



Morbidity Profile of Tribal Gujjar Children of Udhampur District of J&K

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Abstract: The present study was carried out with the objectives of documenting the morbidity pattern of the children and identifying the determinants of childhood morbidity. The sample for the study comprised 150 children in the age group of 3-6 years, their mothers and a supplementary group of 50 community leaders, religious preachers and health workers belonging to semi-nomadic Gujjar tribe residing in Udhampur district of Jammu and Kashmir Union Territory. The entire sample was drawn through a combination of random and purposive sampling technique from five villages of Udhampur. Morbidity Status checklist, Interviews and Focus Group Discussions were used for data collection. The findings reveal that gastro-intestinal infections, diarrhea, fever, respiratory tract infections along with anemia, dental problems, eye infections, skin infections and worm infestations were the most common ailment/s encountered by the children. Anemia, tuberculosis and whooping cough were more prevalent among the female children than the males. A multitude of factors were noted to influence the morbidity status of the sample preschool aged children. Child determinants such as their poor nutrient intake (as compared to the RDA) and low immunization status; maternal factors such as her age at marriage, age at delivery, place of delivery, inter pregnancy interval, and educational status; and community specific factors such as their life style and belief system, living conditions, financial status, and access to health care and supplementary nutrition were all noted to impact the health status of the children.

Index Terms: Gujjar Tribe, Children, Morbidity, Health, Determinants.

I. INTRODUCTION

Tribals constitute 8.6% of Indian population as per the Census report of 2011. Indigenous populations are routinely marginalized and deprived of their access to fundamental resources. Inferior health outcomes among these communities can in part be attributed to inadequate access to health care facilities and medical services (Mohankumar, 2009). Malnutrition is one malaise afflicting the tribal children. Widespread malnutrition exposes these children to infection and infectious diseases,

resulting in high mortality among them (Maharatna, 2005). A child born to a Scheduled Tribe family has 19 per cent higher risk of dying in the neonatal period and 45 per cent risk of dying in the post-neonatal period compared with other social classes (NIMS, ICMR and UNICEF, 2012). Infant mortality among tribals was 84.2 in comparison to 67.6 per 1000 for the general population in 2002. Child mortality was 46.3 in comparison to 29.3 for the general population. Childhood vaccination reached a mere 26.4 per cent in comparison to 42.0 per cent for the general population. Health indices like birth-weight, life-expectancy at birth, infant mortality rate, prevalence of various diseases are evident pointers to poor condition of tribal children. Chronic energy deficiency can be seen among school going children, adolescent boys and girls and women of reproductive age of tribal communities. Around 70-80 per cent of the tribal population seem to suffer from various stages of anaemia – mild, moderate or severe (Xaxa, 2011).

Among the scheduled tribes of India, mortality, morbidity and malnutrition rates remain particularly high when compared to the Indian population at large (Office of the Registrar General and Census Commissioner of India, 2004; IIPS, 2000). Nearly 40.6% of the tribals live below the poverty line (Census report, 2011). Tribal children, suffer from ill-health due to nutritional deficiencies, lack of safe drinking water and sanitary hygiene, and poor access to health care. This is reflected in high rates of Infant Mortality Rates (IMR), Child Mortality Rates (CMR) and also low enrolment ratios in schools, high drop-out etc, and thus low level of achievement (Nayar, 2011). Malnutrition is one of the major cause of mortality and morbidity in young children under 6 years of age not only in India but all over the world (Blossner, 2005; Bain et al, 2013; WHO, 2015).

Researches point that diseases vary depending on the environmental and social-cultural practices (Narain, 2019; Basu, 2000). Widespread poverty, illiteracy, unsafe drinking water, malnutrition, poor maternal and child health services and ineffective coverage of national health and nutritional services have been traced out in several studies as possible contributing

factors to dismal health conditions prevailing among the tribal population in India. About half of the Indian tribal pre-school children are malnourished and are exposed to a high risk of functional impairments (Radhakrishna and Ravi, 2004).

Giri et al (2008) noted that the prevalence of overall morbidities among tribal children of Maharashtra was 34.7% and it was higher in female as compared to male children. Among individual morbidities, the prevalence of acute respiratory infections was the highest, followed by acute diarrhoeal diseases, conjunctivitis, and skin infections. Similarly, Divakar et al (2012) also reported nutritional deficiencies, skin infections, diarrheal disorders followed by dental disorders among tribal children of Mysore.

In Jammu & Kashmir, four communities, namely Gujjar, Bakarwal, Gaddi and Sippi were notified as the Scheduled Tribes vide the Constitution (Scheduled Tribes) Order (Amendment) Act, 1991. Out of the total twelve (12) Scheduled Tribes, Gujjar is the most populous tribe in J&K having a population of 763,806, thus forming 69.1 percent of the total ST population. They form an important ethnic and linguistic group of the UT and constitute 8.1 percent of the total population.

II. MATERIALS AND METHODS

A. Sample Size and Description: The sample for the study was divided into three groups

Group I: The core group was 150 preschool aged children i.e., 3-6 year olds belonging to Gujjar tribe. Their current health status was assessed through nutritional assessment and morbidity profiling.

Group II: 150 mothers of Group I preschooler aged children constituted this group. They were the key informant about their child's nutritional status and also provided information related to their own variables and their community.

Group III: 50 Community Members and Service Providers comprising of representatives of the Gujjar community, religious preachers, primary health centre's medical and paramedical staff; health care workers and Anganwadi workers were also included.

B. Sampling Technique: A combination of purposive and random sampling technique was used for sample selection. Udhampur block of Udhampur district has 41 villages, out of which 08 demarcated areas have high concentration of semi-nomadic Gujjar tribe. Out of these 5 areas namely Battal Ballian, Camp Area, Dhal Par, Dhandal and Kharodiyar were selected by lottery method. From these villages 30 mother-child dyads each were selected randomly. 10 community representatives per village were however selected purposively.

C. Tools for Data Collection:

1) *Morbidity Status Checklist:* This Checklist was developed by referring to the WHO guidelines and was used to identify the current (spread over one week prior to data collection) and past

(spread over last 6 months to 1 year) diseases and illnesses encountered by the sample Gujjar children

2) *Anthropometric Measurements:* Weight for age, height for age, and chest circumference were recorded for each sample child.

3) *Interview Schedule for Mothers:* The schedule contained questions related to the dietary intake and food consumption pattern of their children, child's immunization status, home environment and resource availability, maternal educational and economic status, age at marriage, age at 1st delivery, inter pregnancy interval, cultural and religious beliefs on child care, accessibility of medical facilities and supplementary nutrition.

4) *Group Discussion with Community Members and service providers:* Discussions were carried out about the morbidity pattern among children of their community and also about the possible causes for it. They were also required to deliberate about the general lifestyle of the community, food consumption pattern and other health related issues.

III. RESULTS AND DISCUSSION

The findings of the study are presented and discussed as follows:

A. Identification Information: This section contains information pertaining to the age of the sample children, their locale wise distribution, their family size, and number of siblings.

1) *Age of Sample Children:* Table I shows that the sample Gujjar children were in the age group of 3-6 years. The mean age of the children was 4.60 ± 1.12 years. 45.33% were 4-5 years old, 28% were 5-6 years old and 26.66% were 3-4 years old. The mean age of the boys was 4.69 ± 1.06 years and of the sample girls was 4.50 ± 1.18 years.

Table I. Age of Sample Children

AGE	Boys (n=75)	Girls (n=75)	Total (n=150)
3-4 yrs	20 (26.66%)	20 (26.66%)	40 (26.66%)
4-5 yrs	31 (41.33%)	37 (49.33%)	68 (45.33%)
5-6 yrs	24 (32%)	18 (24%)	42 (28%)
χ^2 between boys and girls= 1.387, $p=0.499$, insignificant			

2) *Locale of the Sample Children*

Table II. Locale of the Sample Children

Village	Boys (n= 75)	Girls (n = 75)	Total (n= 150)
Dhal Par	20 (26.66%)	17 (22.66%)	37 (24.66%)
Battal Ballian	18 (24%)	14 (18.66%)	32 (21.33%)
Camp Area	12 (16%)	18 (24%)	30 (20%)
Kharodiyar	15 (20%)	15 (20%)	30 (20%)

Dhandal	10 (13.33%)	11 (14.66%)	21 (14%)
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From table II it is evident that the entire sample was selected from five villages of Udhampur district namely, Dhal par (24.66%), Battal Ballian (2.33%), Camp area (20%), Kharodiyan (20%) and Dhandal (14%).

3) Number of Siblings in the Family

Table III. Number of Siblings

Number	Boys (n= 75)	Girls (n = 75)	Total (n= 150)
1-3	17 (22.66%)	23 (30.66%)	40 (26%)
4-6	34 (45.66%)	33 (44%)	67 (44.66%)
7-10	24 (32%)	19 (25.33%)	43 (28.66%)
χ^2 between boys and girls= 1.496, p=0.473, insignificant			

The number of children in the selected families ranged between 2 to 10, pointing towards the trend of having a large number of children among the selected tribal community. Table III shows that most of the children (44.66%) had 4 to 6 siblings, followed by 28.66% cases where there were 7 to 10 siblings. Birth control and birth spacing both were poor among the Gujjars.

4) Family Size of Sample Children

Table IV. Family Size of Children

Family Size	Boys (n= 75)	Girls (n = 75)	Total (n= 150)
Small	15 (20%)	16 (21.33%)	31 (20.66%)
Medium	35 (46.66%)	32 (42.66%)	67 (44.66%)
Large	25 (33.33%)	27 (36%)	52 (34.66%)
χ^2 between boys and girls= 0.244, p = 0.88, insignificant			

Data in Table IV reveals that most (44.66%) of the sample children belonged to medium size families, having 5 to 8 family members. Here the family usually comprised of a young couple with their children and their old parents. 34.66% of them had large families, with a minimum of nine and maximum of 12 members.

B. Morbidity Profile of Sample Children: Morbidity is related to the quality of being unhealthy and hence refers to having a disease or a symptom of disease, or to the amount of disease within a population. In countries like India childhood morbidities are a major cause of mortality among children.

1) Current and Past Disease/ Illness Status of Sample Children

Table V. Current and Past Disease/ Illness Status of Children

Disease	Boys (n=75)		Girls (n=75)		Total (n=150)	
	Current Status	Past 6- 12 months	Current Status	Past 6- 12 months	Current Status	Past 6- 12 months
Respiratory Tract Infections	12 (16%)	37 (49.33%)	18 (24%)	39 (52%)	30 (20%)	76 (50.66%)
Diarrhea	2 (2.66%)	49 (65.33%)	4 (5.33%)	45 (60%)	6 (4%)	94 (62.66%)
Fever	9 (12%)	51 (68%)	7 (9.33%)	35 (46.66%)	16 (10.66%)	86 (57.33%)
Worm Infestation	9 (12%)	18 (24%)	6 (8%)	14 (18.66%)	15 (10%)	32 (21.33%)
Malaria	--	3 (4%)	--	2 (2.66%)	--	5 (3.33%)
Measles	1 (1.33%)	6 (8%)	2 (2.66%)	10 (13.33%)	3 (2%)	16 (10.66%)
Anemia	19 (25.33%)	18 (24%)	26 (34.66%)	41 (54.66%)	45 (30%)	59 (39.33%)
Skin Infection	7 (9.33%)	19 (25.33%)	10 (13.33%)	19 (25.33%)	17 (22.66%)	38 (25.33%)
Eye infections	13 (17.33%)	27 (36%)	9 (12%)	20 (26.66%)	22 (14.66%)	47 (31.33%)
Tuberculosis	-	3 (4%)	2 (2.66%)	9 (12%)	2 (1.33%)	12 (8%)
Whooping cough	3 (4%)	9 (12%)	5 (6.66%)	17 (22.66%)	8 (10.66%)	26 (17.33%)
Pneumonia	2 (2.66%)	11 (14.66%)	4 (5.33%)	18 (24%)	6 (4%)	29 (19.33%)
Gastrointestinal Infections	22 (29.33%)	52 (69.33%)	19 (25.33%)	42 (56%)	41 (27.33%)	94 (62.66%)
Dental Problems	27 (36%)	29 (38.66%)	21 (28%)	28 (37.33%)	48 (32%)	57 (38%)

Results in Table V reveal that at the time of data collection 27.33% of the children suffered from various gastric problems. GI infections manifested as abdominal pain, vomiting, cramps etc were common. 29.33% boys and 25.33% girls were currently suffering from these. 20 % of the children had respiratory tract infections as indicated through difficulty in breathing, nasal blockage, chest congestion, and pain in chest. In 32% children (36% boys and 28% girls) dental problems such as dental caries, molten teeth, broken teeth, and bleeding gums were clearly visible. 30% of the children evidently showed the symptoms of anemia, and further these symptoms were more evident among the girls (34.66%) than the boys (25.33%). Skin problems such as patchy skin, itchy skin, flaky skin, pigmentation and rashes were also seen in 22.66% children. In some cases ring worm infections and fungal infection were also observed. 14.66% children had problems related to their eyes which included watery eyes, redness and conjunctivas. Apart from these around 10% each of the children also suffered from fever, worm infestations, and whooping cough.

Past morbidity record reveals that majority of the children suffered from gastro-intestinal infections and diarrhea (62.66% each), followed by fever (57.33%) and respiratory tract infections (50.66%). More boys had gastro intestinal infections, diarrhea and fever, while more girls suffered from respiratory infections. 39.33% of the children were found to be anemic and further this number was higher for girls than the boys. Dental problems affected 38% of the children and eye related problems were found in 31.33% of the children. Skin infections occurred in 25.33% of the cases and worm infestations in 21.33% cases. 19.33% and 17.33% children suffered from pneumonia and whooping cough respectively. Measles, malaria and tuberculosis were reported to have occurred only in 10.66%, 3.33% and 8% of the sample Gujjar children.

2) Number of Sick Days:

Table VI. Sickness load of the sample Children

Sickness Load	Boys (n= 75)	Girls(n= 75)	Total (n= 150)
Low	45 (60%)	36 (48%)	81 (54%)
Medium	25 (33.33%)	27 (36%)	52 (34.66%)
High	5 (6.66%)	12 (16%)	17 (22.66%)

Overall majority of the children had low sickness load and were sick for less than 2 days per month or 24 days/year. Only 22.66% children reportedly had high sickness load. There was significant difference in the sickness load between sample boys and girls. Comparatively more girls had high sickness load, while more boys had low sickness load.

3) Health Conditions requiring Hospitalization

Table VII. Health conditions requiring Hospitalization

Condition	Boys (n=75)	Girls (n=75)	Total (n=150)
Acute Respiratory Tract Infection	7 (9.33%)	2 (2.66%)	9 (6%)
Gastro-intestinal Infection	3 (4%)	2 (2.66%)	6 (4%)
High Fever	4 (5.33%)	7 (9.33%)	11 (7.33%)
Measles	1 (1.33%)	--	1 (0.66%)
Eye Infection	1 (1.33%)	--	1 (0.66%)
Pneumonia	2 (2.66%)	3 (4%)	5 (3.33%)
Tuberculosis	1 (1.33%)	4 (5.33%)	5 (3.33%)
Accidents/ Injury	8 (10.66%)	2 (2.66%)	10 (6.66%)

Data in Table VII shows that the rate of hospitalization of the sample children in the last one year was too low. Despite many of these children facing acute health problems such as tuberculosis, pneumonia, respiratory tract infections etc, they hardly had been hospitalized for treatment. Some children were taken to the hospital for treatment but were not admitted because of apathy of the doctors and parental low faith in allopathic treatment.

C. Child Related Variables:

1) Dietary pattern of the children: The meal pattern of the sample children was analyzed through 24-hour recall method. Most of these boys (57%) and girls (52%) were vegetarian. Consumption of pulses, seasonal vegetables, and milk and milk products was minimal. Their diets comprised mainly of rice or alternately they ate rotis made of maize or bajra flour with some pulse or locally available vegetables. Pickles and chutneys comprised a main part of their diet. Local berries like Toot, Druni, Khajuri and Amlok were taken by the children.

Table VIII reveals that as compared to ICMR standards mean intake of all sample children was lesser than the RDA. The mean intake of energy, proteins and fats was found to be comparatively lesser for girls than the boys.

Table VIII. Nutrient Consumption of the Children

Nutrients	BOYS (n= 75)		GIRLS (n = 75)		TOTAL (n = 155)	
	Mean Intake	RDA	Mean Intake	RDA	Mean Intake	RDA
Energy (kcal)	1243± 11.35	1690	1202± 9.76	1690	1222.5±10.59	1690

Protein (gms)	18.3 ±2.11	30	16.6± 2.02	30	17.4 5±2.00	30
Fat (gms)	15.6± 1.22	25	14.3± 2.17	25	14.9 5±1.75	25

2) Immunization Status of the Children

Table IX. Immunization Status of the Children

Immunization Status	Boys (n=75)	Girls (n=75)	Total (n=150)
Absent	51 (68%)	49 (65.33%)	100 (66.66%)
Partial	13 (17.33%)	17 (22.66%)	30 (20%)
Complete	11 (14.66%)	9 (12%)	20 (13.33%)

Table IX shows that most of the children (66.66%) did not receive any immunization. This trend continued for both the boys and girls separately as well. Only 13.33% of them had completed their immunization. The reasons cited for incomplete or no immunization was distance to health centre, reported uselessness of it and fear of immunization.

3) Nutritional Status:

Table X. Nutritional Status of Gujjar Children

Anthropometric Indicators	Boys (n = 75)	Girls (n = 75)	Total (n = 150)
Weight Status			
Under weight (<-2.00: Below normal)	55 (73.33%)	58 (77.33%)	113 (75.33%)
Normal (-2.00 to +2.00)	20 (26.66%)	17 (22.66%)	37 (24.66%)
Overweight (>+2.00: Above normal)	--	--	--
χ^2 between boys and girls= 0.323, p=0.56, insignificant			
Height Status			
Stunting (<-2.00: Below normal)	42 (56%)	48 (64%)	90 (60%)
Normal (-2.00 to +2.00)	33 (44%)	27 (36%)	60 (40%)
Above Normal (>+2.00)	--	--	--
χ^2 between boys and girls= 1.00, p= 0.317, insignificant			
Chest Circumference Status			
Normal (1 to -1)	23 (30.66%)	21 (28%)	44 (29.33%)

Mild Malnutrition (-1 to -2)	20 (26.66%)	22 (29.33%)	42 (28%)
Moderate Malnutrition (-2 to -3)	23 (30.66%)	25 (33.33%)	48 (32%)
Severe Malnutrition (<-3)	09 (12%)	07 (9.33%)	16 (10.66%)
χ^2 between boys and girls= 0.477, p=0.92, insignificant			

Table X contains data on the nutritional status of the children. Majority of them (75.33%) were underweight. There was no significant difference in the weight of the sample boys and girls.

Overall 60% of the children were stunted and had below normal height as compared to the normative height. Stunting was more common in girls (64%) than boys (56%), but statistically this difference was not significant.

Chest circumference readings reveal that 32% of the children suffered from moderate malnutrition, 28% had mild malnutrition and 10.66% had severe malnutrition. The remaining 29.33% of the sample children were not malnourished. Calculation of chi-square reveals no significant difference in the malnutrition status of sample boys and girls based on their chest circumference.

D. Maternal Factors:

Table XI reveals that currently, most (41.33%) of the mothers of the sample children were in the age group of 25-30 years, followed by 29.33% in the age group of 20-25 years and 22.66% in the age group of 30-35 years. The mean age of the mothers was noted to be 27.4±4.2 years.

There was low level of literacy among Gujjar females, as most of them were illiterate (78%), only 15.33% were primary pass and 4.66% were matriculate. Economic reasons coupled with non availability of schools led most women to remain illiterate or have low level of education.

In the selected community there was a trend of getting the girls married off at a young age. 38.66% of the mothers had been married before they turned 18 years old, followed by 30.66% of them getting married between their 18th and 20th birthday. This trend led to most (31.33%) of them delivering their first child before they themselves turned 18 years old.

Table XI. Maternal factors

Maternal Variables	n = 150	
Current Age of Mother (in years)	N	%
20-25	44	29.33%
25-30	62	41.33%
30-35	34	22.66%
35-40	10	6.66%

<i>Educational Qualification</i>		
Illiterate	117	78%
Primary Pass	23	15.33%
Matriculate	07	4.66%
Higher Secondary	03	2%
<i>Age at Marriage</i>		
Under 18 years	58	38.66%
18-20 years	46	30.66%
20-22 years	29	19.33%
22-24 years	17	11.46%
<i>Age at 1st delivery</i>		
Under 18 years	47	31.33%
18-20 years	42	28%
20-22 years	42	28%
22-24 years	19	12.66%
<i>Inter pregnancy Interval</i>		
Less than 1 year	35	23.33%
1-2 years	56	37.33%
2-3 years	47	31.33%
More than 3 years	12	8.00%
<i>Place of Delivery</i>		
Institutional	17	11.46%
Home based with traditional delivery expert	79	52.66%
Home based without traditional delivery expert	54	36%

The female respondents mentioned that family planning methods weren't practiced in their community. In majority cases (37.33%) there was a gap of 1-2 years between the two successive deliveries, followed by 31.33% cases where this gap was between 2-3 years. Additionally, in 23.33% cases this gap was less than 1 year i.e., ranging between 9-12 months only. In cases where there was sufficient inter pregnancy interval it was mostly by default or due to health issues.

Home based deliveries were still most prevalent among the Gujjar tribe. In only 52.66% of the cases a traditional delivery expert was available to assist in the process of delivery. When such experts weren't available the older women in the household or neighborhood helped. Lower incidence of institutional deliveries was attributed to non availability of hospitals nearby, non availability of doctors and their cultural beliefs. Institutional deliveries were preferred only if there were some health complications either of the pregnant woman or her unborn child.

E. Community Specific Factors

An analysis of the development indicators as described in Table XII reveals that the five villages surveyed did not even have the basic facilities available. These villages were in the

interiors of Udhampur district with absolutely no or very limited road connectivity. Though some of the villages did have pucca houses, most members of the Gujjar community continued to live in kutch houses called kullas. Provisions for safe drinking water and toilet facilities were noted in only two villages. Facilities like hospital, post office, bank were completely unavailable. .

The community based survey revealed limited provision for health care and supplementary nutrition for the children of Gujjar community. There were primary health centers or sub centers in three villages but with limited medical and paramedical staff. The facilities at the health centers and dispensaries were very limited in scope. Out of the five villages, two each had Anganwadi center and mobile preschool facility and in one village there was a primary school. Very few children were attending these centers and receiving supplementary nutrition.

Table XII. Community Specific Factors

<i>Community Variables</i>	<i>Dhal Par</i>	<i>Battal Ballian</i>	<i>Cam p Area</i>	<i>Khar odiy an</i>	<i>Dhan dal</i>
<i>Standard of Living/ Development Indicators*</i>					
Pucca House	N	N	N	N	N
Electricity	Y	Y	Y	Y	Y
Clean Drinking Water	N	N	N	Y	Y
Toilet and Sanitation	N	Y	N	Y	N
Road Connectivity	N	N	N	Y	N
Transport	N	N	N	Y	N
Hospital	N	N	N	N	N
Post Office/ Bank	N	N	N	N	N
Community Centre	N	N	N	Y	N
<i>Access to Health Care</i>					
PHC/ PHSC	1	1	-	-	1
Medical Aid Centre	1	1	-	-	-
Community Health Centre	-	-	-	1	-
Maternity & Child Health Care Centre	-	-	1	-	-
Medical Dispensary	-	-	1	-	1
Ayurvedic/Homoeopathic Centre	-	-	-	-	-
<i>Access to Supplementary Nutrition</i>					
Anganwadi centre	1	1	-	-	-
Mobile preschool	-	-	1	-	1
Primary School	-	-	-	1	-
<i>Type of Preferred Medical Treatment*</i>					

Allopathic	N	N	N	N	N
Ayurvedic/Homeopathic	N	N	N	N	N
Indigenous methods	Y	Y	Y	Y	Y
Any other	Y	Y	Y	Y	Y

* These indicators are explained in terms of their presence (Y= Yes) or absence (N= No)

The most preferred mode of treatment continued to be indigenous coupled with some inputs from religious leaders. Use of holy threads and water, taweez, and other similar methods of protecting oneself against evil eye were commonly followed. Locally available medicinal shrubs were used against various non communicable diseases such as intestinal worms, gastric problems, chest pain, ring worm, colic pain, cough and cold, bone and joint pain, inflammation, skin related problems, fracture, cuts and wounds. Additionally, the community leaders reported that the most common reason for not going to these health centres/ preschool centres was non availability of the concerned staff, distance, apathetic and indifferent attitude of the medical staff.

F. Variables impacting Childhood Morbidity: Four indicators of morbidity namely – Current morbidity status, past morbidity status, sickness load and hospitalization status were correlated with seven child determinants namely – energy consumption, protein intake, fat intake, immunization status, weight, height and chest circumference; six maternal variables namely- current age, educational qualification, age at marriage, age at 1st delivery, inter pregnancy interval and place of delivery; and four community related factors namely- standard of living, access to health care, access to supplementary nutrition and preferred mode of medical treatment.

Results reveal that current and past morbidity status were not only significantly correlated with each other but also with sickness load, energy consumption, protein intake, immunization status, maternal age at marriage, maternal educational status, maternal age at delivery, place of status, standard of living, access to health care and access to supplementary nutrition. Sickness load was highly correlated with hospitalization status, immunizations status, maternal age at delivery, inter pregnancy interval, standard of living, access to health care and access to supplementary nutrition. Similarly the hospitalization status of the children was highly correlated with their energy consumption, maternal age at marriage, her educational qualification, inter pregnancy interval, place of delivery and standard of living. The findings highlight that childhood morbidity is influenced by multiple factors some related directly to the children, others to their mothers and community.

CONCLUSION

Morbidity profile of the sample children reveals that at present many of the children had dental problems, gastrointestinal infections, anemia, skin infections and respiratory tract infections, while in the past the most common ailment encountered were gastro-intestinal infections, diarrhea, fever, respiratory tract infections along with anemia, dental problems, eye infections, skin infections and worm infestations. Conditions like pneumonia, and tuberculosis were also reported among these children. However, unlike other parts of India where many children contract malaria and measles, there was a lesser incidence of these problems in the Gujjar community. Rao et al (2005) and Chopra and Makol (2004) also reported that majority of the tribal children suffer from upper respiratory tract infection, skin problems, diarrhoeal diseases and show clinical signs of anemia. Ramachandran and Gopalan (2006) also reported that under nutrition is associated with impaired immune function and consequent increased susceptibility to infections.

The mean intake of energy, protein and fats of Gujjar children is below the RDA as approved by ICMR, New Delhi. Further, the mean intake of the girls was lower than the boys. Unsatisfactory food intake and recurrent infections leads to malnutrition among children. Padmanabhan and Mukherjee (2016) had found similar results in their study on tribal children of Tamil Nadu. Just like Khargekar et al (2015), Kurane and Swathi (2018) who reported that the level of immunization continues to be poor among tribals in India, here also similar results were found.

Most females of the Gujjar community were married young with little or no education. Becoming mothers at a tender age with no family planning and limited access to health care puts both their and their unborn child's life at danger. These results are similar to those forwarded by Hamel et al (2015), and Girma and Genebo (2002) in their respective studies. Sahu et al (2015) also pointed that mother's age at child birth, sex of the child, birth order, birth interval, household wealth status, and region of residence are significant factors associated with childhood morbidity and mortality among the scheduled tribes.

Factors associated with the community such as their life style, economic status, belief system, and access to health care and supplementary nutrition were also noted to influence the health of the children. Similarly Tibilla (2007) in a study carried out on children of Ghanna also reported that there are social, cultural and economic factors that are highly related to the malnutrition and morbidity status of the children.

Gujjars as a community were found to be dependent on their live -stock financially. Semi nomadic life style, poverty and illiteracy along with diligent and rigid following of old traditions, customs and rituals make the community highly vulnerable. They continue to rely on their indigenous medical system that is heavily based on religious belief system and use of herbs and shrubs. Praharaj (2011) reported that tribal people use magico-religious

and herbal medicine for their treatment. Until the Gujjar community utilizes the medical and educational resources available their children will remain susceptible to malnutrition and morbidity.

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