



HEALTH AND MALNUTRITION AMONG THE TRIBAL CHILDREN IN KERALA

¹ Dr. Franco T. Francis, ² Dr. P. Arunachalam

¹ Research Scholar, ² Emeritus Professor

¹ Department of Applied Economics,

¹ Cochin University of Science and Technology, Kochi-22, Kerala, India

Abstract: Malnutrition is highly prevalent among the poor communities in our country. However, the extent and severity of malnutrition differ in various states and communities. This study is gender-based research on the risk and prevalence of malnutrition among tribal children in the state of Kerala. It also analyses the incidence and intensity of undernutrition among children below the age of five years in the Scheduled Tribes in Kerala. For the study, 70 tribal children were selected from three blocks from tribal areas, namely, Attapadi (Irrullar, Mudhuga, Kurumbha), Manthavadi (Kurichayar, Paniya, and Kattunayakan), and Idukki (Muthuvan, Paniya) are selected from the central, northern, and southern region of Kerala respectively. Results show that the tribal community still has the prevalence of severe wasting (67.14%), stunting (64.29%), and being underweight (70 %); more than fifty percent of the tribal child population is suffering from malnutrition.

Index Terms – Malnutrition, Severely Wasting, Severely Stunted, Severely Underweight

I. INTRODUCTION

India struggled to bridge the gap between the tribal and non-tribal populations regarding healthcare. The country has 8.6 % of the tribal population, even after seven decades of independence and after establishing different government policies and programs to develop tribal communities by focusing on their livelihood, education, and health. The tribal peoples have continued to be the most malnourished segment of Indian society, even though the nation gives unique treatment to the tribal community. As per the estimates of the Planning Commission, the poverty ratio among the tribal groups has declined by more than a third between 1983 and 2005. The percentage of STs living below the poverty line has come down from 62.3% in rural areas during 2004-05 to 45.3 % during 2011-12, it shows considerable progress over the years. Even though nearly half of the country's scheduled tribe's population remains in poverty, they are also in severe malnutrition diseases because of their low starting point. The primary reason that is acknowledged as a widespread health issue is the unpredictability of the food supply, which has detrimental long-term effects on children and hinders the country's growth. Assessment of nutritional status is predominant because it drives the identification of malnutrition, an aggravation of morbidity and mortality. Healthcare indicators show tribal children have higher levels of malnutrition compared to the children of socially and economically advanced sections in India. The income security of the scheduled tribe population has also been adversely affected by the losses and access to productive resources, like rights to forest or agricultural lands, coupled with poor compensation. Similarly, sanitation, housing, overcrowding, access, and utilisation of safe drinking water are all predominant determinants of infection and nutritional status.

The tribal people have poor health and substantial unmet needs. Healthcare for tribal people remains subsumed in rural healthcare settings. It is generally assumed that tribal people have the same health problems and needs as other communities. Still, they live in different terrains and environments, other social systems, and diverse cultures. If their healthcare needs were not addressed as they wanted, health and healthcare in tribal areas remained unsolved problems for the nation.

National Family Health Surveys (NFHS)-4 reports that more than 40% of tribal children in India are stunted and underweight, and about 30% are wasted. The frequency of malnutrition among tribal children in the country has shown a declining trend in the recent report of NFHS-5. The prevalence of stunting, wasting, and underweight was 43.8%, 27.4%, and 45.3% in NFHS-4, reduced to 40.9%, 23.2%, and 39.5% under NFHS-5. (Ministry of women and child development, august 2023). This research investigates the nutritional challenges encountered by marginalised populations, such as the tribal people of Kerala.

II. OBJECTIVES OF THE STUDY

- To analyse the incidence and intensity of under-nutrition among children below the age of five years among the Scheduled Tribes Communities in Kerala.
- To examine the gender inequality in the incidence and intensity of under-nutrition among children below the age of five years among the Scheduled Tribes Communities in Kerala.

III. METHODS AND MATERIALS USED

The study used a cross-sectional descriptive model, a semi-structured questionnaire, anthropometric measurements, and a food frequency questionnaire for data collection. Direct observation was done to validate the results given by respondents. For this purpose, three districts were selected based on the community population. Purposive sampling was used to obtain the 70 children since only households with children between 0-5 years of age were visited. The precise goals were to assess the degree of underweight, wasting, and stunting in these kids and pinpoint any potential underlying causes. To explore the possibility of childhood malnutrition could exist in marginalised communities and to study the gender inequality in undernutrition among children below the age of five years from the tribal communities. The investigator will select three blocks from tribal areas, namely, Attapadi (Irrullar, Mudhuga, Kurumbha), Manthavadi (Kurichayar, Paniya, and Kattunayakan), and Idukki (Muthuvan, Paniya) are selected from the central, northern, and southern region of Kerala respectively. Children under five years of age from the selected tribal households will be studied by measuring their height, weight, chest and mid-arm circumferences, and skin-fold thickness (soman and Rajasree,1994).

Both primary and secondary data were used. The primary data was obtained from the mothers and guardians of the children. In contrast, secondary data was obtained from records of the children's health cards that check for immunisations and diseases, and the National Family Health Survey (NFHS) will also be used for this purpose. Their anthropometric measurements were taken after permission from their parents had been granted. The Z-score values were calculated by analysing anthropometric nutritional data using Emergency Nutrition Assessment (ENA) software.

Semi-structured questionnaires were used as the primary research instruments to collect data from the respondents, such as demographic data of the child, to ensure that the respondent met the study's criteria. The researcher did direct observation to validate the results given by the respondents. The anthropometric measurements for the children were determined according to standard WHO procedures. The anthropometric parameters considered included age (in months), Weight (kgs), Height (cms), and mid-upper arm circumference (cms).

Data was analysed using proportions, and descriptive analysis was used to describe the data. Analysis of anthropometric nutritional data was done using Emergency Nutrition Assessment (ENA) software to determine anthropometric data's Z- score values. The height for age (HAZ), weight for age (WAZ), and weight for height (WHZ) values were obtained using the z-scores ($< -2SD$) values derived from the age, height, and weight measurements. Reference data from the WHO was used to classify the results as stunted, underweight, or wasted if the values were $< -2HAZ$, $< -2WAZ$, or $< -2WHZ$, or as severe if the values were $< -3Z.s$. Interpretation was done using a visual representation of bar graphs.

IV. RESULTS AND DISCUSSION

4.1 Main survey results for WHZ: (Weight for Height Z-Scores also referred to as Wasting)

Table 1
Frequency of acute malnutrition among tribal children based on weight-for-height z-scores

	N = 70		Boys		Girls	
			n=35		n=35	
	N	%	N	%	N	%
Normal Weight (≥ -2 z score)	9	12.86	4	44.44	5	55.56
Moderate Wasting (≥ -3 and < -2 z-score)	14	20.00	6	42.86	8	57.14
Severe wasting (< -3 z-score)	47	67.14	25	53.19	22	46.81

From the results, it was found that only 9 (12.86%) of 70 children were of normal weight, 4 (44.44%) of the 9 were boys, and girls were 5 (55.56%) were of average weight for height. From the prevalence of moderate wasting, it was found that 14 (20.00%) of the children had moderate wasting; among these, 6 (42.86%) were boys of the total population, and 8(57.14%) were girls. From the prevalence of severe wasting, it was found that 47 (67.14%) of the children had severe wasting, with 25 boys (53.19%) and 22 (46.81%) being girls. The results show that the tribal community still has a prevalence of severe wasting; more than fifty percent of the tribal child population is suffering. More clearly, from the sample of 70 children, 47 children, i.e. 67.14%, are severely wasting. It is generally observed that girls are comparatively better than boys.

4.2 Main survey results for HAZ: (Height for Age Z-Scores also referred to as stunting)

Table 2
Frequency of acute malnutrition among tribal children based on Height-for-Age z-scores

	N = 70		Boys		Girls	
			n=35		n=35	
	N	%	N	%	N	%
Normal Height (≥ -2 z score)	9	12.85	4	44.44	5	55.56
Moderate Stunted (≥ -3 and < -2 z-score)	16	22.86	7	43.75	9	56.25
Severely Stunted (< -3 z-score)	45	64.29	23	51.11	22	48.89

From the results, it was found that only 9 (12.86%) of 70 children were of standard height, 4 (44.44%) of the 9 were boys, and girls were 5 (55.56%) were of average height for the age. From the prevalence of moderate stunting, it was found that 16 (20.00%) of the children had moderate stunting; among these, 7 (43.75%) were boys of the total population, and 9 (56.25%) were girls. From the prevalence of severe stunting, it was found that 45 (64.29%) of the children had severe stunting, with 23 boys (51.11%) and 22 (48.89%) being girls. The results show that the tribal community still has the prevalence of severe stunting; more than fifty percent of the tribal child population is suffering severely. More clearly, from the sample of 70 children, 47 children, i.e. 67.14%, are severely wasting. It is generally observed that girls are slightly better than boys.

4.3 Main survey results for WAZ: (Weight for Age Z scores results for underweight)

Table 3
Frequency of acute malnutrition among tribal children based on Weight-for-Age z-scores

	N = 70		Boys		Girls	
			n=35		n=35	
	N	%	N	%	N	%
Normal Weight (≥ -2 z score)	8	11.43	3	37.50	5	62.50
Moderate Under Weight (≥ -3 and < -2 z-score)	13	18.57	6	46.15	7	53.85
Severely Under Weight (< -3 z-score)	49	70.00	26	53.06	23	46.94

From the results, it was found that only 8 (11.43%) of 70 children were of normal weight for age, 3(57.14%) of the 8. were boys, and girls were 5 (55.56%) were of average height for age. From the prevalence of moderate underweight, it was found that 13 (18.57%) of the children had moderate underweight; among these, 6 (46.15%) were boys of the total population, and 7 (53.85%) were girls. From the prevalence of severe underweight, it was found that 49 (70%) of the children had severe underweight, with 26 boys (53.06%) and 23 (46.94%) being girls. The results show that the tribal community still has the prevalence of being severely underweight; seventy percent of the tribal child population is suffering severely. More clearly, from the sample of 70 children, 49 children, i.e. 70.00%, are severely underweight. It is generally observed that girls are comparatively better than boys.

V. CONCLUSION

Undernutrition and overweight are the two primary forms of malnutrition that the world is currently dealing with, particularly in low- and middle-income nations. Any malnutrition poses severe risks to people's health. A vital component of development and health is nutrition. Increased immunity, safer pregnancies and deliveries, a decreased risk of non-communicable illnesses, longer life spans, and better nutrition are all associated with better health outcomes for mothers, babies, and children. Children in good health learn more effectively. A healthy diet increases productivity and allows people to end the cycles of hunger and poverty progressively.

REFERENCE

- [1] Baiju, K. (2011). Tribal Development under Decentralised Governance in Kerala:Issues and Challenge. *JOAAG, Vol. 6. No. 1*, 11-26.
- [2] Bakshi, A.B. (2010, May) .Eclipsed at Dawn. *Outlook*. 26-27.
- [3] Damoradan Rajasenan, A. D. (15 January 2020). Tribal populations in Keralas development process: An impact evaluation of policies and Schemes. *Revista Venezolana de Anlisis de Coyuntura*, Vol.XXV,no.2,pp.85-110,2019.
- [4] Dinesh Kumar, V. K. (Vol.13; Issue: 2; February 2023). Assessment of Health Aspects of Tribal Adolescent Girls in India's Most Populous Tribal State: A Two-Decadal Review. *International Journal of Health Sciences and Research*, 127-137.
- [5] Ghosh, S.(1985);The feeding and Care of Infants and Young Children.New Delhi,Voluntary Health Association of India.
- [6] Johan P Mackenbach, & A. (Volume 44, Issue 6, March 1997, Pages 757-771). Measuring the magnitude of socio-economic inequalities in health: An overview of available measures illustrated with two examples from Europe. *Social Science & Medicine*, Volume 44, Issue 6, March 1997, Pages 757-771.
- [7] Kerala Calling (2005, January). Making Kerala nutrition-rich: A mission to reach the nutritional level of best performing countries. Kerala Calling.
- [8] Maleta.,& Ken.(2006). Undernutirion. *Malawi Medical Journal*; 18(4): 189-205 December
- [9] Rajasree,S.,& Soman,C.R..(1994);Nutritional status of children in Kerala. *Indian Pediatrics*.31:651-655 June 1994.
- [10] Raman,A.(2010,August);Something is Rotten.*Outlook*.14-15.
- [11] Shivakumar,A .K.(2010,Frontline);Stunted India.*Frontline*.4-11.