

## Health Status Of Adolescent Boys And Girls In Kashmir Valley (J&K, India) - A Comparative Study

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**ABSTRACT:** The aim of the study was to find the health status of adolescent boys and girls of Kashmir valley. The sample of this study has been undertaken in six districts of Kashmir valley i.e. Srinagar, Budgam, Anantnag, Kupwara, Pulwama and Baramulla, covering a sample of 1500 adolescents i.e. 750 boys and equal number of girls in the age group of 10-19 years, studying in Government Schools. The findings of the study are interesting and useful for framing programme guidelines towards adolescent development. During last couple of years, various policies have been formulated to bring adolescents to the centre stage of development planning. These policies are National Health Policies 2002, the National Population Policy 2000, the National AID'S Policy 2001, the Woman Policy 2001, the Child and Education Policy, Scheme for Adolescent Girls (Kishori Shakti Yojana) etc. All these policies have addressed the adolescents of the age of 10-19 years.

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### INTRODUCTION

Adolescence is a time of change to adult behavior and there by eating habits of childhood gradually change into those typical of an adult. Adolescence is, therefore, an important time that demands for health and nutrition education. Eating habits may be erratic large quantities may be eaten one day and very little next day. It has been pointed out by researchers that adolescents in different parts of the country had nutritional deficiencies. It occurs in boys as well as in girls. Adolescent girls are at special nutritional risk because of iron deficiency anemia. The requirement of iron, which is 18 mg/day, is needed not only to make losses due to menses but also to build up reserves (Kurz 1996; Drummond 1996; Gregory 2000). Calorie requirement for most adolescent is high. An adolescent may rush off to school without eating breakfast. When away from home he or she usually eats readily available meals that are acceptable to its peer groups. This means snacks in the form of fast-food (junk food). He/she eats fewer meals at home where parents can provide them nutritious diet (Heald 1975). Adolescents may indulge in food fads, macrobiotic diets and semi starvation regimens in calories, vitamins and minerals. An adolescent protein need/unit body weight is higher than that of adult but less than a rapidly growing infant. 7 Introduction Adolescents have higher vitamin and mineral needs compared with people at most other life stages. Adolescents are mostly concern with vitamin A, calcium and iron each of which plays an important role in growth.

Adolescents who do not achieve sufficient bone density have greater risk of developing osteoporosis

later in life (Heald 1975; Thomas 1989). Physical changes cause an adolescent to focus attention on his body as he tries to incorporate his new appearance into his developing sense of identity. Many adolescents go through stages, which they are pre-occupied with their appearance and body functions. They may see nutrition as helpful or harmful to their developing body image. A boy may show concern about his body in relation to athletic ability. He may want to eat more to increase his weight and muscle mass. The deposition of fat which normally occurs in adolescent girls may cause her to become concerned that she is getting fat limiting calorie intake at this time may interfere with linear growth. The onset of obesity during adolescence may contribute to a number of psychological problems. It may interfere with development of positive body image (Starz 1983; Kapil 2002).

The percentage of adolescent's population in Jammu and Kashmir State is nearly 27 per cent (Garg 2002; Statistical Digest 2003-2004). Several specific biological changes occur during adolescence. Differences between sexes and between individuals of the same sex become more pronounced during this age span. Hormones drive growth spurt begins between age 10 ½ years and 11 years for females with the peak in the rate of growth at around 12. For boys growth spurt begins between 12 ½ and 13 years and peak at around age 14. This spurt or period of maximal growth lasts about 2 years. The first phase of adolescent growth is linear. Average boys grow 8 inches and girls 6 inches at puberty. A typical girl achieves about 95 per cent of her adult height by menarche. Growth rates are closely related to sexual

maturation. The second phase of adolescent is lateral. A typical healthy girl will gain 35 pounds during adolescence; a typical boy gains about 45 pounds.

The timing of change in the body varies between individuals and between sexes. Girls have fewer variations than boys. The total span of time from the onset of puberty to maturity is shorter and there are fewer differences between late and early maturing girls. The first visible change is development of breast between the ages of 7-12 years. In boys the first sign is the increase in the size of testes. This occurs at the age of 11 years, the range may be between 9-15 years. Sex differences become marked with the onset of puberty. Girls become taller by 10 years but after 13 years boys surpass girls and attain greater ultimate height. On an average, by 18 years males become 13 cm taller and 12 kgs heavier than girls. 4 Introduction Increased production of adrenal steroids is believed to be the first indication of approaching puberty and occurs in both sexes at approximately 7 years of age. Progress towards puberty is then faster in girls both in appearance of secondary sex characteristics and in acceleration of growth (Roche 1976; Virginia 1980; Suiter 1984).

## MATERIAL AND METHODS

The present study was carried out in Government Schools of six Districts of Kashmir Valley were Srinagar, Budgam, Anantnag, Kupwara, Pulwama and Baramulla. The study was undertaken on 1500 adolescents aged 10-19 years of age, both boys and girls. As per census of 2001-02 (Education Department, J&K) total population of J&K adolescents from 10-14 was 7.9 lakh (4.1 lakh boys and 3.8 lakh girls) and between 15 and 19 years the total population of adolescents was 5.4 lakh (2.5 lakh boys and 2.8 lakh girls). Since the size of adolescents was too large to be covered, it was decided to employ sampling method.

### Sample Size

A total of 1500 government school students comprising nearly 1% of State's total on roll adolescent population were chosen by Simple Random Sampling. The specific population selected for sampling in the survey was students attending schools from middle to higher secondary.

### Sampling Procedure:

The study sample was selected using the following design.

**Design:** - Multi stage sampling procedure.

### Thirty sites were selected as follows:

**Stage I:** Administratively, Kashmir valley at the time of data collection was divided into six districts. Two Tehsils from each district were selected to obtain total of 1500 adolescents aged 10-19 years. All educational Zones falling in each district were

enlisted. While using the random tables to obtain total of thirty educational Zones, five Educational Zones were selected from each district

**Stage II:** The middle, high and higher secondary schools falling in each Tehsil was surveyed for collection of the sample. All the schools i.e. the schools in which the required age group was present were enlisted in each Educational Zone. One school (clustered) was selected in each zone by using Random Tables.

**Stage III:** From each District a selected sample of 125 students each both from boys as well as from girls were taken by systemic random sampling as final sampling unit.

### Data collection

The information was collected from primary as well as secondary sources. In primary sources questionnaire cum interview technique was used. In secondary source journals, books and related literature were studied. In designing questionnaire, simple language was used but still in some schools questions had to be explained in local *Kashmiri* language to obtain appropriate information from the respondents. Pre-testing was done on 2 per cent of the sample and questionnaire was modified accordingly. The questionnaire consisted of the following sections:

### General Information:

In this section name, address, age, class, parental education, parental occupation, income of the family was asked. Parental literacy is perhaps the most important factor that determines the prevailing state of ill health and under nutrition/malnutrition. It has been observed that educated mothers with inadequate health care and limited economic facilities could largely succeed in escaping ill health and malnutrition because they could utilize available meager resources optimally.

### Health status:

In this section anthropometry, personal, hygiene, clinical checkup, present status of health, past status of health, signs of malnutrition and menstrual history in case of girl respondents were ascertained.

### Anthropometry

#### Weight:

Adolescents were weighed using floor type weighing machine as per the standard method described by Jelliffe 1966 and ICMR 1986. Weight of the sample was recorded. The adolescent was asked to stand on weighing machine without shoes and with light clothes. Reading was taken in Kg's.

#### Height:

Height was measured without shoes. Adolescents were asked to stand against the wall with shoulder and buttocks touching the wall. The mark at

the head level was chalked on the wall then distance from the wall to bottom was measured which gave the approximate height of the respondents. Height was recorded in centimeters.

For calculating the ideal body weight and obesity different methods were used:

General = Height (cms)-100 = ideal weight (kg)  
Body Mass Index (BMI) was calculated by the following formula:

$$\text{BMI} = \frac{\text{Weight (kg)}}{\text{Height (m)} \times \text{Height (m)}}$$

## RESULTS

**Table 1: Age-wise Distribution of Adolescents**

Age in Years	Boys		Girls		Total	
	N	%age	N	%age	N	%age
11	90	12	44	6	134	9
12	98	13	102	13	200	13
13	103	14	117	16	220	15
14	107	14	155	21	262	17
15	95	13	80	11	175	12
16	77	10	90	12	167	11
17	93	12	84	11	177	12
18	87	12	78	10	165	11
Total	750	100	750	100	1500	100

The above table shows that maximum i.e. 14 per cent boys were in the age group of 13 and 14 years and maximum girls i.e. 21 per cent girls were in the age of 14 years. 12% of boys and 6% of girls were in the age of 11 years, 13% of boys and same percentage of girls were in the age of 12 years. 13% boys and 11% girls were in the age of 15 years, 10% of boys and 12% girls

were in the age of 16 years. 12% boys and 11% girls were in the age of 17 years, 12% boys and 10 % girls in the age of 18 years, which constitute total of 1500 adolescents. However, the table shows that maximum percentage of adolescents was observed in the age group of 13 and 14 years of age both amongst boys and girls.

**Table 2: Distribution of Adolescents by Area of Study**

District	Areas of Study (Tehsil)	Boys		Girls		Total	
Srinagar	Srinagar	80	11	75	10	155	10
	Gandarbal	45	6	50	7	95	6
Budgam	Budgam	69	9	75	10	144	10
	Chadura	56	7	50	7	106	7
Baramulla	Sopore	90	12	73	10	163	11
	Bandipora	35	5	52	7	87	6
Anantnag	Anantnag	83	11	56	7	139	9
	Bijbehara	42	6	69	9	111	7
Pulwama	Pampore	87	12	93	12	180	12
	Shopian	38	5	32	4	70	5
Kupwara	Kupwara	25	3	30	4	55	4
	Handwara	100	13	95	13	195	13
Total		750	100	750	100	1500	100

The above shows that maximum number of adolescents was 10% from District Srinagar, 10% from Budgam, 11% from Sopore, 12% from Pampore and 13% from Handwara. 6% of adolescents were

from Ganderbal, 7% from Chadura, 6% from Bandipora, 9% from Anantnag, 7% from Bijbehara, 5% from Shopian and 4% from Kupwara.

**Table 3: Distribution of Adolescents by Religion**

Gender	Type of Religion				Total		$x^2$
	Non-Muslims		Muslims		N	%age	
	N	%age	N	%age			
Boys	100	13	650	87	750	100	$x^2 = 22.131^*$
Girls	170	23	580	77	750	100	
Total	270	18	1230	82	1500	100	

\*Significant at 0.05

The above table shows maximum adolescents were Muslims (87% among boys and 77% girls). This was expected since the percentage of population by religion as per 2001 census in Jammu & Kashmir is 66.97% Muslims and rest non-Muslims. Although

the religion does not play a major role in determining the health and nutrition status yet at times restrictions and preference for food alters the health status. The results were significant with  $P \leq 0.05$ .

**Table 4: Distribution of Adolescents by Occupation of their Fathers**

Gender	Occupation of Parents						Total		$x^2$
	Manual Labour (ML)		Skilled Labour (SL)		Govt. Employee		N	%age	
	N	%age	N	%age	N	%age			
Boys	181	24	196	26	373	50	750	100	$x^2 = 34.927^*$
Girls	217	29	300	40	233	31	480	100	
Total	398	27	496	33	606	40	1500	100	

\*Significant

The above table depicts the occupational status of fathers of adolescents. The maximum number of adolescent boys i.e. 50% fathers were employees and maximum number of girls i.e. 40% fathers were skilled labour class. 24% of boys and 29% of girls

were from manual labour fathers, 26% of boys and 40% of girls were from skilled labour fathers and 50% of boys and 31% of girls were from government employees. The results were significant with  $P \leq 0.05$ .

**Table 5: Distribution of Adolescents by Type of Family**

Gender	Joint Family		Nuclear Family		Total	$x^2$
	N	%age	N	%age		
Boys	430	57	320	43	750	$x^2 = 0.889^*$
Girls	448	60	302	40	750	
Total	878	58	622	42	1500	

\*Not Significant

The above table gives the distribution of adolescents by type of family. The maximum number of adolescent i.e. 57% boys and 60% girls were from joint family. It clearly shows that joint family system

is preferred than nuclear family as 58% of the adolescent sample was from joint family and only 42% from nuclear family.

**Table 6: Distribution of Adolescent Boys having Complaints of Health**

Age	Without complaint		Headache		Stomachache		Pain in body		Backache		Urinary Infection		$x^2$
	N	%	N	%	N	%	N	%	N	%	N	%	
11-14	205	27	25	3	24	3	43	6	18	2	11	1	16.70*
15-18	315	42	45	6	16	2	57	7	12	2	9	1	
Total	520	69	70	9	40	5	100	13	30	4	20	2	

\*Significant at 0.01

Table gives the present complaint of health of adolescent boys. The number of adolescent boys without any health complaint was 69%. 9% of

adolescent boys complained of headache, 5% stomachache, 13% pain in different parts of body, 4% backache and 2% urinary infection. The observation

in the study were better to the findings of King (1996) who reported 24% of boys in 13-15 years complained of headache. Starfield (1995) also reported health problems in adolescents of all age

groups. This finding highlights the need for arrangement of adolescent at home and in schools also.

**Table 7: Distribution of Adolescent Girls having Complaints of Health**

Age	Without complaint		Headache		Stomachache		Pain in body		Backache		Urinary Infection		$\chi^2$
	N	%	N	%	N	%	N	%	N	%	N	%	
11-14	195	26	58	8	30	4	21	3	29	4	58	8	46.34*
15-18	240	32	23	3	25	3	32	4	36	5	30	4	
Total	435	58	81	11	55	7	53	7	65	9	88	12	

\*Significant at 0.01

The above table gives the present complaint of health of adolescent girls. The number of adolescent girls without any health complaint was 58% .11% of adolescent girls complained of headache, 7% stomach ache, 7% pain in different parts of body, 9% backache and 12% urinary infection. The findings of

present study are comparable to W H O report which revealed many deceases were seen in girl adolescents. Apley I (1975) also reported abdominal problems in adolescents. The findings of Pati (2004) reported a significant section of adolescent girls had urinary infections.

**Table 8: Distribution of Adolescent by Area of Study and Health Care Provided by Parents**

Area	Not Treated		Treatment Provided								Total	
			Government Hospital		Private Hospital		Spiritual Practitioner		Hakim/ Unani Specialists			
	N	%	N	%	N	%	N	%	N	%	N	%
Urban	180	12	75	5	60	4	60	4	75	5	450	30
Rural	585	39	150	10	120	8	45	3	150	10	1050	70
Total	765	51	225	15	180	12	105	7	225	15	1500	100

Table 4.2.7 shows 12% adolescent from urban area and 39% of adolescent from rural area do not treat their disease and 15% of adolescent gets treatment from government hospital, 12% from private doctors and practitioners, 7% from spiritual persons and 15% from *Hakims*. This finding high lights that the access to medical facilities is still restricted due to ignorance. So the need of the hour is to arrange medical examination of the students in schools and in locality also.

## SUMMARY AND CONCLUSION

While analyzing the present complaint of adolescents, it was found that 69 per cent of boys and 58 per cent of girls were without any complaint. Among boys 13 per cent complained of pain in different parts of the body, 4 per cent backache, 7 per cent stomachache, 9 per cent headache. Among girls 11 per cent complained of headache, 9 per cent backache, and high percentage i.e. 12 per cent complained of urinary infections. It was observed that 51 per cent of adolescent had not treated their disease while as 49 per cent had received treatment from dispensaries, private doctors, spiritual peer sahibs and Hakims. The access to medical facilities is

still restricted due to poverty and also because of ignorance. The observations in the study were better to the findings of King (1996) who reported 24 per cent of boys and 50 per cent of girls aged 13-15 years complained of headache. Starfield (1995) also reported health problems in adolescent of all age groups. The findings of the present study are comparable to WHO report which reveal many morbidity problems were seen in more girl adolescent. Apley (1975) also reported abdominal problems in adolescents. The findings of Pati (2006) who reported a significant section of adolescent girls had urinary infections. The occurrence of illness among adolescents has been attributed to increased physiological requirements at puberty. In the present study the various morbid conditions were found among adolescent and some had two or more of these ailments. Among 1500 adolescent that were examined, 25 per cent of boys and 51 per cent girls were found pale by appearance, 29 per cent of boys and 34 per cent girls complained of burning sensation of eyes, 24 per cent of boys and 24 per cent of girls complained of difficulty in reading, 43 per cent of boys and 51 per cent girls shows dental cavities, 44 per cent of boys and 34 per cent of girls were found



with inflamed tonsils. 11 per cent of boys and 9 per cent of girls complained of palpitations. 10 per cent of boys and 15 per cent girls complained of breathlessness. The general health problems of the present study were comparable to the study carried out by Matta (2002). Among 1000 adolescents, who were examined, 124 children were found to have refractive errors. Rao (1993) also reported dental cavities among adolescent especially more among urban areas than rural and tribal children (22.8%, 15.5% and 15% respectively). Singh (2006) reported cold and cough (25.8%), lymphadenopathy (22.2%), scabies (16.2%) and inflamed tonsils (7.8%). These observations try to assess health problems among adolescents. Since it is period of life, adolescents are more at risk of developing refractive errors, dental and other health related problems mainly because of active growth and development, peer pressure and competitive work in schools and above all wrong food habits. The poor vision will affect the performance of adolescent in school and may have a negative influence on the future life. The diagnosis and treatment of refractive error is one of the easiest ways of reduce impaired vision. The findings of the present study highlighted that efforts should be made to make health services available to the adolescent in schools and the living area. The health authorities should undertake measures to do the health screening of adolescent once or twice in a year. Basic knowledge regarding signs and symptoms of disease should be given to the children. Those who are found to be suffering from any disease medical facilities should be provided to them free of cost. Many of these diseases can be prevented through preventive health care practices.

#### REFERENCES

1. Adams, J.F. (1973). Understanding Adolescence. Current Developments in
2. Biddle, S. (1998) Young and Active,? Young People and Health enhancing Physical Activity, evidence and Implications .London Health Education Authority.
3. Bio's (1979). Closeness and Conflict in Adolescent Peer Relationships interdependence with Friends and Romantic Partners, the Adolescent Passage. Developmental Issue, New York International University Press.
4. Clifford, T and Morgen Richard (1993) Introduction of Psychology 7th ed. New Delhi: Tata Mc. Graw Hill.
5. Corinne H Robinson (1977). Normal and Therapeutic Nutrition. Oxford and IBM Publishing Co. 14th Ed.
6. Conrad, H S (1933). The Personal Education in Rating II a Systematic Evaluation. Journal of Educational Psychology.24 (1)39.
7. Damon A and Bajema C J (1974). Age at Menarche Accuracy of zRecall after thirty-nine Years. Human Biology.46:381- 384.
8. Fleek, H (1981). Introduction to Nutrition 4th. Edition. New York: MacMillan Publishing Company.
9. Fleming, C M (1948). Adolescent & its Social Psychology. London: Routledge and Kegan Paul Carter Lane London.
10. Fletcher, I (1963). Anxiety & Achievement of Intellectually Gifted & creative Children. Journal of Psychology. 56:167- 170.
11. Foster (1997). Community Health Nursing Theory & Practice 2nd. Edition W.B. Saunders Company.
12. French, Joan (2001). Gender Equality and Rights of Woman and Girls, Development Vol. 44 Crom Well Press, Wiltshire.
13. Furstenberg, Frank F (1987). Race Differences in Teenage Sexuality, Pregnancy & Adolescent Child Bearing. New York: Milbank Quarterly 65.
14. Healld, F P (1976). New Reference Paints for Defining Adolescent Nutrient Requirement. M I T Press Cambridge Mass.
15. Health 21 (1991). The Health for All Policy Frame Work for the WHO European Region. Copenhagen WHO Regional Office for Europe (European Health for all Sexes 6:27.
16. Hulton and Halberg(1991)Iron requirement Menstruating Women .Amm .Jour .of CI Nut 54:1047 -1058 .
17. Hurlock, B E (1957). Adolescent Development New York: Magraw Hill Book.
18. Moran J. (1979). Alcohol use among American Indian High School Youth from Adolescence and Young Adulthood. Rosenberg M. New York Basic Books. 160) Muratee, S (1990). About Anemia. Nutrition.24(2)3-12 ,
19. Menard, S (1992). "Demographic & Theoretical Variable in the Age Periods .Cohort analysis of illegal behavior .jour .of Research in crime and Delinquency 29:178-199.
20. Nak, N E.R, James G.S & James H.W (1965). Text Book of Gynecology, 7th Edition. Baltimore: The Williams & Williams Company.
21. National Health Nutrition Examination Survey (1999).
22. Natu, M (1966) Study of Menstrual Pattern of Girls. Lndian Journal of Public Health, Poona. 10:75-77.
23. Nayar S. (1990). The Impact of School Health Education Programme on Personal Hygiene and

- Related Morbidities in Tribal School Children of Wardha District. Indian Journal of Community, 31.
24. Nayar S. Singh, Rao N. P. and Chaudhary D. R. (1990). Primary School Teacher as a Primary Health Care Worker. Indian J. Pediatrics 77 – 80.
  25. NCRT and Tmnari (Jan 1997) Situation of Girls & Woman in Delhi National Nutrition Monitoring Bureau.
  26. Nelson (1996). Textbook of Pediatrics Book I. 15th Edition, Bangalore: Prism Book pvt. Ltd.
  27. Nemar, M C Q (1957). Psychological Statistics. IInd. Edition, New York: John Willey & Sons.
  28. Neumann. Swendseid .Jacob (1979) Biochemical evidence of thiamin deficiency in young children .Amm Jour Clinical Nutrition .32:99-104.
  29. Nicholos Stephen – Brayon. The Penguin Dictionary of Sociology 4th Edition.
  30. Oelting, E R and Donnermeyer (1998). “Primary Socialization Theory the Etiology of Drug & Deviance. Substance Use & Misuse. 33(4)995-1025.
  31. Reinken, L and Droese, Stolley H (1979). Biochemical Assessment of Thiamin Nutrition in Childhood. European Journal of Pediatrics. 131 (4)229-235.
  32. Thakkar, R C (1985). Study of adjustment & Insecurity Feeling among Adolescents of Two Types of Families. Journal of Education & Psychology. 43 -54.
  33. Wood Ward David R (1985). What Sort of Teenager has Low Intakes of Energy Nutrients? British Journal of Nutrition.53:241-249
  34. World Health Statistics (1987) Annual Report WHO.

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