%) have expected count less than 5. The minimum expected count is 54.59.			

Hypothesis:

H0: Knowledge about Trimming Tiny Scissors and feeling with puberty changes are independent.

H1: Knowledge about Trimming Tiny Scissors and feeling with puberty changes are dependent.

Result:

Since, p-value >0.05, there is no sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Trimming Tiny Scissors and feeling with puberty changes are independent.

6.1.23.2. 5. Girls' Feeling With Puberty Changes * Brassiere/Bra

Table 6.1.23.5 Girls' Feeling With Puberty Changes * Brassiere/Bra

Feeling With Puberty Changes		Brassiere/Bra			Total
		Very Less	Average	Complete	
Comfortable	Count	290	271	427	988
	% within Feeling With Puberty Changes	29.4%	27.4%	43.2%	100.0%
	% within Brassiere/Bra	61.3%	59.8%	68.3%	63.7%
Uncomfortable	Count	183	182	198	563
	% within Feeling With Puberty Changes	32.5%	32.3%	35.2%	100.0%
	% within Brassiere/Bra	38.7%	40.2%	31.7%	36.3%
Total	Count	473	453	625	1551
	% within Feeling With Puberty Changes	30.5%	29.2%	40.3%	100.0%
	% within Brassiere/Bra	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	9.881(a)	2	.007
Phi	.080		.007
Cramer's V	.080		.007
N of Valid Cases	1551		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 164.44.

Hypothesis:

H0: Knowledge about Brassiere/Bra and feeling with puberty changes are independent.

H1: Knowledge about Brassiere/Bra and feeling with puberty changes are dependent.

Result:

Since, p-value <0.05, there is sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Brassiere/Bra and feeling with puberty changes are dependent. Moreover, since p-value is very close to 0, shows strong association between Knowledge about Brassiere/Bra and feeling with puberty changes.

6.1.23.2.6. Girls' Feeling With Puberty Changes * Washable Pad

Table 6.1.23.6 Girls' Feeling With Puberty Changes * Washable Pad

Feeling With Puberty Changes		Washable Pad			Total
		Very Less	Average	Complete	
Comfortable	Count	330	258	391	979
	% within Feeling With Puberty Changes	33.7%	26.4%	39.9%	100.0%
	% within Washable Pad	62.5%	69.2%	60.9%	63.4%
Uncomfortable	Count	198	115	251	564
	% within Feeling With Puberty Changes	35.1%	20.4%	44.5%	100.0%
	% within Washable Pad	37.5%	30.8%	39.1%	36.6%
Total	Count	528	373	642	1543
	% within Feeling With Puberty Changes	34.2%	24.2%	41.6%	100.0%
	% within Washable Pad	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	p-value
Pearson Chi-Square	7.261(a)	2	.027
Phi	.069		.027
Cramer's V	.069		.027
N of Valid Cases	1543		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 136.34.

Hypothesis:

H0: Knowledge about Washable Pad and feeling with puberty changes are independent.

H1: Knowledge about Washable Pad and feeling with puberty changes are dependent.

Result:
Since, p-value <0.05, there is sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Washable Pad and feeling with puberty changes are dependent. Moreover, since p-value is very close to 0, shows strong association between Knowledge about Washable Pad and feeling with puberty changes.

6.1.23.2.7 Girls' Feeling With Puberty Changes * Sanitary Napkin

Table 6.1.23.7 Girls Feeling With Puberty Changes * Sanitary Napkin

Feeling With Puberty Changes		Sanitary Napkin			Total
		Very Less	Average	Complete	
Comfortable	Count	271	251	455	977
	% within Feeling With Puberty Changes	27.7%	25.7%	46.6%	100.0%
	% within Sanitary Napkin	63.8%	61.5%	64.3%	63.4%
Uncomfortable	Count	154	157	253	564
	% within Feeling With Puberty Changes	27.3%	27.8%	44.9%	100.0%
	% within Sanitary Napkin	36.2%	38.5%	35.7%	36.6%
Total	Count	425	408	708	1541
	% within Feeling With Puberty Changes	27.6%	26.5%	45.9%	100.0%
	% within Sanitary Napkin	100.0%	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	p-value
Pearson Chi-Square	.875(a)	2	.646
Phi	.024		.646
Cramer's V	.024		.646
N of Valid Cases	1541		

a 0 cells (.0%) have expected count less than 5. The minimum expected count is 149.33.

Hypothesis:

H0: Knowledge about Sanitary Napkin and feeling with puberty changes are independent.

H1: Knowledge about Sanitary Napkin and feeling with puberty changes are dependent.

Result:

Since, p-value >0.05, there is no sufficient evidence against H0 to reject it at 5% level of significance. Thus, Knowledge about Sanitary Napkin and feeling with puberty changes are independent.

6.1.24. Q-S-R : Most suitable age period for personality development

Table 6.1.24 Most Suitable Age Period for Personality Development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7-10 Years	112	2.8	2.9	2.9
	11-14 Years	2696	67.3	69.3	72.2
	15-18 Years	894	22.3	23.0	95.2
	19-22 Years	163	4.1	4.2	99.4
	23-26 Years	25	.6	.6	100.0
	Total	3890	97.1	100.0	
Missing	System	117	2.9		
Total		4007	100.0		

The adolescents believe that personality development should take place in the age group of 11-14 years. 67.3 % responded in favor of 11-14 years of age group and 22.3 % favored 15-18 years of age group for personality development. The adolescent can learn life skills during their early adolescent period.

6.2 Data analysis of parents' questionnaires

The role of parents in development of adolescents is very important. Many times adolescents see parents as their role model. The sensitive subject concerning puberty changes needs help from parents to generate awareness. Seven hundreds and seventy four parents of adolescent who had responded to our two page structured questionnaire. 403 parents had teenage daughter studying in school and 371 parents had teenage son studying in the school. All adolescents were studying in co-educational schools in English medium in the city of Vadodara.

The father's profession responded that 32.1 % were businessperson, 37.3 % were in government services and 30.6 % were in private sector service. 62 % of fathers were graduates, while 19.7 % had education up to matriculation. 16.3 % were postgraduate and 2.1 % were doctorate.

The majority of 82.3 % mothers were housewife. 8.5 % of mothers were in Government service and 5.2 % in private service, while 4.1 % were having their own business. The mother's education distribution was 42.1 % matriculate, 46.1 % graduate, 10.4 % postgraduate and 1.5 % doctorate.

38.6 % of parents observed that their behavior had changed with adolescent compare to when they were child. 19 % of parents had only single child. 56 % of parents had boy as second child and 48 % of parents had girl as second child.

6.2.1.Q-P-F : Cumulative monthly income of Father and Mother

The father and mother cumulative gross income distribution was as under:

Table 6.2.1 Father and Mother cumulative income			
Monthly Gross Income (Rs.)	Frequency	Percent	Cumulative Percent
< 5000	75	9.9	9.9
5000 - 10000	327	43.3	53.2
10000 - 25000	287	38.0	91.1
25000 - 50000	52	6.9	98.0
> 50000	15	2.0	100.0
Total	756	100.0	
Missing System	18		
Grand Total	774		

The majority of parents were in middle and upper middle class having 43.3 % parents in Rs.5000 to Rs. 10,000 monthly income group and 38 % in Rs. 10000 to Rs.25000 monthly income group.

6.2.2.Q-P-G : Importance of attributes for personality development

Eleven attributes were identified for response from parents on its importance with respect to personality development of their adolescent son/daughter. They were asked to respond on 3 options: Less important, important and very important. The frequency distribution was as under:

Table 6.2.2 Importance of attributes for personality development					
		Less Important	Important	Very Important	Total
Memory Power	Count	13	250	504	767
	%	1.7	32.6	65.7	100.0
Listening Skills	Count	52	352	362	766

	%	6.8	46.0	47.3	100.0
Expertise in One Art	Count	136	421	210	767
	%	17.7	54.9	27.4	100.0
Regular Exercise	Count	71	357	338	766
	%	9.3	46.6	44.1	100.0
Balance Diet	Count	44	279	443	766
	%	5.7	36.4	57.8	100.0
Public Speaking	Count	89	353	325	767
	%	11.6	46.0	42.4	100.0
Group Discussion	Count	79	376	310	765
	%	10.3	49.2	40.5	100.0
Expertise in One Sport	Count	140	396	230	766
	%	18.3	51.7	30.0	100.0
Reading Habits	Count	37	289	439	765
	%	4.8	37.8	57.4	100.0
Positive Attitude	Count	32	193	541	766
	%	4.2	25.2	70.6	100.0
Self Confidence	Count	13	98	655	766
	%	1.7	12.8	85.5	100.0

6.2.2.1 Factor Analysis for personality development attributes

KMO Test: A measure of whether distribution of values is adequate for conducting factor analysis. Measure Levels: A measure >0.9 is marvelous, >0.8 is meritorious, >0.7 is middling, >0.6 is mediocre, >0.5 is miserable, and <0.5 is unacceptable.

Bartlett's Test: This is a measure of the multivariate normality of set of distribution. It also tests whether the correlation matrix is an identity matrix. A significant value <0.5 indicates

that these data do not produce an identity matrix (or "differ significantly from identity") and are thus approximately multivariate normal and acceptable for factor analysis.

Note: Correlation matrix is not an identity matrix and is approximately multivariate normal is assumption/ requirement of factor analysis.

Table 6.2.2.1 Factor Analysis for personality development attributes

Table 6.2.2.1A KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.758
Bartlett's Test of Sphericity	Approx. Chi-Square	991.867
	df	55
	Sig.	.000

Test Result: KMO test shows data set is middling for applying factor analysis. Also, according to Bartlett's test our data set is approximately multivariate normal and acceptable analysis for factor

Table 6.2.2.1B Communalities

	Initial	*Extraction*
Memory Power	*1.000*	*.346*
Listening Skills	1.000	.438
Expertise in One Art	1.000	.547
Regular Exercise	1.000	.633
Balance Diet	1.000	.471
Public Speaking	1.000	.498
Group Discussion	1.000	.564
Expertise in One Sport	*1.000*	*.615*
Reading Habits	1.000	.266
Positive Attitude	1.000	.476
Self Confidence	1.000	.397

Extraction Method: Principal Component Analysis.

Table 6.2.2.1C Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.750	25.004	25.004	2.750	25.004	25.004	2.193	19.935	19.935
2	1.389	12.629	37.632	1.389	12.629	37.632	1.639	14.901	34.837
3	1.111	10.101	47.733	1.111	10.101	47.733	1.419	12.897	47.733
Extraction Method: Principal Component Analysis.									

There are three factors with Eigen values larger than 1.0 and they account more than 47 % of the total variation.

Table 6.2.2.1D Rotated Component Matrix(a)			
	Component		
	1	2	3
Memory Power	.555	.136	.140
Listening Skills	.562	2.394E-02	.350
Expertise in One Art	-8.709E-03	.679	.293
Regular Exercise	.368	.663	-.242
Balance Diet	.565	.338	-.196
Public Speaking	.132	.120	.683
Group Discussion	.216	.146	.704
Expertise in One Sport	-7.177E-02	.742	.245
Reading Habits	.506	8.605E-02	5.331E-02
Positive Attitude	.639	-6.785E-02	.252
Self Confidence	.618	-9.413E-02	7.949E-02
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a Rotation converged in 7 iterations.			

According to Questionnaire for Students there are 11 variables that give measure of Personality Development in Students. Out of these, 7 variables constitute four factors, which explain more than 47% of total variation.

Three extracted factors are as follow:

1. Sports and arts activity
2. Public and group communications
3. Self Attitude

Sports and arts activity involves expertise in one art, regular exercise and expertise in one sport. These variables have heavy factor loading on Factor 1 i.e. Sports and arts activity.

Public and group communications involves public speaking and group discussion. These variables have heavy factor loading on Factor 2. i.e. Public and group communications

Self-Attitude involves positive attitude and self-confidence. These variables have heavy factor loading on Factor 3 i.e. Self Attitude

6.2.3.Q-P-H : Interaction of father and mother with adolescent

Parents were asked to respond on their interaction with their adolescent son/daughter in nos. of hours per day. More than 6 hours was clubbed together.

Table 6.2.3A Interaction of father with adolescent

Average Hours/Day Father Interaction	Frequency	Percent	Cumulative Percent
.00	23	3.0	3.0
1.00	217	28.7	31.7
2.00	221	29.2	60.9

3.00	107	14.1	75.0
4.00	82	10.8	85.9
5.00	54	7.1	93.0
6.00 and above	53	8.0	100
Total	757	100.0	
Missing System	17		
Grand Total	774		

Father interaction with adolescent show that 28.7 % interacted for an hour or so daily, while other 29.2 % interacted for 2 hours daily. Cumulative 75 % of fathers interacted with their adolescents up to 3 hours. Mother's interaction was more compared to father. Cumulative 30.1 % of mothers interacted for and more than 6 hours daily compared to 8 % of fathers for more than 6 hours.

Table 6.2.3B Interaction of mother with adolescent			
Average Hours/ Day Mother Interaction	Frequency	Percent	Cumulative Percent
.00	7	.9	.9
1.00	80	10.6	11.5
2.00	153	20.2	31.7
3.00	88	11.6	43.3
4.00	119	15.7	59.0
5.00	82	10.8	69.9
6.00 and above	227	30.1	100
Total	757	100.0	
Missing System	17		
Grand Total	774		

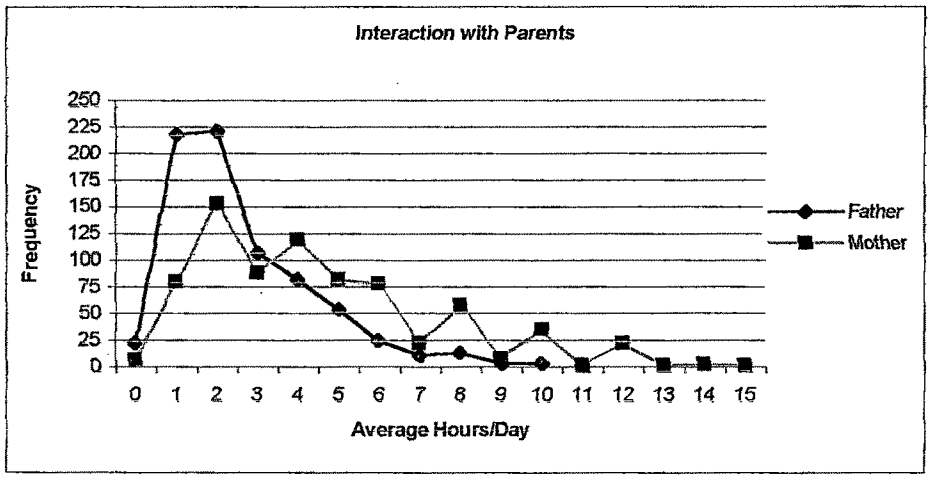


Chart 6.2.3 Interaction of Parents with adolescent

	Mean	N	Std. Deviation
Average Hour/Day Interacting With Mother	3.0054	3771	1.5152
Average Hour/Day Interacting With Father	2.2635	3771	1.1828

	N	Correlation	p-value.
Average Hour/Day Interacting With Mother & Average Hour/Day Interacting With Father	3771	.645	.000

	95% Confidence Interval of the Difference		t	p-value
	Lower	Upper		
Average Hour/Day Interacting With Mother - Average Hour/Day Interacting With Father	.7044	.7795	38.758	.000

For Average Hours/Day Interaction between Father & Mother:

Ho: Average Hour/Day Interacting with Mother is equivalent to Average Hour/Day Interacting with Father.

H1: Average Hour/Day Interacting with Mother is not equivalent to Average Hour/Day Interacting with Father.

In other way,

Ho: Difference between Average Hour/Day Interacting with Mother and Average Hour/Day Interacting with Father is equivalent zero.

H1: Difference between Average Hour/Day Interacting with Mother and Average Hour/Day Interacting with Father is not equivalent zero.

Test Result:

Since, p-value is less than 0.05 (in fact very near to 0), there is strong evidence against null hypothesis Ho to reject it at 5% level of significance. Thus, there is significant difference between Average Hour/Day Interacting with Mother and Father.

6.2.4.Q-P-I : Preferred Age period to learn personality skills

Parents responded about the most preferred age period to learn the personality development life skills.

Table 6.2.4 Preferred Age period to learn personality skills		
Age Period for Personality Skill/Traits	**Frequency**	**Percent**
7 - 10 Years	38	5.0
11 - 14 Years	416	54.3
15 - 18 Years	269	35.1
19 - 22 Years	40	5.2
23 - 26 Years	3	.4
Total	766	100.0
Missing System	8	
Grand Total	774	

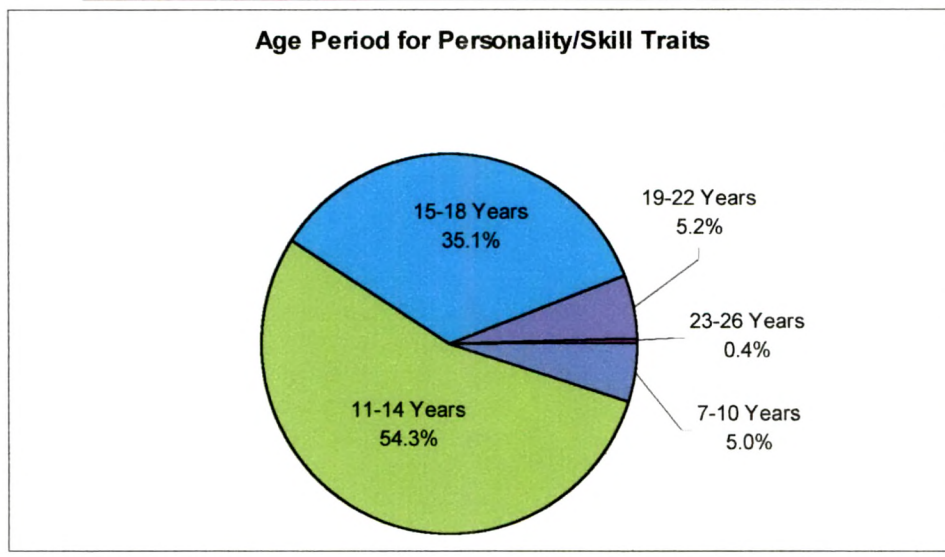


Chart 6.2.4 Preferred Age period to learn personality skills

54.3 % of parents responded that 11 to 14 years of age period is the best for adolescents to learn life skills to develop their personality, while 35.1 5 suggested for 15 to 18 years of age.

6.2.5.Q-P-K : Discussion by parents with adolescent

Discussion on various topics by parents with adolescents on changes of puberty and personality development was responded.

Table 6.2.5 Discussion by parents with adolescent					
Changes		Never Discussed	Partially Discussed	Completely Discussed	Total
Pubic Hair Growth & Removal	Count	356	274	92	722
	%	49.3	38.0	12.7	100.0
Pimple/Acne Care & Treatment	Count	284	290	148	722
	%	39.3	40.2	20.5	100.0
Underarm & Body Hair	Count	310	270	141	721
	%	43.0	37.4	19.6	100.0
Girl: Breast Development & Bra	Count	116	130	147	393
	%	29.5	33.1	37.4	100.0
Girl: Menstruation & Pads	Count	86	117	192	395
	%	21.8	29.6	48.6	100.0
Boy: Beard & Mustache Care	Count	171	129	53	353
	%	48.4	36.5	15.0	100.0
Friendship	Count	45	283	392	720
	%	6.3	39.3	54.4	100.0
Relationship - Affection	Count	120	310	291	721
	%	16.6	43.0	40.4	100.0
Depression / Anger	Count	150	347	224	721
	%	20.8	48.1	31.1	100.0
Positive Self Attitude	Count	78	265	378	721
	%	10.8	36.8	52.4	100.0
Withdrawal/Loneliness	Count	231	341	149	721
	%	32.0	47.3	20.7	100.0
Own Decision Making	Count	93	293	334	720
	%	12.9	40.7	46.4	100.0
Debate & Group Discussions	Count	117	351	253	721
	%	16.2	48.7	35.1	100.0
Life Goal Planning	Count	113	266	342	721
	%	15.7	36.9	47.4	100.0
Self Confidence Building	Count	78	242	401	721
	%	10.8	33.6	55.6	100.0
Child Sexual Abuse	Count	490	167	63	720
	%	68.1	23.2	8.8	100.0

The topics, which were completely discussed, by more than 50 % of parents are self-confidence building (55.6 %), positive self-attitude (52.4 %) and friendship (54.4 %). Between 40 to 50 % of parents discussed other topics, which were: Life goal planning (47.4 %), Own decision making (46.4 %), relationship and affection (40.4 %), girls menstruation (48.6 %).

Child sexual abuse is the least discussed. 68.1 % of parents have never discussed about child sexual abuse with their adolescent. Also physical changes were less discussed. As pubic hair growth and removal (49.3 %), pimple acne care and treatment (39.3 %), underarm and body hair (43 %), breast development in girls (29.5 %) and beard and moustache development in boys (48.4 %) parents never discussed..

6.2.5.1 Factor Analysis of topics discussed by parents

KMO Test: A measure of whether distribution of values is adequate for conducting factor analysis.

Measure Levels: A measure >0.9 is marvelous, >0.8 is meritorious, >0.7 is middling, >0.6 is mediocre, >0.5 is miserable, and <0.5 is unacceptable.

Table 6.2.5.1 Factor Analysis of topics discussed by parents

Table 6.2.5.1 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.461
Bartlett's Test of Sphericity	Approx. Chi-Square	183.330
	df	120
	Sig.	.000

Test Result: KMO test shows data set is miserable for applying factor analysis. So the factor analysis is not applied.

6.2.6.Q-P-L : Sources for additional information for parents

Parents were asked to specify their preferred sources for further information on physical, emotional, social and intellectual changes happening during adolescence of their son/ daughter.

Table 6.2.6A Ranking of preferred sources of information for parents

Sources	Physical Changes		Emotional Changes		Social Changes		Intellectual Changes	
	%	Rank	%	Rank	%	Rank	%	Rank
Parents	6.01	6	7.25	7	6.71	8	2.12	9
Book/Magazines	53.26	1	42.37	1	44.58	1	48.41	1
Internet	5.33	7	7.82	6	11.44	5	21.02	4
Teacher	30.58	3	39.31	2	41.03	2	45.22	2
Counselor	9.28	5	24.81	4	14.6	4	15.71	5
Doctor	49.83	2	16.03	5	7.89	7	11.89	6
Product Promotion	2.41	9	2.86	9	4.14	9	4.46	8
TV	19.24	4	31.11	3	35.7	3	22.51	3
Advertisement	3.78	8	6.68	8	11.44	6	7.22	7
Total	100		100		100		100	

Table 6.2.6B Rank Correlations (Spearman's rho)

		Physical Changes	Emotional Changes	Social Changes	Intellectual Changes
Physical Changes	Correlation Coefficient	1.000	.883(**)	.661	.683(*)
	Sig. (2-tailed)	.	.002	.053	.042
	N	9	9	9	9
Emotional Changes	Correlation Coefficient	.883(**)	1.000	.904(**)	.900(**)
	Sig. (2-tailed)	.002	.	.001	.001
	N	9	9	9	9
Social Changes	Correlation Coefficient	.661	.904(**)	1.000	.929(**)
	Sig. (2-tailed)	.053	.001	.	.000
	N	9	9	9	9

Intellectual Changes	Correlation Coefficient	.683(*)	.900(**)	.929(**)	1.000
	Sig. (2-tailed)	.042	.001	.000	.
	N	9	9	9	9
** Correlation is significant at the .01 level (2-tailed).					
* Correlation is significant at the .05 level (2-tailed).					

Books and magazines are the most preferred source for additional information on all the pubertal changes of adolescent as responded by parents. Second source is teacher except for physical changes doctors got the second rank

Summary:

1. There is significant correlation between ranking of preferred sources of information for Emotional Changes and Intellectual Changes with ranking of preferred sources of all other Changes. That is, priority of sources of information for Emotional Changes and Intellectual Changes are similar with that of other changes.
2. There is no significant correlation between ranking of preferred sources of information for Physical Changes and that for Social Changes, which indicates there is significant difference between priority of sources of information between Physical Changes and Social Changes that is, they are not in same accordance.

6.2.7. Q-P-M : First initiative for reproductive discussion with adolescents

Parents responded about the first initiative for reproductive healthcare discussion with the adolescent son/daughter.

Table 6.2.7. First initiative for reproductive discussion with adolescents

First Source of Information	Frequency	Percent
Mother	463	64.2
Father	51	7.1

Teacher	119	16.5
Doctor	61	8.5
Media	14	1.9
Others	13	1.8
Total	721	100.0
Missing System	53	
Grand Total	774	

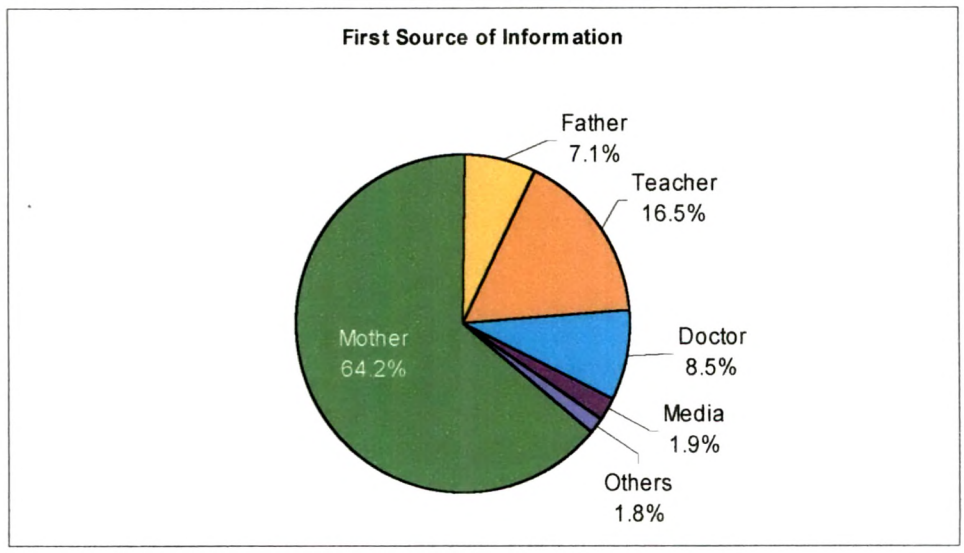


Chart 6.2.7. First initiative for reproductive discussion with adolescents

64.2 % of parents responded that mother should take first initiative to start the discussion on reproductive healthcare. Then after 16.5 % of parents suggested that the teacher should initiate such discussion.

6.3. Data analysis of teachers' questionnaires

Teachers also play a very important role in personality development of adolescents. Teachers in the formal school set carry out major teaching up. Teachers of the adolescents teaching in standard VII, VIII, IX and X were considered for responses. The major focus was reproductive healthcare awareness among the boys and girls as well as learning of other life skills for personality development in school environment.

6.3.1 Q-T-A : Material and time adequacy in school curriculum

The material and time available in the school curriculum for the personality related life skills development got average response. Majority of teachers did not felt strongly about adequacy or inadequacy of material as well as time for adolescents' personality development.

Table 6.3.1 Material and Time adequacy in school curriculum

Ranking	Frequency	Percent	Time	Frequency	Percent
Very Inadequate	4	5.2	Very Inadequate	4	5.2
Inadequate	6	7.8	Inadequate	6	7.8
Average inadequate	28	36.4	Average inadequate	30	39.0
Average *adequate*	30	39.0	Average *adequate*	27	35.1
Adequate	8	10.4	Adequate	7	9.1
Very *Adequate*	1	1.3	Very *Adequate*	3	3.9
Total	77	100.0	Total	77	100.0

6.3.2 Q-T-B : General health of adolescents

Table 6.3.2 General Health of Adolescent

Ranking	Boys		Girls	
	Count	%	Count	%
Very Poor	0	0.0	0	0.0
Poor	1	1.3	5	6.5
Average Poor	*12*	*15.6*	*15*	*19.5*
Average good	44	57.1	33	42.9
Good	13	16.9	15	19.5
Very Good	7	9.1	9	11.7
Total	77	100.0	77	100.0

Teachers felt that the general health of only 11.7 % the adolescents were very good. Compare to boys, girls health was poor according to the teachers. The scope for improvement of adolescent health is observed

6.3.3 Q-T-C : Awareness about pubertal changes

Compare to boys, girls were more aware about changes of puberty. But majority of them had average knowledge on pubertal changes. Only 2.6 % of boys and 5.2 % of girls were considered having very high knowledge.

Table 6.3.3 Awareness About Changes of Puberty

Ranking	Boys		Girls	
	Count	%	Count	%
Very Low	3	3.9	3	3.9
Low	6	7.8	5	6.5
Average low	23	29.9	15	19.5
Average high	24	31.2	30	39.0
High	19	24.7	20	26.0
Very High	2	2.6	4	5.2
Total	77	100.0	77	100.0

6.3.4 Q-T-D : Information on reproductive healthcare in school curriculum.

Table 6.3.4 Information about Reproductive Healthcare

	Frequency	Percent
Very Inadequate	11	14.3
Inadequate	14	18.2
Average Inadequate	24	31.2
Average Adequate	19	24.7
Adequate	7	9.1
Very Adequate	2	2.6
Total	77	100.0

The information on reproductive healthcare in school curriculum was very inadequate as per 14.3 % of teachers, inadequate as per 18.2 % of teachers and average inadequate as per 31.2 % of teachers. Cumulatively they were 63.7 %. There is a good scope to improve on information through textbooks and workshops in schools with adolescents on reproductive healthcare.

6.3.5 Q-T-E : Emotional behavior changes among students

Teachers have observed the emotional behavioral changes among the adolescent boys as well as girls.

Table 6.3.5 Emotional Behaviour Change

Ranking	Boys		Girls	
	Count	%	Count	%
Very Less	0	0.0	0	0.0
Less	3	3.9	3	3.9
Average less	9	11.7	11	14.3
Average often	29	37.7	19	24.7
Often	30	39.0	38	49.4
Very Often	6	7.8	6	7.8
Total	77	100.0	77	100.0

6.3.6 Q-T-F : Teacher – Adolescent Students Relationship

Table 6.3.6 Teacher – Adolescent Students Relationship

Ranking	Boys		Girls	
	Count	%	Count	%
Very weak	9	11.7	8	10.4
Weak	15	19.5	14	18.2
Average weak	16	20.8	10	13.0
Average strong	24	31.2	26	33.8
Strong	11	14.3	13	16.9
Very Strong	2	2.6	6	7.8
Total	77	100.0	77	100.0

Teachers' response was mixed and divided over the level of teachers-adolescents relationship for boys as well as girls.

6.3.7 Q-T-G : Participation of students in competitive events.

Table 6.3.7 **Participation of students in competitive events.**

%	Boys		Girls	
	Count	%	*Count*	%
20	3	3.9	2	2.6
30	1	1.3	7	9.1
40	13	16.9	13	16.9
50	16	20.8	17	22.1
60	14	18.2	6	7.8
70	20	26.0	21	27.3
80	10	13.0	11	14.3
Total	77	100.0	77	100.0

The teachers' response was mixed over participation of boys and girls in competitive events in schools.

6.3.8 Q-T-H : Relation of participation and intellectual development

Table 6.3.8 **Relation of participation and intellectual development**

	Frequency	Percent
Inverse	1	1.3
Proportionate	62	80.5
Irrelevant	8	10.4
Can't Say	6	7.8
Total	77	100.0

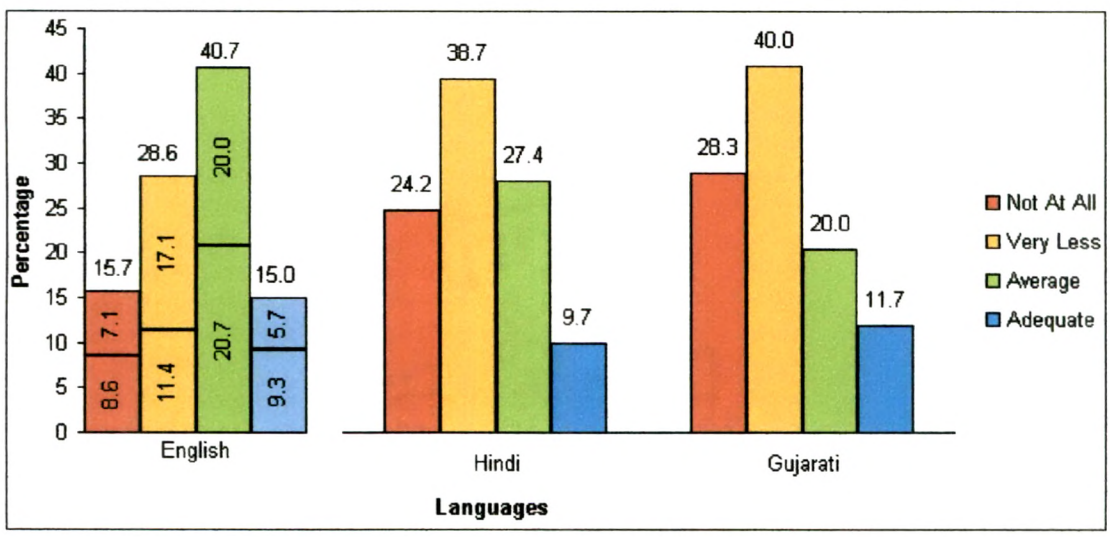
Majority of teachers (80.5)% responded that the participation in extra curricular activities have proportionate relationship with respect to intellectual and academic performances of the adolescents in the school.

6.3.9 Q-T-I : Literature on parenting of teenagers in Indian culture

Table 6.3.9 Literature on parenting of teenagers in Indian culture										
Literature/Books For Parenting of Teenagers	English						Hindi		Gujarati	
	Foreign Authors		Indian Authors		Total					
	Count	%	Count	%	Count	%	Count	%	Count	%
Not At All	12	17.1	10	14.3	22	15.7	15	24.2	17	28.3
Very Less	16	22.9	24	34.3	40	28.6	24	38.7	24	40.0
Average	29	41.4	28	40.0	57	40.7	17	27.4	12	20.0
Adequate	13	18.6	8	11.4	21	15.0	6	9.7	7	11.7
Total	70	100.0	70	100.0	140	100.0	62	100.0	60	100.0

Only 18.6 % teachers responded that books on parenting of teenagers in Indian culture are adequate in English language by foreign authors. Overall response was mixed. Comparatively better literature and books are available in English language.

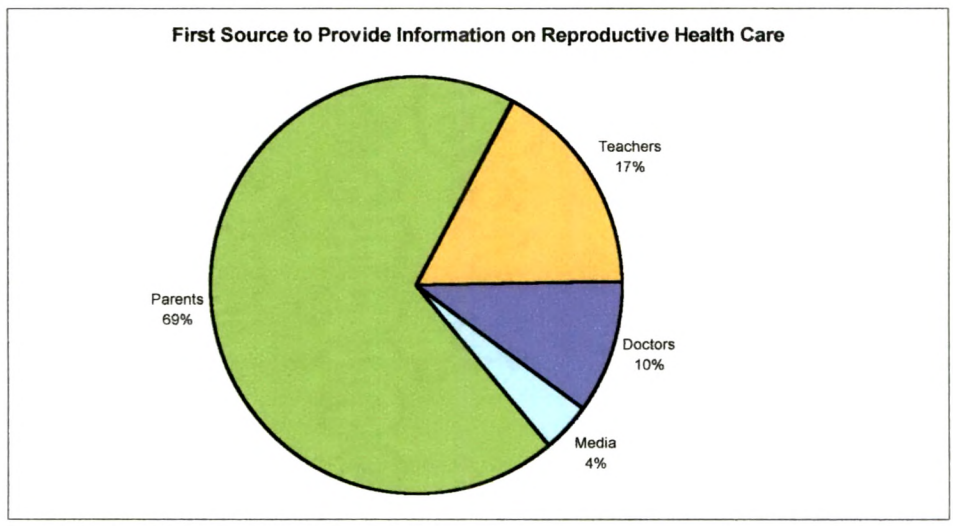
Chart 6.3.9 Literature on parenting of teenagers in India



6.3.10 Q-T-II-B : Initiative for reproductive healthcare discussion

Table 6.3.10 Initiative for reproductive healthcare discussion		
First Source to Provide Information On Reproductive Health Care	Frequency	Percent
Parents	53	68.8
Teachers	13	16.9
Doctors	8	10.4
NGO	0	0.0
Media	3	3.9
Others	0	0.0
Total	77	100.0

Chart 6.3.10 Initiative for reproductive healthcare discussion with adolescents



Teachers (69 %) strongly perceived that parents should initiate first, the discussion on reproductive healthcare with their adolescent son/daughter. Then after teachers (17 %) and Doctors (10 %) were considered for initiating discussion on this sensitive issues.

6.3.11 Q-T-II-A : Importance of personality development skills

Table 6.3.11A Importance of personality development skills

Particulars		Very Less Important	Less important	Average	Important	Very Important	Very Very Important	Total
Stage Events	Count		1	19	18	28	11	77
	%		1.3	24.7	23.4	36.4	14.3	100.0
Elocution/ Debate	Count		3	10	16	29	19	77
	%		3.9	13.0	20.8	37.7	24.7	100.0
Essay Writing	Count		7	11	26	16	17	77
	%		9.1	14.3	33.8	20.8	22.1	100.0
Outdoor Sports	Count		2	4	24	27	19	76
	%		2.6	5.3	31.6	35.5	25.0	100.0
Scout/Guide Training	Count	1	2	10	34	20	4	71
	%	1.4	2.8	14.1	47.9	28.2	5.6	100.0
Outdoor Camp Trekking	Count		1	17	23	27	9	77
	%		1.3	22.1	29.9	35.1	11.7	100.0
Expertise In An Art	Count		2	23	26	15	11	77
	%		2.6	29.9	33.8	19.5	14.3	100.0
Expertise In A Sport	Count			16	31	18	12	77
	%			20.8	40.3	23.4	15.6	100.0
Vocabulary	Count		7	6	12	28	24	77
	%		9.1	7.8	15.6	36.4	31.2	100.0
Positive Attitude	Count		1	2	9	19	46	77
	%		1.3	2.6	11.7	24.7	59.7	100.0
Self Confidence	Count			4	7	20	46	77
	%			5.2	9.1	26.0	59.7	100.0
Public Speaking	Count			6	22	24	25	77
	%			7.8	28.6	31.2	32.5	100.0
Daily Exercise	Count		5	10	13	19	30	77
	%		6.5	13.0	16.9	24.7	39.0	100.0

KMO Test: A measure of whether distribution of values is adequate for conducting factor analysis. Measure Levels: A measure >0.9 is marvelous, >0.8 is meritorious, >0.7 is middling, >0.6 is mediocre, >0.5 is miserable, and <0.5 is unacceptable.

Bartlett's Test: This is a measure of the multivariate normality of set of distribution. It also tests whether the correlation matrix is an identity matrix. A significant value <0.5 indicates that these data do not produce an identity matrix (or "differ significantly from identity") and are thus approximately multivariate normal and acceptable for factor analysis.

Note: Correlation matrix is not an identity matrix and is approximately multivariate normal is assumption/ requirement of factor analysis.

Table 6.3.11B Factor analysis ***Importance of personality development skills***		
Table 6.3.11B KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.781
Bartlett's Test of Sphericity	**Approx. Chi-Square**	488.867
	df	78
	Sig.	.000

Test Result: KMO test shows data set is middling (.781) for applying factor analysis. Also, according to Bartlett's test our data set is less than 0.5, approximately multivariate normal and acceptable for factor analysis.

Table 6.3.11B Communalities		
	Initial	**Extraction**
Stage Events	1.000	.651
Elocution/Debate	1.000	.764
Essay Writing	1.000	.745
Outdoor Sports	1.000	.588
Scout/Guide Training	1.000	.635
Outdoor Camp/Trekking	1.000	.538
Expertise In An Art	1.000	.700
Expertise In A Sport	1.000	.617
Vocabulary	1.000	.669
Positive Attitude	*1.000*	.778
Self Confidence	1.000	.849
Public Speaking	1.000	.540
Daily Exercise	1.000	.662
Extraction Method: Principal Component Analysis.		

Table 6.3.11B Total Variance Explained									
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.288	40.678	40.678	5.288	40.678	40.678	3.522	27.096	27.096
2	2.281	17.547	58.225	2.281	17.547	58.225	3.041	23.395	50.491
3	1.166	8.966	67.192	1.166	8.966	67.192	2.171	16.701	67.192
Extraction Method: Principal Component Analysis.									

There are three factors with Eigen values larger than 1.0 and they account more than 67 % of the total variation.

Table 6.3.11B Rotated Component Matrix (a)			
	Component		
	1	2	3
Stage Events	4.138E-02	.405	.696
Elocution/Debate	.179	.280	.809
Essay Writing	.199	9.482E-02	.835
Outdoor Sports	.158	.703	.262
Scout/Guide Training	.361	.707	6.273E-02
Outdoor Camp/Trekking	.267	.678	8.114E-02
Expertise In An Art	-2.371E-02	.797	.255
Expertise In A Sport	-4.300E-03	.755	.217
Vocabulary	.692	.301	.317
Positive Attitude	.859	9.097E-02	.176
Self Confidence	.914	8.599E-02	8.166E-02
Public Speaking	.722	.121	6.492E-02
Daily Exercise	.806	.102	4.482E-02
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.			
a Rotation converged in 5 iterations.			

According to questionnaire for teachers, there are 13 variables that give measure contribution of future personality development in students. Out of these, all the 13 variables constitute three factors, which explain more than 67 % of total variation.

Three extracted factors are as follow:

4. Competitive stage events
5. Outdoor adventurous activities
6. Self attitude

Competitive stage events involves stag events, elocution, debate and essay writing. These variables have heavy factor loading on Factor 1 i.e. Competitive stage events

Outdoor adventurous activities involves outdoor sports, scout/guide training, outdoor camp and trekking, expertise in an art and sport. These variables have heavy factor loading on Factor 2. i.e. Outdoor adventurous activities.

Self attitude and personal development involves vocabulary, self confidence, positive attitude, public speaking and daily exercise. These variables have heavy factor loading on Factor 3 i.e Self attitude and personal development.

6.3.12 Importance of personality development by adolescents and teachers

Table 6.3.12A Importance of personality development by adolescents and teachers

Students' Response	Mean Rank Students	Mean Rank Teacher	Teachers' Response
Public Speaking	4.66	4.88	Public Speaking
Mastery In An Art	4.23	4.13	Expertise In An Art
Vocabulary	4.93	4.73	Vocabulary
Communication Skills	4.90	4.66	Elocution/Debate
Master A Sport	4.63	4.34	Expertise In A Sport
Regular Exercise	4.86	4.77	Daily Exercise
Removal Of Stage Fear	4.92	4.38	Stage Events
Positive Attitude	5.07	5.39	Positive Attitude

Teachers' Response	N	Mean
Stage Events	77	4.38
Elocution/Debate	77	4.66
Essay Writing	77	4.32
Outdoor Sports	76	4.75
Scout/Guide Training	71	4.15
Outdoor Camp/Trekking	77	4.34
Expertise In An Art	77	4.13
Expertise In A Sport	77	4.34
Vocabulary	77	4.73
Positive Attitude	77	5.39
Self Confidence	77	5.40
Public Speaking	77	4.88
Daily Exercise	77	4.77

Table 6.3.12B Importance of personality development by adolescents

Students' Response	N	Mean	Students' Response	N	Mean
Public Speaking	4002	4.66	Removal Of Stage Fear	3983	4.92
Event Participation	3999	4.64	Friendliness	3986	5.07
Mastery In An Art	3993	4.23	Education	3985	5.46
Vocabulary	3990	4.93	Language	3973	5.13
Decision Making	3991	4.92	Balanced Diet	3979	4.98
Good Postures	3989	4.80	Good Looks	3979	4.71
Communication Skills	3985	4.90	Positive Attitude	3976	5.07
Master A Sport	3987	4.63	Love Your Self	3980	4.98
Morning Sunlight	3990	4.95	Computer Operations	3981	4.78
Regular Exercise	3993	4.86	Walking Style	3977	4.67
Competitive Attitude	3878	4.82	Reading	3966	4.88

H0: There is no significant correlation between students' responses and teachers' responses.

H1: There is significant correlation between students' responses and teachers' responses.

Correlations Coefficient (Spearman's rho) =0.595

p-value = 0.120

Conclusion:

Since, p-value is greater than 0.05(level of significance), there is no sufficient evidence against null hypothesis to reject it. This indicates that mean rank of students' responses and that of Teachers' responses have significant correlation. Also, positive rank correlation shows that students' responses and teachers' responses are in same accordance.

6.3.13 Chi Square Test of Independence

6.3.13.1 School Curriculum Vs Awareness about Puberty Changes

Table 6.3.13.1 School Curriculum Vs Awareness about Puberty Changes

	Chi-square Statistic	p-value	Result
Boy	52.945	0.001	Dependent
Girl	50.304	0.002	Dependent

For Boys:

Ho: Adequacy of information on reproductive healthcare in the school curriculum is independent to level of awareness about changes of puberty among boys.

H1: Adequacy of information on reproductive healthcare in the school curriculum is not independent to level of awareness about changes of puberty among boys.

Conclusion:

Since, p-value is less than the level of significance (0.05), there is sufficient evidence against the null hypothesis to reject it. Thus, adequacy of information on reproductive healthcare in

the school curriculum is not independent to level of awareness about changes of puberty among boys.

For Girls:

Ho: Adequacy of information on reproductive healthcare in the school curriculum is independent to level of awareness about changes of puberty among girls.

H1: Adequacy of information on reproductive healthcare in the school curriculum is not independent to level of awareness about changes of puberty among girls.

Conclusion:

Since, p-value is less than the level of significance (0.05), there is sufficient evidence against the null hypothesis to reject it. Thus, adequacy of information on reproductive healthcare in the school curriculum is not independent to level of awareness about changes of puberty among girls.

6.3.13.2 School Material Vs Personality Development

Table 6.3.13.2 School Material Vs Personality Development

Sr. No.		Chi-Square Statistic	p-value	Result
1	Stage Events	33.963	0.026	Dependent
2	Elocution/Debate	32.551	0.038	Dependent
3	Essay Writing	46.801	0.001	Dependent
4	Outdoor Sports	26.105	0.162	Independent
5	Scout/Guide Training	37.296	0.054	Independent
6	Outdoor Camp/Trekking	34.994	0.020	Dependent
7	Expertise In An Art	26.095	0.163	Independent
8	Expertise In A Sport	26.074	0.037	Dependent
9	Vocabulary	31.791	0.046	Dependent
10	Positive Attitude	22.217	0.329	Independent
11	Self Confidence	20.067	0.169	Independent
12	Public Speaking	26.715	0.031	Dependent
13	Daily Exercise	21.961	0.343	Independent

Ho: Adequacy of material in the current school curriculum for overall personality development of the students is independent to level of i^{th} personality during the school life of the adolescents.

$(i = 1, 2, \ldots, 13)$

H1: Adequacy of material in the current school curriculum for overall personality development of the students is not independent to level of i^{th} personality during the school life of the adolescents.

$(i = 1, 2, \ldots, 13)$

Conclusion:

Since, p-value is less than the level of significance (0.05) for personality features 1, 2, 3, 6, 8, 9 and 12; there is sufficient evidence against the null hypothesis to reject it. Thus, adequacy of material in the current school curriculum for overall personality development of the students is not independent to level of 1, 2, 3, 6, 8, 9 and 12^{th} personality features during the school life of the adolescents.

Moreover, Since, p-value is greater than the level of significance (0.05) for personality features 4, 5, 7, 10, 11 and 13; there is no sufficient evidence against the null hypothesis to reject it. Thus, adequacy of material in the current school curriculum for overall personality development of the students is independent to level of 4, 5, 7, 10, 11 and 13^{th} personality features during the school life of the adolescents.

6.3.13.3 School Time Vs Personality Development

Table 6.3.13.3 School Time Vs Personality Development				
Sr. No.		Chi-square Statistic	p-value	Result
1	Stage Events	48.597	0.000	Dependent
2	Elocution/Debate	30.694	0.059	Independent
3	Essay Writing	42.262	0.003	Dependent
4	Outdoor Sports	11.905	0.919	Independent
5	Scout/Guide Training	28.4	0.290	Independent
6	Outdoor Camp/Trekking	19.353	0.499	Independent
7	Expertise In An Art	20.607	0.421	Independent
8	Expertise In A Sport	27.011	0.029	Dependent
9	Vocabulary	29.509	0.078	Independent
10	Positive Attitude	20.464	0.429	Independent
11	Self Confidence	20.453	0.155	Independent
12	Public Speaking	22.813	0.088	Independent
13	Daily Exercise	32.448	0.039	Dependent

Ho: Adequacy of time in the current school curriculum for overall personality development of the students is independent to level of i^{th} personality during the school life of the adolescents.

(i = 1, 2, ..., 13)

H1: Adequacy of time in the current school curriculum for overall personality development of the students is not independent to level of i^{th} personality during the school life of the adolescents.

(i = 1, 2, ..., 13)

Conclusion:

Since, p-value is less than the level of significance (0.05) for personality features 1, 3, 8 and 13; there is sufficient evidence against the null hypothesis to reject it. Thus, adequacy of time in the current school curriculum for overall personality development of the students is not independent to level of 1, 3, 8 and 13^{th} personality features during the school life of the adolescents.

Moreover,

Since, p-value is greater than the level of significance (0.05) for personality features 2, 4, 5, 6, 7, 9, 10, 11 and 12; there is no sufficient evidence against the null hypothesis to reject it. Thus, adequacy of time in the current school curriculum for overall personality development of the students is independent to level of 2, 4, 5, 6, 7, 9, 10, 11 and 12^{th} personality features during the school life of the adolescents.

6.3.14.Views of principals/school authorities on adolescence education

During the survey, principals as well as school authorities were contacted to provide permission to conduct and administer the questionnaires in their schools. Their opinion on adolescence education was also obtained through their interview.

Saji Mathai, principal, Gujarat Refinery School, Baroda, Gujarat-India opined that adolescent period is a very crucial and critical phase in the life of a human being. Many changes are taking place in the physical, emotional, and intellectual's aspects of the life of a person. Therefore we should deal with their problems carefully and sympathetically. Parents and teachers should play the role of a guide, philosopher and friend.

Manas K Pal, Principal, Indian Petrochemicals Corporation Limited, Baroda, Gujarat-India opined that school curriculum should include Adolescence education topics more in detail, in science at the secondary level. The parent, and the school counselor should take more time from their daily routine and listen to the growing children for their emotional development.

The opinions and views of other principals / school authorities are placed at (Appendix-6.3.14). Principals need participative sessions conducted by specialized teachers on the subject. As there may not be exam on this topics, students interest may be less.

6.4.Doctors' views on adolescents' healthcare

Doctors who were attending adolescents in their respective fields were contacted. Discussions were held with doctors by the researcher on the following points:

- Types of problems/diseases faced by the adolescents
- Suggestions for preventive care for the above
- Suggestions to increase awareness on preventive healthcare
- Factors contributing to physical development during puberty
- Literature on parenting of teenagers

6.4.1.Psychiatrist

The adolescents approach with problems of

- Academic underachievement
- Depression disorder
- Anxiety disorders

The preventive measures suggested were

- Specific planning and structured daily routine
- Outdoor activities and exercise
- Parents to listen their adolescent and provide quality time

Electronic and print media can be used for generating awareness. Over The Counter (OTC) medicine should be avoided completely. Exercise and sports can help the adolescents in their

physical development during puberty. Literature on parenting of teenagers is adequately available in English language by foreign authors. Regional language has very less literature.

6.4.2.Dermatologist

Acne, Alopecia (Hair loss) and fungal infection are the major problems with adolescents as per the dermatologist. Preventive care suggested for acne is cleansing, proper medication, minimum use of cosmetics and diet control. Alopecia needs hair care and proper nutrition. Avoiding moisture, friction and wetness in the affected areas can minimize fungal infection. Self-medication and OTC should not be allowed. Health education on skin related problems should be given to parents and adolescents.

6.4.3.Gynecologist

Adolescents approach with menstrual problems, physical development and contraceptive knowledge. Boys do not approach. Proper knowledge and timely treatment can prevent menstrual disorders. Sex education in school curriculum can help in increasing the awareness on contraceptives. Involvement of parents in imparting sex education to adolescents should be encouraged. OTC medicine should be restricted. Balanced diet and regular exercise can help in physical development of adolescents during puberty.

Adolescents have unsaid secrecy and fear complex to discuss their problems. They display innocence about secondary sexual characteristics. Education regarding reproductive hygiene at primary level, with teachers and parents can help. Healthy and friendly relationship should be developed between adolescents, parents and teachers. Radio, T.V. and publications are powerful media to reach the adolescents and parents to increase awareness on preventive

healthcare. Awareness, reassurance and healthy and happy environment are the major factors that can help adolescents during puberty for their physical development.

6.4.4.Ophthalmologist

Adolescents approach for refractory error, ocular allergy, injury and malnutrition related problems. Refractory error cannot be prevented. Early diagnosis and treatment is more important. Exposure to dust and heat should be avoided to protect eyes from allergy and injury. Routine check up by specialist as well as to inform about any symptoms of disease in time can prevent further damage.

6.4.5.Dentist

Adolescent approach with dental problems related to Malocclusion, dental caries, fractured anterior teeth. Oral habits like mouth breathing and lip sucking to be checked to avoid caries. Early check up and treatment can help in preventing further damage to tooth. Regular dental check up in schools can generate awareness. Balanced diet and healthy parent-adolescent relationship can help the adolescents during puberty to develop physically.

6.4.6.Pediatrician (Adolescent educator)

Adolescent educator observed that the adolescents are consulting on overweight, underweight, bedwetting as well as on careers. Seminar in schools on adolescence education can help on the above problems. Handbills and exhibition on the subjects can generate the awareness. Audiovisual communications to adolescents and parents can increase awareness for preventive healthcare. Scientific diet and exercise can improve physical development during

puberty. Doctor and student interaction in school as well parents' participation can improve health awareness.

6.4.7.General Practitioner (MBBS)

Adolescents approach with height and weight problems. They also ask information related to sex education. Doctors should listen to the complaints patiently. Lectures can be arranged in the school on healthcare issues. Maximum participation by adolescents and parents in lectures should be motivated. Exercise and balanced diet can help in physical development during puberty.

6.5. Search engines analysis of Website www.teensnparents.com

A website with domain name teensnparents.com was launched. 25 MB space was hired on annual rental charge basis costing around Rs. 5000/ per year. The space provider provided the feedback analysis as under.

6.5.1.Nos. of hits on website

An hourly, weekly and monthly analysis of hits received by the website were available. Although promotional efforts, other than informing the respondents; were not much attempted due to expenses involved. The website was promoted through registration on the major search engines like Yahoo, Google, Alta Vista, Ask Jeeves etc.

Table 6.5.1. Nos. of hits on website teensnparents.com					
Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2004	229	289	1370	8284	42.79 MB
Feb 2004	375	436	2330	11906	70.83 MB
Mar 2004	687	754	2592	14425	111.46 MB
Apr 2004	708	788	2164	12567	120.60 MB
May 2004	557	596	1818	10372	97.84 MB
Jun 2004	493	539	1841	8960	83.71 MB
Jul 2004	559	613	1901	9844	99.85 MB
Aug 2004	523	572	2134	10421	98.52 MB
Sep 2004	569	637	2735	12478	110.84 MB
Oct 2004	602	651	1991	10203	107.91 MB
Nov 2004	606	656	2633	12175	108.92 MB
Dec 2004	598	649	3030	13973	116.77 MB
Total	6506	7180	26539	135608	1.14 GB

Month	Unique visitors	Number of visits	Pages	Hits	Bandwidth
Jan 2005	342	398	1768	7775	69.39 MB
Feb 2005	311	356	1859	8442	71.80 MB
Mar 2005	351	412	2065	8714	75.80 MB
Apr 2005	567	612	2333	10257	93.87 MB
May 2005	560	634	2555	11930	106.21 MB
Jun 2005	425	472	2142	10342	87.76 MB
Total	2556	2884	12722	57460	504.83 MB

6.5.2.Listing of key words connecting teensnparents.com

The search engines were able to provide the listing of most popular phrases and words used, to search and got connected to this website. We can see from these search phrases that which are the topics need more information and adolescents are curious about. Main words requested were on pubic hair, breast development, urinal and vaginal infections, dandruff, shaving bumps, body odur, vaginal odor, penis odor, ejaculation, masturbation, brassiere etc. The phrases used to search topics and got connected to this website for is given in detail at (Appendix-6.5.2).

6.5.3.Email queries on teensnparents.com

Email was one of the most confidential ways to inquire. Adolescents do send email for their problems. We, after consulting with our experts, appropriate replies were emailed to them. Their queries are more concentrated on pubic hair, breast development and brassieres. Even mothers also asked about their concern with their daughters on physical development and hygiene issues. Few queries are listed as under and other are detailed at (Appendix-6.5.3)

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question: Hello. I am inquiring if there is anything I can do or give my daughter for the

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hormone changes she is experiencing. She doesn't have any menstruation, but she has shown a huge increase in emotional problems.

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question: i m a boy having breast what to do? should i wear a bra?

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question: My daughter is 9. She has matured just 1 month back. Do you think that its early puberty. I am also very much afraid. She is now studying 4th standard. She does not have any knowledge about this. How can I educate her? Please suggest me.

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question: What would the irritation be like? Like red and bumps or something? I am curious because since i started shaving its been different down there... I am getting worried.

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question: How to increase breast size naturally?' Rite now i m doing massage regularly with olive oil n size is just 32" it doesn't pick out of my dress.