 Stud Tribes Tribals, 9(2): 133-138 (2011)

An Assessment of Health Status of Adolescent Gujjar Tribal Girls of Jammu District

Rajni Dhingra

Post Graduate Department of Home Science, University of Jammu, Jammu 180 004, Jammu and Kashmir, India

KEYWORDS Tribal. Adolescent Girls. Health. Anemia. Malnutrition. Body Mass Index

ABSTRACT The present study investigates the health status of Tribal (Gujjar) adolescent girls. The sample for the study comprised of 200 girls in the age group of 13-15 years. Both nomadic and semi-nomadic Gujjars were included. A combination of snowball and random sampling technique was used for the selection of the sample group from various areas of Jammu district of Jammu and Kashmir state. Clinical assessment was conducted to look for the symptoms of various ailments (anemia, malnutrition, hypertension, respiratory rate and other pathological signs). The results of the study revealed that adolescent Gujjar tribal girls enjoy a balanced emotional status along with capacity for strenuous physical activity. The data of the study showed that the body mass index (BMI) of the majority (88.1%) of the subjects was low (less than18 $kg/m^{2.}$) indicating the highest prevalence of malnourishment among girls of 13 yrs of age. 96(48%) subjects had systolic blood pressure below 100. The observations for the signs and symptoms of anemia and malnutrition indicated that 90 percent of the subjects had pale cold skin, 89.5 percent had general weakness and 86.5 percent had yellow conjunctiva. Majority (90.5%) of the respondents showed clear cut presence of anemia having hemoglobin less than €10gm/dl. The results hold implications for professionals to introduce health programmes in order to improve the health of adolescent girls in particular.

INTRODUCTION

Adolescence is a significant period of human growth and maturation. Adolescence is the most vulnerable stage from the point of view of health. In a country like India, adolescent girls face serious health problems due to socio-economic, environmental conditions, nutrition and gender discrimination. A vast majority of girls in India are suffering from either general or specific morbidities (Balasubramaniam 2005).

Diet and health are synonymous with the well- being of an individual. In absence of proper and adequate nutrition, a person can develop several developmental malformations. Many research studies (Bahl et al. 1994; Jain 1999 and Babitha 2003) have documented that malnutrition affects body growth and development, especially during the crucial period of adolescence. Under-nutrition among adolescent girls can severely limit their growth spurts (Kanani et al. 1997; Brabin and Brabin 1992). As per a report published by International Centre for Research on Women (ICWR), anaemia is a very serious problem among adolescent girls in India. Under- nutrition among adolescent girls can cause serious problem of anaemia. From the total of 11 countries covered in the study, it was revealed that 60% - 70% of the adolescent girls were anaemic. Anaemia is commonly found in adolescent girls during the time they are menstruating (ICRW 1994). In another study, it was seen that in comparison to urban girls, a higher percentage of rural girls (37.5%) especially below the age of 12 years showed evidence of anaemia, irrespective of the menarcheal status (Vasanthi et al. 1994). Iron deficiency anemia has been found higher in females than males and by the time they attain menarche 25–50% girls become anemic (Nutrition Foundation of India 1990). Several other studies have also led to similar conclusion (Chiplonkar et al. 1992; Kanani 1994; Anand et al. 1999).

Many Indian studies have pointed out that iron requirements increase during adolescence, especially in developing countries because of infections, diseases and parasitic infestations that cause iron loss, and because of low bioavailability of iron from diets. Girls in low income communities have typically been reported to have Hb (hemoglobin) levels less than 10g/L and low iron status negatively affects their body functions (Brabin and Brabin 1992; Kanani et al. 1997).

Apart from low hemoglobin count, there are several other indicators of health which vary with nutritional status. The age of onset of menarche has also been found to vary according to nutritional status. As the nutritional status improves, the age at menarche is lowered. The relationship between nutritional status and age of menarche has been established in many studies

(Abioye et al. 1999; Singh et al. 2001; Acharya et al. 2006).

One of the most important factors which affect the health of adolescent is the environmental conditions. Recurrence of diseases due to poor environmental conditions especially in rural and tribal communities affects the various indicators of growth and development in adolescents. Many of these problems creep in due to lack of awareness among adolescents regarding the diseases and their prevention. Studies carried under Common Wealth Youth Program, Chandigarh 1997 and by Centre for operations Research and Training (CORT) 1999 and ICRW (2006) have recommended that there is need for providing information to youth so that they are better informed and better adjusted to their changing physical biological and health needs.

Keeping in view the salient findings of research studies, it was felt that an effort in this regard for understanding the health needs and status of adolescent girls of Jammu region needs to be made since such data was not found to be available for this region. The research was planned for adolescent girls in the age group of 13-15 years of Gujjar Tribe from Jammu and Kashmir region of India. This is one of the tribes known for being educationally backward and unexposed to modern influences. Gujjars form the third largest majority in the state and pursue pastoral life since ages. Gujjars follow their traditional occupation of rearing cattle, goats and sheep. Their conditions have remained unchanged and they follow mostly their traditional customs and face many problems especially related to specific and general morbidities. A large majority of members in Gujjar community are limited to religious education mostly at home (Kaur et al. 2003). This study gives an insight to the health profile of Adolescent girls of Gujjar tribe which would help planner and policy maker to plan various health programmes. It would also help them in promoting the awareness level of girls related to their health. The specific objectives of the study were:

- Provide an overall framework about the general health status of the adolescent Gujjar girls.
- Assess height and weight to study the body mass index of the adolescent Gujjar girls.
- Evaluate blood pressure, pulse and respiratory rate to rule out any heart ailment and general physiological problems among the sample group.
- Examine the hemoglobin level of sample adolescent girls to assess status of anaemia and malnutrition in adolescent Gujjar girls.

METHODOLOGY

The core sample for the present study comprised nomadic and semi-nomadic Gujjar (Tribal) adolescent girls in the age group 13-15 years. A total of 200 girls from this group were selected using random sampling technique from various areas around Jammu district of Jammu and Kashmir state. Since Gujjar house clusters are located in fields/open areas in far flung locations, initially these clusters were identified and information related to the availability of the adolescent girls was obtained. A list of families with at least one adolescent girl in the age range of 13-15 years was prepared. Then by random sampling technique (lottery method) the desired sample was drawn. The sample was drawn from Gujjar tribe of Jammu and Kashmir (J and K), residing in and around Jammu District. The areas from where the sample was drawn included R.S. Pura, Akhnoor, Nagrota and Bari-Brahmana of Jammu district. Since the sample group is nomadic, these were the areas of their temporary settlement at the time of the present study. Clinical assessment was undertaken for the signs of various ailments (anaemia, malnutrition, hypertension, respiratory rate, and other pathological signs) by the medical team. Proforma was constructed by the medical experts to record the data obtained. During the medical experts team visit, individual administration was done by the medical personnel. In addition all the subjects were interviewed regarding their food habits, daily intake of various food items and life style pattern and their physical examination using anthropometric tools (measuring tape, weighing machine) was undertaken. The observations regarding their general health status, nutritional status, body mass index and diseases present if any were recorded in a proforma. To examine their heamoglobin level a laboratory technician was engaged to collect blood sample.

RESULTS AND DISCUSSION

The results of the present research have been presented under various sections. These sections provide an overview of health status of adolescent Gujjar girls.

Profile of the Respondents

Out of total 200 adolescent girls, the maximum number that is, 76 (38%) were in the age group of 13 years, 70 (35%) were in the age group of 15 years and the rest 54 (27%) were in the age group of 14 years. Regarding their educational status, it was seen that maximum girls that is, 129 (64.5%) were illiterate, 51 (25.5%) could read and write, 15 (7.5%) were in primary school classes and only 5 (2.5%) of the total subjects were in middle school classes.

Health Status

Observations regarding their health status (Table 1) shows that majority 175 (87.5%) had good sleep, 22 (11%) revealed disturbed sleep while only 3 (1.5%) had insomnia. 141 (70.5%) were in habit of excessive physical exertion, 54 (27%) showed moderate physical exertion and 5 (2.5%) were having mild physical exertion. The data regarding their bowel habits shows that 109 (54.5%) had regular bowel habits, 70 (35%) were having irregular bowel habits and 21 (10.5%) were constipated. The status of digestion was observed and it shows that 93 (46.5%) were having normal digestion, 72 (36%) had indigestion and 35 (17.5%) were having complaint of loss of appetite. None of the subject reported addiction to any kind of drug. 195 (97.5%) subjects reported being emotionally stable while 5 (2.5%) subjects reported that they were emotionally disturbed most of the time. Majority (75%) of the subjects reported no signs of illness in the past while 25% subjects revealed different illnesses during the past.

Table 1: Health status of adolescent girls

S. No.	*Observations*	*No.*	*Percentage*
1.	*Sleep*		
	Good	175	87.5
	Disturbed	22	11.0
	Insomnia	3	1.5
2.	*Physical Exertion*		
	Excessive	141	70.5
	Moderate	54	27.0
	Mild	5	2.5
3.	*Bowel Habits*		
	Regular	109	54.5
	Irregular	70	35.0
	Constipated	21	10.5
4.	*Digestion*		
	Normal	93	46.5
	Indigestion	72	36.0
	Loss of Appetite	35	17.5
5.	*Emotional Status*		
	Stable	195	97.5
	Disturbed	5	2.5
6.	*History of Illness*		
	Present	50	25.0
	Absent	150	75.0

Built

Observations regarding the built of the subjects under the study show that 70 (92.1%) subjects in the age group of 13 years were having lean built and only 6 (7.8%) subjects were having medium built. 35 (64.8%) subjects in the age group of 14 years were having lean built, 18 (33.3%) subjects were having medium built and only 1 subject (1.8%) were having heavy built. In the age group of 15 years, 28 (40%) subjects were having lean built and 42 (60%) subjects were having medium built (see Table 2).

Body Mass Index

Body mass index (BMI) from the sample group was calculated on the basis of the observations of their weight and height. BMI was defined as weight (in kilograms) / (height^2 [in meters] and international cut-off for BMI were used for classification of subjects as malnourished/malnutrition (BMI below 18.0 Kg/m^2),

Table 2: Distribution according to built

S. No.	*n*	*Age group*	*Built*	*Number*	*Percentage*
1.	76	13 years	Lean	70	92.1
			Medium	6	7.8
			Heavy	0	0
2.	54	14 years	Lean	35	64.8
			Medium	18	33.3
			Heavy	1	1.8
3.	70	15 years	Lean	28	40.0
			Medium	42	60.0
			Heavy	0	0

normal 18<BMI>25kg/m^2), over weight (25 <BMI<30 kg/m^2) and obesity (BMI>30kg/m^2) (WHO 1995).

Observations regarding the BMI showed that out of 76 subjects in the age group of 13 years, 69 (88.1%) subjects were in the range of low BMI undernourished/malnourished and only 9 (11.8%) subjects were in the range of normal BMI. Out of 54 subjects in the age group of 14 years showed that, 27 (50%) subjects were in the range of low BMI or malnourished, 48.1% subjects were in the range of normal BMI and 1 (1.8%) subject was overweight. Out of 70 subjects in the age group of 15 years, 21 (30%) subjects were in the range of low BMI or undernourished/malnourished, 47 (67.1%) subjects were in the range of normal BMI and 2 (2.8%) subjects were overweight (Data in Fig. 1). In other words, the BMI profile of the subjects indicated that majority 117 (58.5%) were malnourished having BMI less than 18 kg/m^2 with highest prevalence among 13 years of age. Further, only 82 (41%) had normal BMI while a meager 3 (1.5%) were overweight.

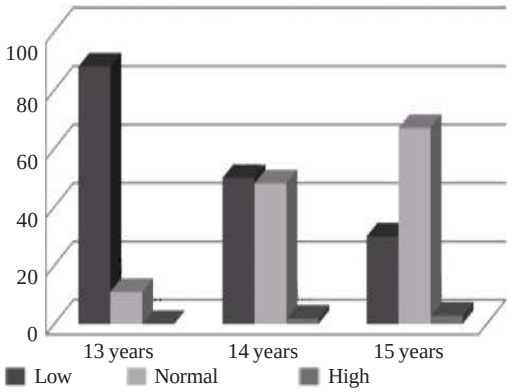

Fig. 1. Distribution according to body mass index

Vital Signs

Observation regarding the vital signs that is, Blood Pressure, Pulse and Respiratory Rate of all the subjects under study were made and recorded in proforma. Observations show that majority (48%) of subjects were having their systolic blood pressure below 100, followed by 46.5% of the respondents having blood pressure between 101-120, only 5% were having between 121 – 140, and only one (0.5%) subject had systolic blood pressure above 140. The maximum number of subjects that is, 177 (88.5%) had their diastolic blood pressure between 61-80, 7 (3.5%) had 60 and below, 14 (7%) subjects had between 81-100 and 2 (1%) were having their diastolic blood pressure above 100.

Observations of resting pulse rate show that maximum of the subjects that is, 156 (78%) were having their pulse rate between 81-100/minute while 20 (10%) of the subjects were having between 61-80/minute, 23 (11.5%) were having between 101-120/minute and only 1 (0.5%) was having above 120/minute.

The resting respiratory rate of maximum of the subjects that is, 102 (51%) was between 21-30/ minute, of 2 (1%) was 20 and below /minute, of 88 (44%) was between 31-30/ minute and of 8 (4%) it was between 41 and above /minute (Table 3).

Table 3: Observation of vital signs among adolescent girls

S. No.	*Vital signs*	*Group*	*Number*	*percentage*
1.	*Blood Pressure (mm of Hg.)*	*Systolic*		
		Below 100	96	48.0
		101 – 120	93	46.5
		121 – 140	10	5.0
		Above 140	1	0.5
		Diastolic		
		Below 60	7	3.5
		61 – 80	177	88.5
		81 – 100	14	7.0
		Above 100	2	1.0
2.	*Pulse Rate (per minute)*	60 – 80	20	10.0
		81 – 100	156	78.0
		101 – 120	23	11.5
		Above 120	1	0.5
3.	*Respiratory Rate (per minute)*	20 and below	2	1.0
		21 – 30	102	51.0
		31 – 40	88	44.0
		41 and above	8	4.0

Clinical Assessment of Anemia and Malnutrition

The assessment regarding anemia and malnutrition was made on the basis of their physical examination and questionnaire. The observations are shown in Table 4. Blood examination for hemoglobin of all the subjects was done by laboratory technician. A fingerstick blood sample was collected to determine hemoglobin concentration using a hemoglobinometer. The observations for the signs and symptoms of anemia and malnutrition Table 4 reveal that majority (90%) were having pale cold skin, 86.5 percent had yellow conjunctiva, 68 percent showed rapid heart rate while 64.5 percent were having

fast breathing. The other health related ailments reported by the respondents were 67.5 percent low blood pressure, 76 percent were having the complaint of fatigue, 89.5 percent complaint of general weakness, 16 percent were having complaint of dizziness followed by heart murmurs (17%), black, sticky and foul smelling stools (39.5%), spleenomegaly (31%) and weight loss (26.5%)

Table 4: Signs and symptoms of anemia and malnutrition

S. No.	*Signs and symptoms of anemia and malnutrition*	*No.*	*%*
1.	Pale cold skin	180	90.0
2.	Yellow conjunctiva	173	86.5
3.	Rapid heart rate	136	68.0
4.	Fast breathing	129	64.5
5.	Low blood pressure	135	67.5
6.	Fatigue	152	76.0
7.	General weakness	179	89.5
8.	Dizziness	32	16.0
9.	Heart murmurs	34	17.0
10.	Black, sticky and foul smellingstools	141	70.5
11.	Spleenomegaly weight loss	53	26.5

Data shown in Table 5 depicts hemoglobin level of subjects under the different age groups of study. The Hb status of respondents revealed a clear cut presence of anemia among majority (90.5%) of the respondents.

In the age group of 13 years the hemoglobin level of 2 (2.6%) subjects out of total 76 subjects revealed severe anemia as their Hb level was below or upto 7 gms/dl. Majority (67.2%) of the subject were having moderate anemia as they fall in 7-10 Hb gm/dl level followed by 22.4 percent of subjects, who had mild anemia (between 10-12 gm/dl). Only 7.8 percent were having normal Hb level (12 gm/dl and above) in this age group.In age group of 14 years the hemoglobin level of 4 respondents (7.4%) revealed severe anemia. 68.5 percent were moderately anemic followed by 16.7 percent of the respondents who were having mild anemia and of 4 (7.4 percent) subjects, the hemoglobin level was 12 and above and they had normal Hb level.The Hb status of respondents in the age roup of 15 years revealed majority (58.6%) of the subjects had moderate anemia followed by mild anemia (25.8%). Others 2.8 percent of the subjects had severe anemia and 12.8 percent had normal Hb levels.It was observed that out of the entire sample the minimum level of Hb was 6gm/dl whereas maximum Hb level was 13.5 gm/dl.

Overall, it was revealed that 8 (4.2%) respondents were having severe anemia, 129 (64.7%) were falling in moderate anemia, 44 (21.6%) were having mild anemia and only 19 (9.3%) were having normal Hb levels out of the entire sample group of 200 adolescent girls.

The Gujjar adolescent girls comparatively enjoy a sturdy health as a lineage from their genetic tree (Kumar A and Kumar N 1998). The results of the present study indicates that along with poor socio-economic and environmental conditions, the Gujjar adolescent tribal girls were physically strong as their general health status allows them to undertake strenuous physical activity. Along with the physical wellness, the adolescent girls of Gujjar tribe also enjoy a balanced emotional status. The data of the study revealed that neither the Gujjar girls were obese nor did they have stunted growth. But, majority (58.5%) of the subjects from the entire sample was malnourished having BMI less than 18 kg/m^2 with highest prevalence among 13 years of age. The probable factors responsible for this state of affairs were their poor socio-economic status, food habits and excessive physical labour. The observations for the signs and symptoms of anemia and malnutrition revealed that out of total 200 subjects majority (90%) of the subjects were having pale cold skin, general weakness (89.5%) and were having yellow conjunctive (86.5%). They were followed by other sign

Table 5: Percentage distribution of hemoglobin levels of the respondents

S. No.	*No.*	*Age group*	*Hemoglobin in gms%*							
			Upto 7 gm/dl (Severe anemia)		*7-10 gm/dl (Moderate anemia)*		*10-12 gm/dl (Mild anemia)*		*12gm/dl and above (Normal)*	
			No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
1	76	13 yrs.	2	2.6	51	67.2	17	22.4	6	7.8
2	54	14 yrs.	4	7.4	37	68.5	9	16.7	4	7.4
3	70	15 yrs.	2	2.8	41	58.6	18	25.8	9	12.8
		Total	8	4.2	129	64.7	44	21.6	19	9.3

and symptoms such as rapid heart rate (68%), fast breathing (64.5%), low blood pressure (67.5%), fatigue (76%) etc. From the results regarding hemoglobin levels, it was observed that majority (90.5%) of the respondents show clear cut presence of anemia and few (9.5%) had normal hemoglobin level. Many studies (Chiplonkar 1992; Kanani 1994; Anand 1999) revealed that majority (46%) of the rural and economically disadvantaged girls in the age group of 9-16 years had low levels of hemoglobin and were classified as anemic.

CONCLUSION

Overall on the basis of the data available, it was concluded that there is need for planning of health programme for Gujjar community. Since the group of the study was nomadic, it is important to have health services at their doorsteps. The planner need to educate and implement health services at their doorsteps, which could help them to lead healthy life. A focussed approach to develop awareness regarding their health in general is required so that preventive measures can be taken to protect the young population from major illnesses.

ACKNOWLEDGEMENT

The authors acknowledge the support provided by Indian Council for Social Science and Research (ICSSR), New Delhi for providing grant (F.No.5-16/2003 GEN/RP-NEP) for conducting research project. The present paper is a part of data presented n the project.

REFERENCES

Abioye-Kuteji EA, Ojofeitimi EO, Aina OI, Kio F, Alukoy MO 1999. The influence of socio-economic and nutritional status on menarche in Nigerian school girls. *Nutritional Health*, 11(3): 185-95.

Acharya A, Reddaiah UP, Baridalyne N 2006. Nutritional status and menarche in adolescent girls in an urban resettlement colony of South Delhi. *Indian Journal of Community Medicine*, 31(4): 10-12.

Anand K, Kant S, Kapoor SK 1999. Nutritional status of adolescent school children in rural north India. *Indian Pediatrics*, 36(8): 810-815.

Babitha B 2003. Nutritional status of adolescent girls and impact of short term food supplementation with special reference to vitamin A and hemoglobin. *Journal of Community Guidance and Research*, 20(2): 121-131.

Bahl L 1994. Nutritional status, social awareness and attitude towards marriage of adolescents in a tribal ICDS Block of Himachal Pradesh. *Indian Pediatrics*, 31(9): 1094-1097.

Balasubramanian P 2005. Health needs of poor unmarried adolescent girls. A community based study in rural Tamil Nadu. *Indian Journal of Population Education*, 28-29: 18-33.

Brabin L, Brabin BJ 1992. The cost of successful adolescent growth and development in girls in relation to Iron and Vitamin A Status. *Am Journal of Clinical Nutrition*, 55: 955-958.

Centre for Operations Research and Training (CORT) 1999. *Health of Pregnant Women and Adolescents in India. Review of Literature. A Summary Report*. Baroda: Author

Chiplonkar S, Joshi S, Kanade A, Veena C, Rao S 1992. Physical work performance and nutritional status of rural adolescent Indian children. In S Rao, A Kanade (Eds.): *Proceedings of National Workshop on Adolescence: Need for Critical Appraisal*. Pune Maharashtra, India: Department of Biometry and Nutrition, Agharkar Research Institute, pp. 58-65.

Common Wealth Youth Program 1997. *Adolescent Reproductive and Sexual Health: A Situational Analysis*. Chandigarh: Common Wealth Youth Program: Asia Centre.

ICRW 2006. *Intervention Needed to Break 'Silence on Reproductive Health'*. A report.

ICRW 1994. *The Nutrition and Lives of Adolescent in Developing Countries*. Findings from the Nutrition of Adolescent Girls Research Program. Washington: Author

Jain SP 1999. Body Weight and nutritional status of adolescent school children in rural north India. *Indian Pediatrics*, 36(8): 810-815.

Kanani S 1994. Combating anemia in adolescent girls: A report from India. *Mothers and Children*, 13(1): 1-8.

Kanani S, Ghanekar J 1997. *Anemia and the Adolescent Girl: A Review of Some Research Evidence and Inter-vention Strategies*. Department of Foods and Nutrition. M.S. University of Varoda and UNICEFF, India.

Kaur A, Manhas S, Dhingra R 2003. Play Activities among Gujjar children. *Man in India*, 83 (3 and 4): 393-405.

Kumar A, Kumar N 1998. Gujjar Bakerwal – The eco-friendly tribals of Jammu and Kashmir since centuries. *Bull Ind His Med*, XXVIII: 139-145.

Nutrition Foundation of India 1990. Scientific Reports. Cited from Babitha B 2003. Nutritional status of adolescent girls and impact of short term food supplementation with special reference to vitamin A and hemoglobin. *Journal of Community Guidance and Research*, 20(2): 121-131.

Singh N, Mishra CP 2001. Nutritional status of adolescent girls of a slum community of Varanasi. *Indian Journal Public Health*, 45(4): 128-134.

Vasanthi G, Pawashe AB, Susie H, Sujatha T, Raman L 1994. Iron nutritional status of adolescent girls from rural area and urban slum. *Indian Pediatrics*, 31(2): 127-132.