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A STUDY ON THE NUTRITIONAL STATUS AND FACTORS ASSOCIATED WITH MALNUTRITION AMONG CHILDREN IN SELECTED AREAS

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ABSTRACT **BACKGROUND:** Infants and young children are the most vulnerable population to malnutrition due to their high nutritional requirements for their growth & development. In developing countries like India malnutrition among children is a major public health problem. It affects all dimensions of children's life; its effects are not limited to physical health but extend to psychological, social and overall wellbeing. Malnutrition among children is a major area of challenge for the health authorities in India as the incidence increases. **METHODS:** A quantitative exploratory survey method was used in this research study. Samples of 100 children in the age group of 0-5 years were selected from rural & urban slum areas, by using nonprobability convenience sampling technique. The researcher assessed the nutritional status of the children by means of WHO growth chart, anthropometric measurements and physical examination of children. The symptoms of malnutrition and the factors associated with malnutrition were assessed using observational checklist and structured questionnaire. **RESULTS & DISCUSSION:** Out of 100 children 40(40%) were moderately malnourished, 24(24%) children were severely malnourished and only 36(36%) were normal without any symptoms of malnutrition. The symptoms of nutritional deficiencies such as dental caries, distended abdomen, poor texture of hair, pale appearance of conjunctiva, bitot's spots, muscle wasting and oral cavity sores & ulcers had significant association with socio-demographic variables like age, monthly family income, number of siblings, area of residence, education & occupation of the parents, availability of health care facility, utilization of healthcare facility by mother during her pregnancy period and the birth weight of that child at $p < 0.001$ level. **CONCLUSION:** The factors associated with malnutrition can be controlled and many more community based preventive measures need to be implemented with adequate funding for this genuine cause.

KEYWORDS : Nutritional status, Factors associated with malnutrition, Children

INTRODUCTION

Infants and young children are the most vulnerable section to malnutrition due to their high nutritional requirements for their maturation, growth and development. The term malnutrition refers not only to deficiency states but also to excess or imbalance in the intake of calories, proteins, and other nutrients. **Gillespie, S., & Mason, J. (1991)**

In developing countries like India malnutrition among children is a major public health problem. It affects all dimensions of children's life; its effects are not limited to physical health but extend to psychological, social, and overall wellbeing. Malnutrition among children is a vital area of social issue for the health authorities in India.

Recent data were collected from WHO, UNICEF, Medline, and others. The information retrieved was reviewed and analysed for discrepancies. **Sahu, Swaroop, et al. (2015)** Existing evidence shows that the prevalence of under-nutrition among under-five children was high and varied widely (under-weight: 39-75%, stunting: 15.4-74%, wasting: 10.6-42.3%) depending on the assessment methodology adopted. Studies on assessment of over-nutrition status among under-five children were limited. Distribution of various risk factors and its influence on nutrition status of children in a given set up should be analysed for planning the prevention and control of malnutrition. Strengthening public health interventions for malnutrition among vulnerable groups, effective implementation and evaluation of the strategies at national, state and block level is the need of the hour as per recommendations of many research evidences.

For approximately 1 million children in 2015, their first day of life was also their last. Globally, the neonatal mortality rate (probability of dying during the first 28 days of life) is declining less rapidly than the mortality rate for children between 1 month and 5 years of age. This means that the share of under-five deaths occurring during the neonatal period is increasing. In 2015, neonatal deaths accounted for 45% of total deaths, 5% more than in 2000.

OBJECTIVES

1. To identify and classify nutritional status among children
2. To assess the symptoms of malnutrition among children by using checklist.
3. To find out the factors associated with malnutrition
4. To find the association between malnutrition and selected socio-demographic variables

Operational definitions

Nutritional Status

In this study nutritional status was assessed by checking the weight, conducting physical examination by using a checklist to identify the symptoms of malnutrition which was identified by comparing the weight of the child with WHO growth chart and categorized according to WHO classification of malnutrition.

Factors Associated with Malnutrition

It refers to factors such as socio demographic factors, area of residence type of housing, utilization of public health care facilities, daily dietary intake, gender, birth order, number of sibling, birth interval, birth weight, educational status, religion, distance of Anganwadi, occupation of parents, monthly family income, availability of drinking water supply, immunization status of children, place of delivery, type of delivery, breast feeding, weaning, illness, socioeconomic status and number of antenatal visits by the pregnant women

METHODS & MATERIALS

A descriptive quantitative exploratory survey method was used in this research study. Samples of 100 children in the age group of 0-5 years were selected from rural, semi-urban & urban slum areas, by using nonprobability convenience sampling technique. The researcher assessed the weight of the children, with the help of WHO growth chart and physical examination of children were performed to evaluate the symptoms of malnutrition and the factors associated with malnutrition were assessed using a structured questionnaire.

Part-1: Anthropometric measurements were used to assess the nutritional status of children

Anthropometric measurements of weight, height, mid- upper arm circumference were evaluated by using the calibrated weighing machine and a measuring inch-tape. The level of nutritional status were assessed with the help of WHO growth chart and categorized according to WHO classification of malnutrition.

Part-2: Observation checklist was used to evaluate the symptoms of malnutrition

The observation check list was constructed to assess the symptoms of malnutrition. It consists of 30 items with two response columns 'Yes' and 'No' which has the presence or absence of signs and symptoms of

nutritional deficiency.

Part-3: Structured questionnaire was used to assess the factors associated with malnutrition

The questionnaire was prepared to assess the factors associated with malnutrition. The structured questionnaire comprised of 30 items; age, gender, religion, type of family, education of parents, occupation of parents, monthly income of family, source of water supply, availability of health care facilities, type of food, staple food, birth order of the child, number of antenatal visits made by mothers, place of delivery, method of family planning adopted, frequency & duration of breast feeding, initiating time of weaning, care of Village Health Nurse, deworming, immunization status and area of residence of the family.

Reliability test

Spearman's Rank co-relation co-efficient was used for testing of reliability. The reliability were found to be 0.89, 0.82 for the observation checklist, structured questionnaire respectively, hence the tools were highly reliable to proceed for the main study.

DATA ANALYSIS: Both descriptive statistics like frequency, percentage, mean, standard deviation and inferential statistics like chi-square test, ANOVA were used to anlyse the data collected for this study.

RESULTS & DISCUSSION

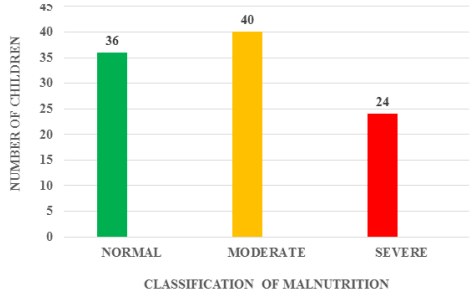
Based on the weight and other anthropometric measurements such as Mid Upper Arm Circumference (MUAC) out of 100 children, 24 had severe malnutrition when comparing with WHO (World Health Organization) Growth Chart. (Figure-1)

With regard to age there were more number of children (72%) in the age group of 3-5 years category were found to be severely malnourished in comparison to 0-3 years of children (28%).

With regard to gender both of male and female children had equal number of moderate and severe malnutrition. More number of children residing in urban slum area and in poor housing had severe malnutrition whereas in rural area the children had no malnutrition.

Majority of the children 48 (75%) with moderate and severe malnutrition had poor dietary intake, poor personal hygiene, more than two siblings and their housing standards were poor.

FIGURE-1: Assessment of nutritional status among children according to WHO growth chart N=100



The data presented in the Figure-1 shows that the majority of the children 40(40%) had moderate malnutrition, 24(24%) children had severe malnutrition and rest of 36 had no malnutrition as per WHO growth chart.

The children with severe and moderate malnutrition mostly had Low Birth Weight and their parents had no formal education and their monthly family income was less than Rs.2000.

Table-2: Association of Symptoms of Malnutrition with Socio-demographic variables **N=100**

SL. No	Symptoms of Malnutrition	Frequency	Percentage	Association with Socio-demographic Variables χ^2	Remarks
1	Dental caries	23	23%	24.756	S*
2	Abdominal distension	18	18%	23.87	S*
3	Poor texture of hair	6	6%	1.023	NS
4	Pale appearance of Conjunctiva	7	7%	2.01	NS
5	Bitot's spots	4	4%	1.04	NS
6	Muscle wasting	2	2%	2.09	NS
7	Oral cavity sores & ulcers	17	17%	19.02	S*

Foot note: S* - Significant at $p < 0.001$ level NS- Not Significant

Out of 100 children 24 had dental caries and 17 had oral ulcers and 15 had both of dental caries and oral cavity ulcers. Out of 24 children with severe malnutrition 12 (50%) had symptoms of distended abdomen, poor dexterity of hair, muscle wasting and pale conjunctiva.

The symptoms of malnutrition such as dental caries, abdominal distension, poor texture of hair, pale appearance of conjunctiva, bitot's spots, muscle wasting and oral cavity sores & ulcers had significant association with socio-demographic variables like age, monthly family income, number of siblings, area of residence, education & occupation of the parents, availability of health care facility, number of antenatal visits and the birth weight of that child at $p < 0.001$ level.

There is significant association ($p < 0.001$) between severe malnutrition (as per WHO growth chart) and the factors such as type of housing, utilization of public health care facilities, birth order, number of sibling, birth interval, birth weight, daily dietary intake, educational status, religion, distance of Anganwadi, occupation of parents, monthly family income, immunization status of children, place of delivery, type of delivery, breast feeding, weaning, illness, socioeconomic status and number of antenatal visits attendance by the pregnant women.

When comparing to rural and urban area of residence and gender of child, there is no significant difference in level of malnutrition. However socio-demographic variables like religion, type of family, birth order, gender, place of delivery, availability of drinking water source and type of housing were not associated with malnutrition.

CONCLUSION

The study findings reveal the fact that the prevalence of malnutrition among young children and the factors associated with malnutrition are concrete in nature and still it is a serious public health challenge in India. So that many studies need to be conducted on factors contributing to malnutrition among young children. The factors associated with malnutrition among children can be controlled and many more community based interventions need to be implemented with adequate funding for this genuine cause.

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