

Determinants and Consequences of malnourished underfive urban children: a cross sectional study.

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Abstract:

Malnutrition has become most common nutritional disorder and it is one of the main reason for underfive mortality and morbidity throughout the world. In India, itself more than one third of global malnourished children are existing. More than half of children below 3 years are considered as underweight amongst these. It is considered as one of the most burning issue and the common effect of malnutrition is in the form of late physical growth and intellectual development. **The aim** of this study was to assess the determinants of malnutrition among underfive children. **Study design:**A cross sectional study with key informant interview to identify the determinant factors of malnutrition.460 children with their mothers participated in the study. Odds ratio with 95% confidence interval was used to identify the determinants of Malnutrition among underfive children using multivariate logistic regression.

Key words: Malnutrition, Determinants, Underfive, Children

Introduction

Nowadays in the developing countries, malnutrition has become most common nutritional disorder and it is one of the main reason for underfive mortality and morbidity throughout the world. In India, itself more than one third of global malnourished children are existing. More than half of children below 3 years are considered as underweight amongst these.¹ It is considered as one of the most burning issue and the common effect of malnutrition is in the form of late physical growth and intellectual development.²

Amongst the global malnourished children, the majority of these children are basically found in India, which alarms that there is a need to take action on the improving the health policies and main focus is to be on decreasing health and social discrimination.

Since last ten years, there is gross reduction in infant mortality and underfive mortality rate in India, but it is also said that 50% of world's malnourished children are in India. The underweight prevalence is more (38%) in the rural areas as compared to urban areas (29%). As per some reports many children consume non-nutritious, non-balanced food in the form of under nutrition or deficient micronutrients. The availability of nutrition rich food in markets has an important role in prompting the community to make the right choices.³ In Karnataka 38% are underweight, which takes into account both chronic and acute under nutrition.⁴

The main reason for the malnutrition in India is lack of equality in socio-economic status and it affects some population groups as their diet lacks in both quality and quantity. The unhealthy mothers are prone to have unhealthy babies. Nutrition deficiency accompanies long-term effects on individual and the society. Nutrition deficient people are prone to get infectious diseases like pneumonia, tuberculosis which usually have higher mortality rates.⁵

The prolonged duration of malnutrition is very harmful to children and causes delayed growth and development which ultimately has a severe effect on society and its future. In future malnutrition makes the child's health weak, the ability of learning becomes slow and it also leads to have the unhealthy children of their own. Some studies have also shown that many parents are unaware of the fact that various food varieties should be given to their child and some are also unaware about the importance of breastfeeding.⁶

Nutrition is a fundamental factor of good health and is essential for survival, to maintain the good quality of life and safety and protection of human life. Sufficient nutrition is required for the proper growth, good organ formation and functioning, robust immune system and favourable neurological and intellectual development.⁷

Need for the study

Malnutrition affects each and every aspect of human health and development. The WHO South-East Asia Region (SEAR) has high prevalence of child undernutrition, the main reason behind this is some of the socioeconomic, biological and social determinants. Malnutrition is a condition that arises when not sufficient nutrients are consumed or too many nutrients leads to many health problems.

Some studies were done in the community setting wherein too many children had problems with undernutrition, low weight etc. Many studies have concentrated on the rural aspect and hence the present

study is undertaken to find out the determinants and consequences of Malnutrition among under-five children in urban areas of Belagavi.

Objectives

The objectives of the present study are

1. To study the determinants of Malnutrition among urban under-five children.
2. To study the consequences of Malnutrition among urban under-five children .

Subjects and Methods

Research approach

In view of the nature of the problem selected for the present study and the objectives to be accomplished a descriptive approach was considered appropriate for the present study.

Research design

The selection of design depends upon the purpose of the study, research approach and variables to be studied. The research design used for the present study is a cross-sectional study.

Research setting

Settings are the more specific places where data collection occurs based on the nature of the research question and the type of information needed to address it. The setting planned for the present study is urban areas of Belagavi.

Research population

In the present study the population consists of under-five children of urban areas of Belagavi.

Sample

A sample is the representative unit of a target population, which is to be worked upon by researchers during their study. Thus, it is a subset of the population elements. The sample chosen for the present study is under-five children of urban areas of Belagavi.

Sample size

As per the published literature, prevalence of Malnutrition based on this sample size is calculated from the formula below.

$$\text{Sample size (n)} = \frac{Z_{1-\alpha/2}^2 SD^2}{d^2}$$

Where

n- Sample size

$Z_{1-\alpha/2}$ is one tail Standard Normal Variate Assuming sample size at 95% CI

SD - 10% error in estimation of mean ie, 10% of SD.

'd' is tolerable error - 20% attrition for lost cases etc.

Considering the above formula the sample size is calculated as 460.

Criteria for selecting the sample

The sample selection was based on the following inclusion and exclusion criteria.

Inclusion criteria

1. Underfive children of urban areas of Belagavi.
2. Underfive children & their mothers who are willing to participate in the study.

Exclusion criteria

Children who are physically handicapped.

Sampling technique : Cluster Sampling

By computer generated random table 16 wards are selected by assuming 30% of underfive children malnourished from each ward, so from each ward 30 samples are drawn by taking from centre of the each ward in only one direction by using simple random sampling.

Data collection

The sanction was taken from the Institutional Ethical Committee and from District Health Authority.

Data collection procedure

Approval from the Institutional Ethics Committee is obtained.

- Development of the tool

A predesigned, pretested and validated questionnaires are used to study the determinants and consequences of malnourished underfive children.

- Description of the tool

The tool consists of:

- Section I: Socio-demographic variables .
- Section II A: Items on determinants of Malnutrition.

- Section II B: Items on consequences of Malnutrition.
- The purpose of the study is explained to mothers and consent is taken from every mother .

Operational definitions:

Malnutrition: refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients.⁷

Underfive: children who are less than five years old, especially those who are not in full-time education.

Determinant : a determinant is a factor or cause that makes something happen or leads directly to a decision.

In the present study determinants refers to the factors or variables which determines the condition of Malnutrition.

Consequences: a result or effect typically one that is unwelcome or unpleasant.

In the present study it refers to the immediate health effects of Malnutrition in underfive children.

Measurements

Height: The participant is allowed to stand straight without footwear, with heels, buttocks and back touching the wall and arm hanging by side. The height will be measured from head to heel.⁸

Weight: Body weight will be measure without any shoes, heavy clothing, using standard portable weighing machine with an error of $\pm 100\text{gm}$.⁸

Mid upper arm circumference: Bend the left arm, find and mark with a pen the olecranon process and acromion ,mark the mid-point between these two marks,with the arm hanging straight down, wrap a MUAC tape around the arm at the midpoint mark, measure to the nearest 1 mm.⁹

Delayed Growth & development (stunting, wasting , underweight) is classified by measuring the Height,Weight and Mid Upper arm Circumference by using standard WHO scales.¹⁰

Data analysis: Data will be analyzed by using the following statistical methods

- Measures of central tendency and dispersion
- Analysis of variance will be done along with "t" and "Z" test for significance
- Regression models specifically logistic regression models and multiple regression models will be used.

Conclusion

Malnutrition has become the global health problem and thus present study helps to identify the causative factors and the effects of malnutrition and helps to plan the interventions to improve the health status of underfive children.

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