NUTRITIONAL STATUS AND FEEDING PRACTICES OF SABAR TRIBAL CHILDREN IN BANKURA DISTRICT, WEST BENGAL, INDIA

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Abstract: Malnutrition is one of the acute problems among children. According to WHO, maternal health refers to the health of women, especially during pregnancy, childbirth, and the postnatal period. The present study shows the prevalence of malnutrition among 0-5 aged children who belong to the Sabar tribal community. This was accessed by anthropometric measurements, parenting, and feeding practices. Weight, height, chest circumference, and mid-upper arm circumference (MUAC) were measured. Data were analyzed by calculating HFAZ, WFHZ, WFAZ, and PI. According to the MUAC range, age and sex-specific nutritional status of the study population indicates that 47.06% of boys and 52.94% of girls were in the category of severe or acute malnutrition. The highest number of girls were severely malnourished. Boys were more stunted (HFAZ $\leq$ -2SD) while girls were more underweight (WFAZ $\leq$ -2SD) compared to boys. Maternal educational status, occupational status, and feeding practices are significantly associated with malnutrition.

Keywords: severe malnutrition, mother, BMI, child, Z score, health, tribal

Introduction

Nutritional deficiencies are widely prevalent globally and contribute significantly to high rates of morbidity and mortality among infants, children, and mothers in underdeveloped countries. Several contributory factors like poverty, lack of purchasing power, food insecurity, and limited general knowledge about appropriate nutritional practices increase the risk of undernutrition in developing countries also. The most recent estimates indicate that 178 million children younger than five years are stunted, representing 32% of all children worldwide, and a further 19 million have severe acute malnutrition (SAM) (Khan and Bhutta, 2010).

Malnutrition is one of the acute problems among children. Nearly half of all deaths in children under five occur due to undernutrition. According to the Union Minister for Women and Child Development, there were 927,606 severely acute malnourished children in India in 2021.[1] The first National Family Health Survey (NFHS) in 1992-1993 found that India was one of the worst-performing countries on child health indicators. Malnutrition has become the major contributor to the under-five mortality rate in India. According to the NFHS-4, the percentage of wasted, stunted, and malnourished children in 2015-16 stood at 21, 38.4, and 35.4, respectively (DTE staff, as told to parliament, July 29, 2021). And as reported by NFHS-5, stunting has reduced from 38.4% to 35.5%, wasting has declined from 21.0% to 19.3%, and the underweight prevalence line went down from 35.8% to 32.1%.

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From 1992 – 93 to 2005 – 06, there was a marginal improvement in stunting in India, with the proportion of stunted children dropping from 50.20% to 41.40%. Each year approximately 2.3 million deaths among 6-60 months aged children in developing countries are associated with malnutrition, about 41% of the total deaths in this age group (Sahu *et al.*, 2015). According to National Family Health Survey (NFHS-IV) conducted in 2014-15, the prevalence of being underweight, stunting, and wasting in India is 35.8%, 38.4%, and 21%, respectively. The current under-five mortality rate in India is 36.2. Most of the deaths in under five are due to malnutrition. Stunting is more prevalent than being underweight and wasting. Stunting indicates chronic malnutrition (Khobragode *et al.*, 2020). India, a developing country, covers 40% of the undernourished children in the world, and undernutrition is significantly occurring due to insufficient availability of proper nutrient food (Dakshayani and Gangadhar, 2015). According to WHO, malnutrition refers to deficiencies, excesses, or imbalances in a person's intake of energy and nutrients. The term malnutrition covers two broad groups of conditions. One is undernutrition which includes stunting (height for weight), wasting (weight for age), acute malnutrition (low MUAC), and underweight (low weight for age). Child malnutrition estimates for the indicators stunting, wasting, overweight and underweight describe the magnitude and patterns of undernutrition and overnutrition. UNICEF-WHO-WB Joint Child Malnutrition estimates inter-agency group updates regularly the global and regional estimates in prevalence and number for each indicator. In 2020, 149.2 million children under five years of age were too short for their age (stunting), 45.4 million were too thin for their height (wasting), and 38.9 million were too heavy for their height (overweight). Against this backdrop the present study envisages to determine the nutritional status of 0-5 aged children based on anthropometric measurements and their feeding practices. For the present study, a questionnaire was divided into three categories: **A.** general information, **B.** feeding practices and parenting, **C.** anthropometric measurements.

Materials And Method

Study Area

The study was carried out in the southern division of Bankura district in West Bengal, India. Bankura has international fame for the 'Bankura Horse' - a terracotta-crafted horse, and for Dashabatar Tash (the historical paintings). The area of Bankura, Purulia, and West Medinipore, Jhargram districts of West Bengal is still colloquially referred to as 'Jungle Mahal.' There are four divisions of the Jangle Mahal. The forest divisions are – North Division, South Division, Panchet Division, and working plan South Division *ii.* Studied villages are standing in the lap of the forest where the sabar tribal community lives. These villages are far from the town, and some are at the end of the forestland in the Bankura district. Data has been collected

from 22 villages namely Baropaya, Sagorbhanga, Banskanali, Katiyam, Salboni, khudakanali, and bor danga, along with others and adjacent villages were studied. These are under the police station of Barikul and Ranibandh.
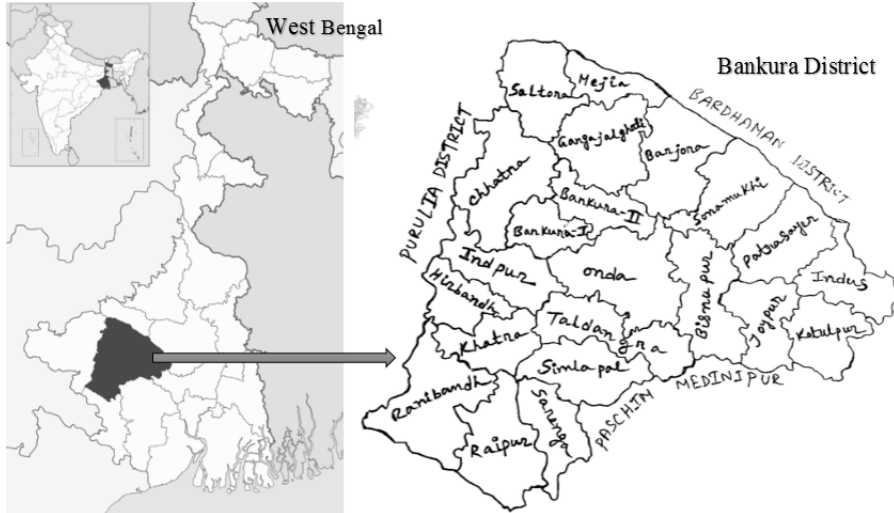

Figure -1: Location map of the study area [Source: Drawn by author after Google image (state map and district map)]

Study population

The Sabars are an ancient community that finds frequent references in Hindu mythology and Hindu classics. They are one of the Adivasis of the Munda ethnic group of tribes who live mainly in Odisha and West Bengal. During the colonial period, they were classed as one of the 'Criminal tribes' under the Criminal Tribes Act of 1871 by the government. In modern times, they suffer from social stigma and ostracism. The present study consists of 211 mothers and 356 children from 22 villages of the south Bankura division. They make and sell plates by tying shawl leaves and earn by day labour. Some people work in paddy fields while others do collections from the jungles and sell mahua *However Madhuka Longifolia* to earn money.

Study design

Door-to-door survey and a cross-sectional study were carried out from 1st September to 30th September 2022 among mothers and their infants aged 0-5 years. A sample of 356 children (183 boys and 173 girls) was selected by random sampling technique. Apart from the anthropometric measurements of the infants, information on various factors assessed directly or indirectly the nutritional status of the study population.

The quantitative study was done with a questionnaire schedule, which included socio-economic information and some baseline information about maternal-child health and infant feeding. 211 mothers were interviewed and the various data were collected using measuring instruments. These were undertaken using WHO standard techniques. The height and the weight of mothers and infants were measured using a stadiometer, a stature meter, and a weighing machine, respectively. Measuring and MUAC tapes were used to measure children's chest and mid-upper arm circumferences.

Data analysis

Statistically, mean, SD (standard deviation), and Z scores were derived using a formula. Data were analysed by using MS Word, Excel, and Calculator. Nutritional status was determined by measuring MUAC (upper arm mid circumference) and calculating HFAZ (height for age z score), WFHZ (weight for height z score), WFAZ (weight for age z score), BMI (body mass index), PI (Ponderal index).

According to WHO, Body Mass Index (BMI) is a simple index of weight for height that is commonly used to classify the degree of fatness, and chronic energy deficiency (CED) is defined as a steady state at which a person is in energy balance, although at a 'cost' either in terms of health risk or as an impairment of functions and health. It is calculated as a person's weight in kilograms divided by the square of a person's height in meters (kg/m^2). For adults, an ideal BMI is in the 18.5 - 24.9 range. When it is 25.0 – 29.9, it will fall within the overweight range. If it is 30.0 or higher, it will be obese. Simultaneously, there are three classifications of CED. 17.0 – 18.4 means CED mild; 16.0 – 16.9 means CED moderate, whereas < 16.0 means CED severe.

Child wasting or acute malnutrition refers to a child who is too thin for his height and is the result of recent rapid weight loss or the failure to gain weight. The prevalence of wasting is the weight for height < -2 standard deviation from the median according to the Child Growth Standards among children under five years of the World Health Organization (WHO). Wasting is measured based on a child's weight relative to their height.

According to UNICEF-WHO-WB, the prevalence of stunting among children under five years of age (% height-for-age ≤ -2SD), overweight (% weight-for-height ≥ +2SD), underweight (% weight-for-age ≤ -2SD), wasting (% weight-for-height ≤ -2SD) and severe wasting (% weight-for-height ≤ -3SD) were observed.

Height-for-age reflects achieved linear growth, and its deficits indicate long-term, cumulative inadequacies of health or nutrition. Two related terms – length and stature are used. The length refers to the measurement in a recumbent position and is often used for children under 2-3 years of age who cannot stand properly. Standing height refers to stature. This index is an indicator of past undernutrition or

chronic malnutrition. According to Waterlow (1976), the percent of median height-for-age (stunting) <85% means severe malnutrition, 85% **-** 89% shows moderate, 90% **-** 95% indicates marginal, whereas 95%+ defines normal. The formula is the height (cm) = age (year) × 6.5 + 76 (cm).

Weight-for-age reflects body mass relative to chronological age. Weight-for-age is complex as the height of the child (HFA) and weight (WFA) make its interpretation very complex. A low WFA index identifies the condition of being underweight for a specific age. The advantage of this index is that it may reflect both past (chronic) and present (acute) undernutrition. For infants < 12 months: weight (kg) = (age in months +9)/2; for 1-5 aged children: weight (kg) = 2 × (age in years +5).

The ponderal index is an anthropometric statistic that combines the height and weight of an individual, similar to the body mass index. According to Livi's ponderal index, the ratio above 2.5 is (> 2.5) normal, 2 to 2.5 indicate borderline PEM, and less than 2 (< 2) indicates severe PEM (protein energy malnutrition). PI is a ratio of body weight to length used as an indicator of asymmetric fetal growth status. PI assumes that the length is unaffected by changes in nutritional status - for infants, $100 \times$ weight (grams)/height^3 (cm).

[> 2.5 = Term, AGA baby; < 2 = Asymmetrical IUGR (severe PEM); > 2 = Symmetrical IUGR.]

Result

It has already been said that this study was conducted among 211 mothers and 356 infants with 0-5 years in the villages of the south division of Bankura. Among 356, boys were 183 whereas 173 were the number of girls. According to the total age range, the mean (±SD) of boys and girls was 3 (±1.6) and 2.9 (±1.5). On the other hand, the means (±SD) of height and weight of all mothers were 150.39 (±8.7) and 40.28 (±5.6), respectively.

TABLE – 1: DISTRIBUTION OF SOCIO-DEMOGRAPHIC CHARACTERISTICS AMONG THE STUDY POPULATION [SOURCE: FIELDWORK]

Variables		Frequency	Percentage (%)
Educational status	Illiterate	89	42.19
	Class I – IV	95	45.02
	Class V – VIII	22	10.43
	Class IX – X	5	2.37
Monthly income	Up to Rs 3000	88	41.71
	Rs 3000 – Rs 4000	103	48.82
	Rs 4000 – Rs 5000	20	9.48

Occupation	Day labour	154	72.99
	Shawl tying	112	53.08
	Cultivate in others' field	84	39.81
	Cutting firewood	14	6.64
	Selling mahua	6	2.84
Lavatory facility	Open field	191	90.52
	Common bathroom	7	3.32
	Separate bathroom	13	6.16
Source of water	Tube well	161	76.30
	Water tank	50	23.70

Table-1 reveals the highest percentage of mothers had education levels up to the primary. They were from low to middle-income families. Most of the mothers (72.99%) were day labourers, and a few (2.84%) were able to earn money from selling mahua. The highest percentage of the subjects had the open field as their lavatory facility. 76.30% of the study population used tube wells rather than water tanks for drinking water.

TABLE- 2: FEEDING PATTERNS OF SABAR CHILDREN (N=356) [SOURCE: FIELDWORK].

Feeding pattern	No. of infants	Percentage of infants (%)
Immediately	147	41.30
After 1 or 2 hours	175	49.16
After 2/3 days	32	8.99
After 8/9 days	2	.57

This table shows that a higher proportion of children were fed after 1 or 2 hours and a small proportion (.57%) of infants were fed after 8/9 days.

TABLE- 3: THE DURATION OF BREASTFEEDING [SOURCE: FIELDWORK]

Duration	No. of infants	Percentage of infants (%)
Still	159	44.67
1 year	27	7.59
2 years	63	17.70
3 years	56	15.74
4 years	26	7.31
5 years	6	1.69
11 months	19	5.34

Source: The author

Most infants (44.67%) were still being fed during the study period. There was no significant difference between the percentage of children who stopped breastfeeding at one year and four. The percentage of the children (1.69%), who stopped breastfeeding at age 5, was negligible.

7.02% of children were fed by the wet nurse. 1.41% of infants were given expressed breast milk. 22.20% were given supplementary food like honey and rice water, boiled potato paste, roasted gram flour, boiled grapes and apple paste, biscuits paste, semolina or granulated wheat, smashed puffed rice, and water. 18.25% were given artificial milk, and 11.24% were given pre-lacteal food like milk powder, a mixture of goat's milk with 1/3 water, cow's milk, and clean water. 81.75% were given exclusive breastfeeding, 22.20% and 21.06% were given partial breastfeeding and formula breastfeeding, respectively. 21.35% and 8.43% showed age-appropriate breastfeeding and pre-dominant breastfeeding proportionately.

TABLE – 4: NUTRITIONAL STATUS OF THE STUDIED CHILDREN BASED ON MUAC [SOURCE: FIELDWORK]

MUAC Range	No. of children		Percentage (%)	
	Boys	Girls	Boys	Girls
<12.5 (severe)	72	81	47.06	52.94
12.5 – 13.5 (moderate)	71	56	55.91	44.09
>13.5 (normal)	40	36	52.63	47.37

As the above-mentioned table indicates that girls (52.94%) were more severely malnourished than boys (47.06%). On the other hand, the majority of boys (55.91%) stood on the borderline.

TABLE - 5: AGE-SPECIFIC DISTRIBUTION OF HEIGHT, WEIGHT, CHEST CIRCUMFERENCE, AND MUAC AMONG SABAR BOYS. [SOURCE: FIELDWORK].

Age	No. of children	Height (μ/SD)	Weight (μ/SD)	Chest circumference (μ/ SD)	MUAC (μ/SD)
0-1	32	58.94 (±10.7)	5.21 (±1.7)	40.03 (±4.9)	11.63 (±1.2)
1-2	19	73.87 (±8.8)	7.54 (±1.5)	45.42 (±2.3)	12.31 (±0.7)
2-3	30	85.85 (±9.8)	9.13 (±1.7)	47.38 (±1.7)	12.82 (±0.8)
3-4	29	99.13 (±7.4)	10.1 (±2)	48.34 (±3.6)	12.82 (±0.8)
4-5	73	108.17 (±7.1)	13.27 (±1.6)	51.19 (±3.5)	13.27 (±0.8)

TABLE - 6: AGE-SPECIFIC DISTRIBUTION OF HEIGHT, WEIGHT, CHEST CIRCUMFERENCE, AND MUAC AMONG SABAR GIRLS. [SOURCE: FIELDWORK]

Age	No. of children	Height (μ/SD)	Weight (μ/SD)	Chest circumference (μ/SD)	MUAC (μ/SD)
0-1	39	58.84 (±15.7)	5.13 (±1.7)	41.06 (±6)	11.52 (±1.4)
1-2	15	78.31 (±11.3)	7.3 (±1.3)	45.66 (±2.4)	12.21 (±0.6)
2-3	24	85.23 (±8.5)	8.81 (±1.7)	46.32 (±3.4)	12.55 (±0.8)
3-4	27	96.7 (±6.1)	10.6 (±1.6)	48.35 (±2.3)	12.88 (±0.7)
4-5	68	106.86 (±10.6)	12.61 (±2.3)	50.76 (±3.6)	13.24 (±0.9)

Tables 5 and 6 further reveal that the mean height among boys was higher than girls, and the mean weight among boys was greater than girls in all age groups except 3-4 years. The mean chest circumference among 0-1 and 1-2 aged boys was lower than girls except for the 2-3 and 4-5 age groups. The mean MUAC among boys was higher than girls except for the 3-4 age ranges.

TABLE -7: THE DISTRIBUTION OF BMI AND CED AMONG SABAR MOTHERS. (N=211) [SOURCE: FIELDWORK]

BMI Range	No.	Proportion (%)	μ/SD
Obese	1	0.48	Nil
Overweight	4	1.90	14.9 (±0.8)
Normal	78	36.97	20.14 (±1.6)
CED mild	37	17.54	17.63 (±0.4)
CED moderate	40	18.96	16.43 (±0.2)
CED severe	51	24.18	26.33 (±0.3)

In this population, most of the mothers were normal. There was no major difference between the percentage of CED moderate (18.96%) and CED mild (17.54%) mothers but 24.18% of mothers showed acute chronic energy deficiency. The proportion of obese and overweight was minor.

TABLE- 8: SEX-WISE DISTRIBUTION OF TRIBAL CHILDREN BY PI. (N=183- BOYS, 173-GIRLS) [SOURCE: FIELDWORK]

PI range	No. of boys	% of boys	No. of girls	% of girls
>2.5 (Term, AGA baby)	15	8.20%	19	10.98%
< 2 (Asymmetrical IUGR OR severe PEM)	147	80.33%	139	80.35%
>2 (Symmetrical IUGR)	21	11.48%	15	8.67%

Among 356 children, a large proportion of boys (80.33%) and girls (80.35%) suffered from severe PEM (Protein Energy Malnutrition). This table demonstrates that more girls belonged to the normal range of PEM than boys. Contrariwise, more boys were on the borderline compared to girls.

TABLE – 9: AGE-WISE AND SEX-WISE MEAN (±SD) OF PI AMONG SABAR TRIBAL CHILDREN. [SOURCE: FIELDWORK]

Age range	PI (Boys)	PI (Girls)
0-1	2.71 (±1.8)	3.16 (±2.7)
1-2	1.88 (±0.4)	1.56 (±0.5)
2-3	1.46 (±0.5)	1.39 (±0.1)
3-4	1.08 (±0.1)	1.14 (±0.2)
4-5	1 (±0.1)	1 (±2)

The distribution of Z scores for HFAZ, WFHZ, and WFAZ was illustrated in the above table. It was observed that mean Z scores for three nutritional indices are between -1 and -1.3. It suggested that the average height and weight of the children were lower ($\leq$ -2SD) than the median.

TABLE – 10: SEX-WISE DISTRIBUTION OF THE SABAR CHILDREN BY HEIGHT FOR AGE Z SCORE, WEIGHT FOR HEIGHT Z SCORE, AND WEIGHT FOR AGE Z SCORE. [SOURCE: FIELDWORK]

Nutritional status	Boys	Girls
HFAZ/Stunting	50.27%	39.31%
WFHZ/Wasting	10.38%	13.87%
WFAZ/Underweight	57.38%	84.39%

Data shows that in the study population, the maximal number of boys (57.38%) and girls (84.39%) were in the underweight (WFAZ $\leq$ -2SD score) category. The percentage of stunted (HFAZ $\leq$ -2SD score) Sabar boys was higher than girls, whereas the proportion of Sabar girls was more wasted (WFHZ $\leq$ -2SD score) compared to boys.

Discussion

Socio Economic Status (SES) is a 'fundamental cause' of health. SES consists of three components such as income, education, and occupation. Socio-economic status influences family dynamics, parental techniques, parental investment, and access to resources necessary for development. Higher SES correlates with better health. Table 1 illustrates the socio-demographic characteristics of the Sabar population. It represents educational status, monthly income, occupation, lavatory facility, and source of water. The literacy rate among mothers in this study population was low.

Among 211 mothers, 57.82% were up to school, whereas 42.19% were illiterate. The educational status was divided into – illiterate, primary (class I – IV), middle (class V – VIII), and secondary (class IX and X). The highest percentage (45.02%) of mothers had education levels up to the primary. 10.43% and 2.37% had up to middle and secondary. Their source of income was also very poor. The income group was categorized into – low-income group (monthly up to Rs 3000), moderate-income group (Rs 3000 – Rs 4000), and the high-income group (Rs 4000 – Rs 5000). This present study indicates that they were mainly from the low to moderate-income group, and 9.48% belonged to high-income families. Most of the mothers (72.99%) used to work for daily wages. The remaining others made a living by tying shawls (53.08%), cultivating others' fields (39.81%), cutting firewood (6.64%), and selling mahua (2.84%). The condition of the lavatory facilities was deplorable. 90.91% had open fields for defecation, whereas 3.32% had common bathrooms. The sources of drinking water were tube well (76.30%) and water tanks (23.70%).

63.77% of mothers gave birth to their children in the hospital. However, 36.24% were at home. They celebrated the purification ceremony ('Alokta' in the local name). After nine days, they had their babies' nail cut, haircuts, and baths. 33.33% of boys and 31.21% of girls were familiar with the cradle, which was made of the saree. The percentage of boys was 77.60%, and 80.35% of girls used to sleep on the floor ('bhui' in local term), whereas 22.40% and 19.65% of boys and girls used *khatiya* (sleeping cot), which was made up of wood and rope. 28.42% of boys and 28.32% of girls applied mustard oil on their navel. 53.08% of mothers were interested in chewing tobacco with slaked lime ('Khaini'), 'bhajan pura', which was made up of all tobacco ingredients with fennel, 'ajwain' (carom seeds), betel leaves, etc., whereas 11.85% used to take mahua (*Madhuca longifolia*). 69.19% used shawl chew sticks and neem chew sticks for brushing. 40.28% of mothers preferred brushing with paste. Some of them used charcoal too. 44.55% of mothers had Tuberculosis in their history.

Table-2 shows that most of the infants (49.16%) were fed after 1 or 2 hours. The lowest percentage of children (.57%) were fed after 8/9 days. Mothers fed 41.30% of offspring immediately, whereas 8.99% of children were fed after 2/3 days.

Table 3 represents that most of the infants (44.67%) were still being fed during the study period. 17.70% of children stopped breastfeeding at age two, whereas a small proportion (1.69%) stopped at five. The children who stopped at one year and four displayed almost the same percentage. 5.34% of infants stopped feeding when they were 11 month old.

According to WHO, < 12.5 is a sign of severe or acute malnutrition. The range of 12.5 – 13.5 is the warning sign or the borderline of malnutrition, whereas < 13.5 is the normal range. This present study showed the highest number of children were in acute signs of malnourishment.

Table-4 illustrates that girls were more severely malnourished than boys. The

percentage of malnourished girls was 52.94%, while boys were 47.06%. Among 183 boys, the percentage of children in the category of moderate and normal was 55.91% and 52.63%, respectively. In contrast, among 173 girls, 44.09% and 47.37% were moderate and normal proportionately.

The percentage of sabar male undernourished children aged one year was 60.12%. Female undernourished children (64.18%) were higher than boys. Female children of all ages were more undernourished compared to male children. 59.27%, 60.07%, 59.81%, 59.69%, 60.32% were in the age category of 2,3,4,5 and 6 years respectively. On the other hand, 64.18%, 63.27%, 64.11%, 64.05%, 63.56%, and 63.97% were the proportion of undernourished female children aged 1,2,3,4,5, and 6 years individually. (Mondal and Nandi, 2018).

According to age, the mean (SD) of height, weight, chest circumference, and MUAC are presented in tables 5 and 6. The result revealed that the mean height among boys was higher than girls and, the mean weight among boys was greater than girls in all age groups except 3-4 years. The mean chest circumference among 0-1 and 1-2 aged boys was lower than girls except for the 2-3 and 4-5 age groups. The mean MUAC among boys was higher than girls except for the 3-4 age ranges.

Table-7 reveals that 211 mothers were interviewed in this study. They were measured by using anthropometric instruments. Among them, 36.97% showed the normal BMI range, 17.54% of mothers were in the category of CED mild, and 18.96% and 24.18% of mothers were in the CED moderate and severe group individually. 1.90% of mothers revealed overweight, and only one mother (0.48%) was in the obese class.

The prevalence of undernutrition (BMI <16, CED grade III) for sabar adult females was 3.5%. CED grade II (BMI 16–16.9) was 10.5%, and CED grade I (BMI 17 - 18.4) undernutrition was 14%. 68.4% of adult females were normal BMI range, but 3.5% were in the overweight category (Mandal A, Roy D).

Table-8 displays that in this population, most of the boys (80.33%) and girls (80.35%) were suffering severe PEM (< 2). On the other hand, there were more girls (10.98%) who belonged to the normal range of PEM (>2.5) than boys (8.20%). More boys (11.48%) were on the borderline (> 2) compared to girls (8.67%).

The ponderal index of full-term newborns follows a normal distribution with a mean of 2.4 and a standard deviation of 0.45.

Table-9 illustrates that the mean of 17.49% of boys and 22.54% of girls were >2.4, whereas 82.51% of boys and 77.46% of girls showed < 2.4. The standard deviation of 33.88% of boys and 70.52% of girls were > 0.45. In contrast, 55.74% of boys and 29.48% of girls demonstrated < 0.45, but the SD of 10.38% of boys was equal.

Table-10 describes that most of the girls (84.39%) were highly suffering underweight (WFAZ ≤ -2SD) than boys (57.38%), whereas the proportion of

stunting (HFAZ ≤ -2SD) was higher in boys (50.27%) compared to girls (39.31%). 10.38% of boys and 13.87% of girls had a lower risk of wasting (WFHZ ≤ -2SD).

Among 517 boys, the majority of boys (65.5%) were in the underweight category compared to girls (60.9%), whereas the percentage of stunted boys (53.5%) and girls (51.6%) was more or less the same. There was no major difference between wasted girls (19.6%) and boys (23.8%). (Bisai *et al.*, 2010).

A comparative study of preschool children (34 studies, including 11 from indigenous groups, from India and nine from other countries) has shown that in the Indian subcontinent, the prevalence of underweight, stunting, and wasting were 93.3%, 86.6%, and 85.3% respectively among the Kivnaura (Himalayan Ecology), which was observed to be the highest among all the reviewed populations from India. On the other hand, the underweight, stunting, and wasting were 15.0%, 11.4%, and 10.8% separately among the Punjabi children (Punjab), which was observed to be the lowest. The reviewed studies of the other parts of the world (from Dhaka, Bangladesh) showed that the maximal prevalence of underweight, stunting, and wasting were 73.2%, 68.4%, and 31.2%, individually. 10.5%, 22.0%, and 2.9%, who were among the Salvador pre-school children of Central America, were in the underweight, stunting, and wasting categories. They showed the lowest. (Das and Bose, 2012).

Conclusion

This present study demonstrates the poor nutritional status of studied tribal children by using MUAC tape. Sabar girls of Bankura are suffering severe malnutrition compared to sabar boys. The proportion of stunted, wasted, and underweight children and their mother's nutritional status shows their nutritional range. This is observed that maternal educational status, occupational status, and feeding practices are significantly associated with malnutrition. This study population had an educational level up to class IV. They are occupationally backward. They have poor lavatory facilities. Therefore, their economic condition needs to be developed. The nutritional and health status of children needs improvement. Regular monitoring should be done to improve their health.

Notes

1. As told to parliament (July 29, 2021): Some 927,606 children in India are severely acute malnourished, (accessed by 2022, 3rd Nov.) followed by https://www.downtoearth.org.in/news/water/as-told-to-parliament-july-29-2021-some-927-606-children-in-india-are-severely-acute-malnourished--78188.

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