



**ASSESSMENT OF NUTRITIONAL STATUS AND PREVALENCE OF MALNUTRITION
AMONG 3-5 YEAR CHILDREN IN SHOLAYOOR TRIBAL REGION**

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ABSTRACT

Malnutrition among under five year children is a major public health problem in India. Acute childhood malnutrition affects about a tenth of the world's children under 5 years of age, particularly those living in circumstances of extreme poverty in the developing world. This study was conducted to assess the prevalence rate of malnutrition among 3-5 years children in sholayoor tribal region of Kerala. Nutritional status was assessed using Anthropometric, Biochemical, Clinical and Dietary assessment. The dietary assessment of these children was poor when compared with Recommended Dietary Allowance and this can be achieved by changing their dietary habits. By the results of survey 2.4 per cent were found with Severe Acute Malnutrition, 21 per cent were found with Moderate Acute Malnutrition, totally 23.4 percent subjects were found with global Acute Malnutrition and 76.6 Per cent subjects were normal. 46.6 per cent were found to be normal in haemoglobin level, 34 per cent were found mild anaemic, 16.7 per cent were found to be moderate anaemic, 2.7 per cent were severely anaemic. To reduce the prevalence rates of malnutrition, Nutrition supplementation should be given to the children and nutrition education has to be given to the mothers.

KEYWORDS: Malnutrition, Prevalence, Anaemic, Under five children.

INTRODUCTION

Pre-school children constitute the most vulnerable segment of any community. Their nutritional status is a sensitive indicator of community health and nutrition (Bhaskaran 2006). In the past few decades, has witnessed rapid progress in terms of industrialization and agricultural production. Yet malnutrition, especially under nutrition continues to be a major problem of public health significance in the country. It is a major contributor to high rates of childhood mortality, maternal mortality and morbidities in the community (Blossner, 2005). Malnutrition remains a major cause of morbidity and is the most common worldwide cause of death in children who are less than five years of age. The disease accounts for 60% of all childhood mortality in developing countries. It is estimated that 146 million children under the age of five are underweight in developing countries, compared to normal anthropometric parameters and 3.5 million children a year die from malnutrition (Chaudhury, 2000). Malnutrition is one of the single greatest threats to child survival, associated with 3.1 million child deaths each year of which half a million from wasting as a result of malnutrition or 45% of all child deaths worldwide (Gonenkumar, 2008). These malnourished children have a higher risk of mortality, ranging from a three-fold

increased risk for the moderately malnourished to a nearly ten-fold increase for the severely malnourished (Ramachandran, 2010). The convincing performance of Kerala in achieving demographic transition, in spite of low economic development, has received Global attention. Kerala is the one among the low income states in India, has made remarkable achievements in the field of health status of its population measured in terms of life expectancy at birth, mortality, health transition and utilisation of health services (Kannan, 1991). Reduction of malnutrition in 0-5 age group can be ensured by availability of supplementary feed. Health care providers have to focus on health education among parents, especially the mothers about the exact nutritional requirements in terms of quality and quantity of the child at specific age groups (Jai Prakash, 2013).

MATERIALS AND METHODS

The present study was undertaken to assess the Nutritional status of 3-5 year tribal children in Attappadi under Sholayoor Primary Health centre area. Sholayoor Primary Health Centre covers 28 hamlets. The sample size was 300 children (3-5years) randomly selected from the 28 hamlets of sholayoor tribal region in Attappadi, Kerala. Background information, Anthropometric measurements, Biochemical and clinical status were

elicited through a formulated questionnaire. Dietary pattern method was used to collect the details about dietary intake of the respondents which is useful to identify their food habits.

Anthropometric Measurements

Anthropometry is the universally acceptable inexpensive and most sensitive parameter for assessing nutritional status. An anthropometric measurement such as Height, Weight, BMI and MUAC (Mid upper arm circumference) were assessed. Body weight is the most widely used and simplest reproducible anthropometric measurement for the evaluation of the population where as height is the principle measure of skeletal body tissue. (Thirumanidevi *et al.*, 2005).

Biochemical Assessment

The haemoglobin levels were estimated through cyanmethaemoglobin method. The blood (1Millilitre) was drawn from children and haemoglobin level was estimated.

Nutrition Education

Nutrition education was given to all the respondents. Power point presentation was presented which includes etiology, symptoms, risk factors, healthy diet practices which is to be followed in their daily diet.

RESULTS AND DISCUSSION

Background information

The mean age of the selected subjects (300 selected subjects) from 3-5years. All the selected subjects were between 3-5 years of age. 69 per cent of the children were lived in nuclear families and 31 per cent of the children lived in joint family. The per capital income of the children families ranged from 18 per cent families were in the income level (Rs<3000), 24 per cent families were in the income level (Rs.3000-5000), 47per cent of families were in income level (Rs.5000-10000) and 11 per cent of families were in the income level of (Rs.10000 and above).

Anthropometric Measurement

The mean height of the subject found to be 95.36±5.72 cm, while mean weight was 12.76±1.86 kg, and from the above values BMI was 13.98±1.17. Based on weight for height calculation, 2.4 per cent children were with SAM (Severe Acute Malnutrition), 21 per cent were with (MAM-Moderate Acute Malnutrition) 76.6 per cent children were normal. Table I shows the Mean Anthropometric assessment of selected subjects.

Table I- Mean Height, Weight, MUACand BMI of the selected subjects.

S No	Anthropometric Measurement	Mean value
1.	Height (cm)	95.36±5.72
2.	Weight (Kg)	12.76±1.86
3.	Mid Upper Arm Circumference	141.87±10.83
4.	BMI	13.98±1.17

Anthropometric Measurement

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Table II Nutritional status of the selected subjects.

S No	Nutritional status (weight for height)	Number	Percentage
1.	Normal	230	76.6
2.	Moderate Acute Malnutrition	63	21
3.	Severe Acute Malnutrition	7	2.4

Table III Haemoglobin level of selected subjects.

SI no	Haemoglobin level	Number	Percentage
1.	Normal and above (11g/dl and above)	140	46.6
2.	Mild (10-10.9g/dl)	102	34
3	Moderate (7-9.9g/dl)	50	16.7
4.	Severe (Below 7g/dl)	8	2.7

Blood Haemoglobin

The pre-school children based on their haemoglobin levels were categorized into anemic and non anemic subjects. The standard value referred from 11g/dl (WHO/UNICEF/UNO). Anemia was further grouped as mild (Hb: 10-10.9g/dl) Moderate (7-9.9g/dl), severe (Hb below 7g/dl). From the result it shows that 46.6 per cent were found to be normal 34 per cent were found mild anemic, 16.7 per cent were found to be moderate anemic, 2.7 per cent were severely anemic children.

Clinical status

From the Clinical assessment it was clear that Iron deficiency and Vitamin C deficiency disease were higher about anaemia (71%) and bleeding gums (61%), dental carries (49%) and angular stomatitis 48% were seen in many children.

Dietary Pattern of the subjects

The dietary intake of the children was assessed by dietary pattern method. The daily intake of foods consumed by daily, weekly once, twice, monthly, occasionally and never included in their diet were included in the dietary assessment.

Cereals and pulses

Cereals was consumed daily by all subjects, rice was stable food in India so rice was consumed daily, other cereals like ragi included weekly thrice in their diet. Pulses such as red gram dhal consumed regularly other

pulses like bengal gram, black gram, soyabean were consumed weekly once in their diet.

Vegetables and fruits

Green leafy vegetables once in a week, 10 per cent of subjects were never included green leaves in their diet. Other vegetables like beans, ashgourd, brinjal were included weekly twice. Roots and tubers like carrot, potato and beet root were included weekly twice. Fruits consumed by the subjects weekly twice.

Milk and milk products

60 per cent of subjects consumed milk daily, 20 per cent consuming three times in week and 20 per cent were not included milk in the diet. 20 per cent including curd in daily diet. Ghee and butter were included occasionally in their diet.

Animal foods

50 per cent of subjects including egg in daily diet, 30 per cent of subjects including egg weekly twice 20 per cent of children never include egg in diet. 90 per cent of subjects never included beef in their diet. 95 per cent subjects consumed chicken and mutton occasionally and 5 per cent of subjects never included in their diet.

DISCUSSION

The present study was carried out of 300 subjects 2.4 per cent were found with Severe Acute Malnutrition, 21 per cent were found with Moderate Acute Malnutrition, totally 23.4 percent subjects were found with Global Acute Malnutrition and 76.6 Per cent subjects were normal. 46.6 per cent were found to be normal in hemoglobin level, 34 per cent were found mild anemic, 16.7 per cent were found to be moderate anemic, 2.7 per cent were severely anaemic.

CONCLUSION

The present study was under taken to assess the nutritional status and prevalence of malnutrition among 3-5 year children in sholayoor tribal region. Dietary intake was low when compared with recommended dietary allowances. Rice consumption was daily by the subject, Egg and milk consumption was poor and fruits consumption was also very poor. Nutrition education has been given to all mothers about malnutrition and anemia to reduce the malnutrition prevalence rate. Prevalence rate can be reduced by including protein and iron rich foods in their daily diet and through bringing changes in their daily dietary habits.

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