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Nutritional status of rural scheduled caste children in Bankura district of West Bengal, India

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Abstract

Children of scheduled caste families have worse nutrition and health status due to poor accessibility to health and nutrition related facilities. To assess the nutritional status of the scheduled caste children the present study was conducted in rural area of Bankura district in West Bengal. This community based cross-sectional study was employed on 185 scheduled caste children (6-10 years). A structured schedule was used for data collection. To assess the nutritional status of the children, three indices – underweight, stunting and wasting were used. To estimate the overall prevalence of undernutrition, Composite Index of Anthropometric Failure (CIAF) was determined. A child with stunting, wasting or underweight is considered to be in a state of undernutrition or ‘anthropometric failure’. Child with ‘no failure’ is considered as normal nourished. Student’s t-test was used to determine the sex difference in anthropometric parameters and χ^2 test was performed to find out the association among different groups. Result with $P < 0.05$ was considered as significant. The findings of this study highlighted high prevalence of underweight (46.49%), stunting (24.32%) and wasting (29.73%). The overall prevalence of undernutrition was 54.05% and the nutritional status of 45.95% children was normal. No significant sex differences were observed among different indices of nutritional status ($P < 0.05$). The present study highlights high prevalence of undernutrition among rural scheduled caste children.

Keywords: scheduled caste children, underweight, stunting, wasting, CIAF

1. Introduction

The Scheduled Caste (SC) is placed at the bottom of the social ladder of India. They are distributed throughout the country and constitute 16.6 per cent of the total population of India [1]. Due to their position in Indian caste system, this caste has been victimized of discrimination for centuries. They have been deprived from economic rights and social needs such as education and health. Such discrimination and deprivation has led to high level of poverty among scheduled caste population. Till now, this caste is the most vulnerable group in our country [2].

Children of scheduled caste families have worse nutrition and health status due to poor accessibility to health and nutrition related facilities. Due to caste associated discrimination, the prevalence of undernutrition is still higher in scheduled caste children than the children of higher castes [3]. Different socioeconomic and environmental factors like poverty, education and occupation of the parents, and access to health care facilities are also associated with childhood undernutrition [4]. The magnitude of undernutrition in scheduled caste children has not significantly changed in spite of various intervention measures initiated by the government of India [5].

Scheduled caste population is distributed in different districts of West Bengal including Bankura. This district is the habitation of 1,174,447 scheduled caste people which constitutes 32.7% of the total population of the district (Census 2011). Though many studies have been performed to investigate the nutritional status of the children, little attention has been given towards the nutritional status of the scheduled caste children in Bankura district. For this reason, the present study was conducted to assess the nutritional status of the scheduled caste children in rural area of this district.

2. Materials and Methods

2.1 Ethical consideration: Before the study, written permission was taken from different

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Gram Panchayats of Bankura district. Informed consent was also taken from the parents/guardian of the children.

2.2 Study design: A community based cross-sectional study design was employed to perform the present study. A total of 185 scheduled caste children aged between 6 and 10 years were the participants of the study. Children were selected from different villages by multistage random sampling. A structured schedule was used for data collection.

2.3 Assessment of nutritional status: To assess the nutritional status of the children, three indices – underweight, stunting and wasting were used. To determine these indices, at first two anthropometric parameters, weight and height of the children were measured using standard measurement

techniques. From these measurements, weight-for-age Z-score (WAZ), height-for-age Z-score (HAZ) and weight-for-height Z-score (WHZ) were calculated. Reference values of National Centre for Health Statistics (NCHS) were considered for such calculation. Using three Z-scores, the first three indices were defined as stunting (HAZ) = < - 2SD, underweight (WAZ) = < - 2SD and wasting (WHZ) = < - 2SD. To estimate the overall prevalence of undernutrition, another index, Composite Index of Anthropometric Failure (CIAF), was determined on the basis of seven categories of nutritional status as mentioned in table 1 [6, 7]. In this classification, a child with stunting, wasting or underweight is considered to be in a state of undernutrition or ‘anthropometric failure’. Child with ‘no failure’ is considered as normal nourished.

Table 1: CIAF classification of nutritional status

Groups		Description
No failure	A	Absence of wasting, stunting and underweight
	B	Presence of wasting only
Anthropometric failure	C	Presence of wasting and underweight
	D	Presence of wasting, stunting and underweight
	E	Presence of stunting and underweight
	F	Presence of stunting only
	Y	Presence of underweight only

2.4 Statistical analysis: Weight and height were expressed as means and standard deviations. Student’s t-test was used to determine the sex difference in anthropometric parameters and χ^2 test was performed to find out the association among different groups. Result with $P < 0.05$ was considered as significant.

Table 2: Anthropometric parameters of boys and girls

Parameters	Boys (N = 98)	Girls (N = 87)	t value
	Mean \pm SD	Mean \pm SD	
Weight (Kg)	19.05 \pm 3.27	19.75 \pm 3.24	1.459 ($P > 0.05$)
Height (cm)	118.04 \pm 7.86	120.21 \pm 6.96	1.977 ($P < 0.05$)

3. Results

In the present study, 185 scheduled caste children (6 – 10 years) were the participants of which 98 were boys and 87 were girls. Mean (with \pm SD) weight and height of the boys and girls is given in table 2. Though the mean weight of the girls was higher than the boys, but the difference was statistically insignificant ($P > 0.05$). The mean height of the girls was significantly higher than the boys ($P < 0.05$).

Nutritional status of the children was assessed in terms of underweight, stunting and wasting. It is presented in table 3. From this study, the sex combined prevalence of underweight, stunting and wasting was observed as 46.49%, 24.32% and 29.73% respectively. Though, differences in prevalence of different forms of undernutrition were noted in boys and girls, but these differences were not significant ($P > 0.05$).

Table 3: Nutritional status of the children

Sex	Nutritional status					
	Underweight		Stunting		Wasting	
	N	%	N	%	N	%
Boys (N=98)	50	51.02	23	23.47	30	30.61
Girls (N=87)	36	41.38	22	25.29	25	28.74
Total (N=185)	86	46.49	45	24.32	55	29.73
	$\chi^2=1.722; P > 0.05$		$\chi^2=0.083; P > 0.05$		$\chi^2=0.078; P > 0.05$	

Different subgroups of CIAF are presented in table 4. From this study, ‘no failure’ was noted only in 45.95% children. In sex wise consideration, ‘no failure’ was noted as 43.88% in boys and 48.28% in girls. Remaining 54.05% children

(56.12% boys and 51.72% girls) were the sufferer of single or multiple forms of ‘anthropometric failure’. In sex wise comparison, no significant differences were observed in different subgroups of CIAF between boys and girls ($p > 0.05$).

Table 4: Different subgroups of CIAF in children

Subgroups of CIAF	Nutritional status						
	Boys		Girls		Total		
	N	%	N	%	N	%	
No failure	43	43.88	42	48.28	85	45.95	
Anthropometric failure	Wasting only	2	2.04	7	8.05	9	4.86
	Wasting and underweight	23	23.47	13	14.94	36	19.46
	Wasting, stunting and underweight	5	5.10	5	5.75	10	5.41
	Stunting and underweight	15	15.31	15	17.24	30	16.22
	Stunting only	3	3.06	2	2.30	5	2.70
Underweight only	7	7.14	3	3.75	10	5.41	
	$\chi^2=6.737; P > 0.05$						

In the present study, children with 'no anthropometric failure' were considered as normal nourished and the children with 'anthropometric failure' were considered as undernourished.

Therefore, 45.95% children (43.88% boys and 48.28% girls) were normal nourished and remaining 54.05% children (56.12% boys and 51.72% girls) were undernourished (Figure 1).

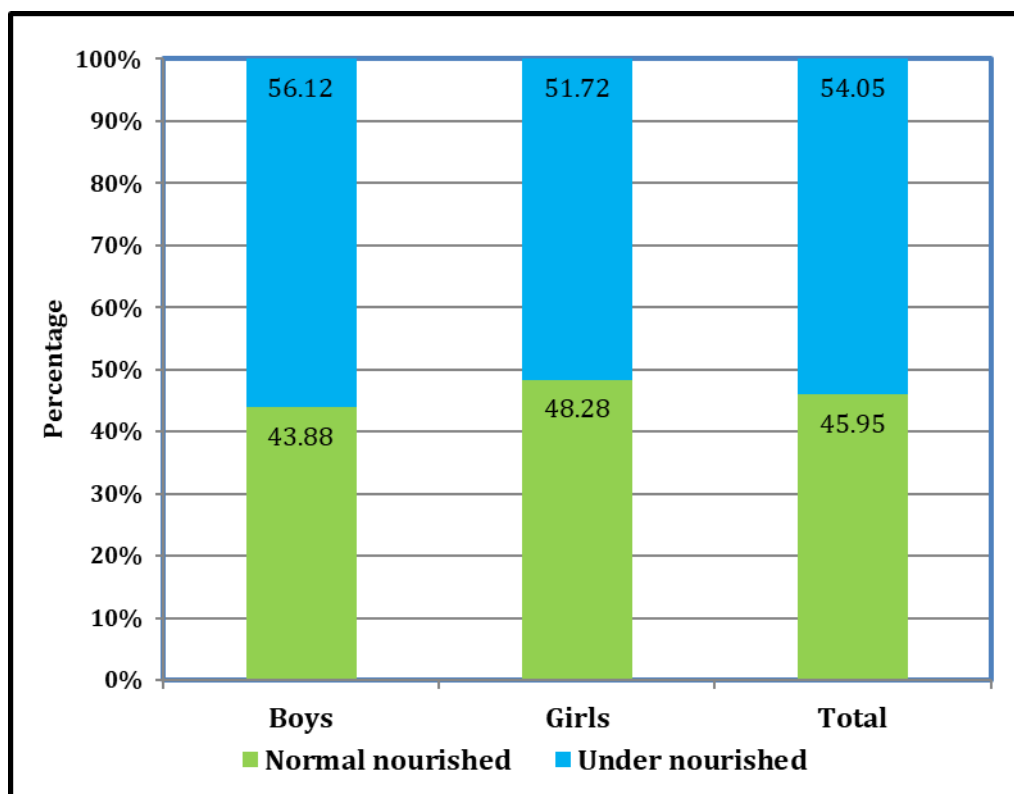


Fig 1: Overall nutritional status of the children

4. Discussion

Nutritional status is the condition of health of an individual as influenced by the consumption of nutrients and its utilization in the body [8]. It is considered as an important and positive indicator of health as well as growth and development [9]. For the assessment of nutritional status of scheduled caste children aged between 6 and 10 years, this study was conducted at some villages of Bankura district (West Bengal).

4.1 Mean weight and height: The nutritional status of scheduled caste children was assessed by measuring two anthropometric parameters -- weight and height. As shown in table 1, the mean weight and height were found higher in girls than boys. The observations of the present study were found to be comparable to other studies conducted at different parts of our country [10-12]. But, in some other studies, boys were found heavier and taller than girls [13, 14].

4.2 Prevalence of undernutrition: To find out the prevalence of undernutrition among scheduled caste children, we used three indices – underweight, stunting and wasting. The findings of this study highlighted high prevalence of underweight (46.49%), stunting (24.32%) and wasting (29.73%). In a similar study conducted in Rural Block of Kashmir, the prevalence of these three indices of undernutrition were 11.1%, 9.25% and 12.3% respectively [15]. In a recent study conducted at Rahtak in Haryana, the prevalence of these three indices of undernutrition were 27.5%, 16.8% and 23.7% respectively [16]. In comparison with these previous studies, higher prevalence of different forms of undernutrition were observed in our study. The probable cause of such higher prevalence of undernutrition was the poor socioeconomic condition of the scheduled caste families.

4.3 Overall nutritional status: Overall nutritional status of the scheduled caste children were judged from CIAF which can provide the information regarding overall prevalence of undernutrition. In the present study, the nutritional status of 45.95% children was normal that is, no anthropometric failure was noted among these children; whereas, anthropometric failure or undernutrition was noted in 54.05% children. Similar prevalence of undernutrition (55.3%) was noted among children in a recent study at Purba Medinipur district in West Bengal [7]. In another study conducted at Burdwan district (West Bengal), almost similar prevalence of undernutrition (57.14%) was observed among the children [17]. However, higher prevalence of undernutrition was observed in some previous studies [18, 19]. Similarly, lower prevalence of undernutrition was also observed in some previous studies [20, 21]. Though discrepancy in result was found among different studies, it is obvious that the prevalence of undernutrition is very high in our country.

5. Conclusion

The present study highlights high prevalence of undernutrition among rural scheduled caste children. Among the various factors, poor socioeconomic condition of the scheduled caste families is one of the major causes of such miserable situation. Moreover, caste associated discrimination has a direct impact on their socioeconomic condition. Effective approaches in economic, social and political aspects can change the socioeconomic condition of the rural scheduled caste population which can help to improve the nutritional status of the scheduled caste children.

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7. References

1. Raghavendra RH. Literacy and Health Status of Scheduled Castes in India. *Contemporary Voice of Dalit* 2020;12(1):97-110.
2. Saravankumar S, Palanisamy M. Status of Primary Education of Scheduled Caste Children. *International Journal of Research in Humanities and Social Sciences* 2013;1(8):2347-5404.
3. Thorat S, Sadana N. Discrimination and Children's Nutritional Status in India. *IDS Bulletin* 2009;40(4):25-29.
4. Delpeuch F, Traissac P, Martin-Pre Y, Massamba JP, Maire B. Economic crisis and malnutrition: socioeconomic determinants of anthropometric status of preschool children and their mothers in an African urban area. *Public Health Nutr* 2000;3:39-47.
5. Rani N. Effect of Malnutrition on Schedule Caste School Going Children in Rural Area of Darbhanga District in Bihar. *International Journal of Engineering Development and Research* 2019;7(1):39-42.
6. Nandy S, Irving M, Gordon D, Subramanian SV, Smith GD. Poverty, child undernutrition and morbidity: new evidence from India. *Bull World Health Organ* 2005;83(3):210-216.
7. Khanra P, Biswas S, Bose K. Nutritional Assessment by Composite Index of Anthropometric Failure among School Going Children of Purba Medinipur, West Bengal, India. *Human Biology Review* 2019;8(1):66-76.
8. Patel PP, Patel PA, Yagnik B, Vora K, Verma A, Patel AD *et al.* Assessment of Nutritional Status of School Going Children in Gujarat. *Int J Food Nutr Sci* 2016; 3(2):378-380.
9. Marwat ZI, Nawaz S, Wazir AK, Afzal E, Gul C, Khan MJ *et al.* Nutritional assessment of school going children in district Abbottabad, K.P. Pakistan. *International Journal of Scientific Reports* 2019;5(2):59-65.
10. Manna PK, De D, Bera TK, Chatterjee K, Ghosh D. Anthropometric Assessment of Physical Growth and Nutritional Status among School Children of North Bengal. *Anthropologist* 2011;13(4):299-305.
11. Dey AK, Nath AB. Nutritional status of school going children (6-15 years) in a semi-urban area of Cachar district, Assam. *J. Evolution Med. Dent. Sci* 2017;6(54):4057-4062.
12. Firdos M, Kulkarni MB, Ahmed QS, Karadkhedkar SS. Anthropometric Measurements of School Children of India. *Journal of Dental and Medical Sciences* 2018;17(6):22-29.
13. Yadav AK, Kotwal A, Vaidya R, Yadav J. Anthropometric indices and its socio-demographic determinants among primary school children of an urban school in Pune, India. *Int J Med. Public Health* 2016;6(4):160-164.
14. Debbarma M, Debbarma LL, Dipak D. Nutritional Health Status of Rural Tribal Children in Khowai District of Tripura. *Int. J. Curr. Microbiol. App. Sci.* 2018;7(09):3170-3183.
15. Pandit IM, Ahmad SN, Khan S, Haq IU. Nutritional Status of the School Age Children (5-14 years) in a Rural Health Block. *International Journal of Current Research* 2015;7(2):12500-12502.
16. Verma S, Kumar N, Shiba, Choudhary P, Singhanian K, Kumar M. Prevalence of Malnutrition and its Impact on Academic Performance of School going Children from Rural Area of Rohtak, Haryana. *Epidemiology International* 2019;4(4):16-19.
17. Mondal PL. A study on body mass status of rural area school children of Burdwan District in West Bengal. *International Journal of Physical Education, Sports and Health.* 2015;2(1):31-32.
18. Subhprada SC. Nutritional Status of Government Primary School Children in an Urban Slum, Kurnool, Andhra Pradesh. *International Journal of Current Medical and Applied Sciences.* 2015;6(3):167-170.
19. Sinha NK, Haldar JP. Anthropometric parameters reveal a severe malnutrition among the children living in rural areas of Paschim Medinipur District. *International Journal of Physiology, Nutrition and Physical Education* 2019; 4(1):601-607.
20. Pal D, Kanungo S, Bal B, Bhowmik K, Mahapatra T, Sarkar K. Malnutrition Scenario among School Children in Eastern-India -- an Epidemiological Study. *Epidemiology (Sunnyvale)* 2016;6(1):1-9.
21. Sharma M, Watode B, Srivastava A. Nutritional Status of Primary School Children through Anthropometric Assessment in Rural Areas of Moradabad. *Annals of International Medical and Dental Research* 2017;3(2):1-5.