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A Study to Assess Prevalence and Determinants of Undernutrition Among Under Five Children with a View to Develop Pamphlet Regarding Prevention of Undernutrition in Selected Anganbadis at Bilaspur District (C.G.)

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***Abstract*: The findings of the study in prevalence of undernutrition revealed that with regard to stunting (height for age) 12 (20%) were severely stunted, 10 (16.67%) were stunted and 38 (63.66%) were normal as assessed by WHO growth chart based on Z-score. With regard to underweight (weight for age) 9(15%) were under weight, only 6 (10%) were severely underweight and 45 (75%) were normal as assessed by WHO growth chart based on Z-score. With regard to wasting (weight for height) 7 (11.67%) were both low weight and underweight, only 2 (3.33%) have possible risk of overweight and 44 (73.33%) were normal as assessed by WHO growth chart based on Z-score. With regard to mid upper-arm circumference 7(11.7%) have mild undernutrition and moderate to severe undernutrition as respectively and 46 (76.67%) have no undernutrition as assessed by WHO growth chart based on Z-Score. The findings of the study in Determinants of undernutrition revealed that with reference to dietary pattern 88.33% children skip their breakfast. 78.33% and 28.33% children do not eat fruits and fresh green leafy vegetables respectively. 26.67% children take non-nutritive substances like mud, chalk etc. 16.67% do not breast feed their baby after first 6 months of life. With reference to sanitation factors 80% do not store cleaning supplies and equipment's away from food. 75% people place uncooked food items on bare floors. With reference to water hygiene 55% each do not have access to clean drinking water supply at home and go out of the house to get water from community borewell respectively.51.67% do not wash hands before eating meal. With reference to socio-economic factors 80% do not have adequate savings at time of economic distress. 38.33% do not have access to proper medical care of the child. With reference to cultural & religious factors 51.67% are non-vegetarian. 30% of subjects practice folk medicine witch craft when the child is sick. With reference to morbidity factors 51.67% children suffered from diseases in past 6 months. 20% parents do not seek health care assistance. With reference to family welfare 90% have 2 children. 25% have spacing between 2 children (less than 2 years of age). The findings of Chi square analysis reveals that there is significant association between the between prevalence of undernutrition mid upper arm circumference (MUAC) and determinants of undernutrition as the calculated chi square value (7.57) was greater than the table value (5.99) at df (2) respectively at 0.05 level of significance. Hence HI is accepted with reference to mid upper arm circumference (MUAC), however it is rejected with reference to stunting, underweight and wasting.**

***Keywords*: Prevalence, Determinants, Undernutrition, WHO Z-score.**

1. Introduction

Children of today are tomorrow's citizen; thus, it is extremely important to ensure good health for children. Child health plays a vital role in the development of a country. The first six years of life constitutes the most crucial span in life. At this stage in life, the foundation is laid for mental, physical and social development. Children are the assets for tomorrow's productivity. The growth of a country is depending on the availability of healthy human resources.

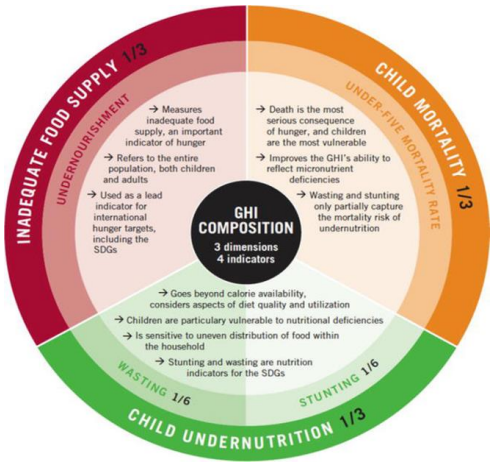

Fig. 1. GHI composition regarding undernutrition

Undernutrition is regarded as an intensifying global health challenge that is linked to high-cost care illness and death.

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Undernutrition is defined as insufficient intake of energy and nutrients to meet an individual's needs to maintain good health. Undernutrition is a universal problem that has many forms. No country is untouched. It affects all geographies, all age groups, rich people, poor people and all sexes. All forms of undernutrition are associated with various forms of ill health and higher levels of mortality. Undernutrition explains around 45% of deaths among children under five, mainly in low- and middle-income countries.

Three basic indices are used in undernutrition: weight for age Z score (WAZ), Length/ height for age Z score (LAZ/HAZ) and weight for length/height Z score (WLZ/WHZ).

2. Need of the Study

In 2000, India was ranked 83 out of 113 countries in the fray, now; India has slipped to 102 positions in the global hunger index 2019 of 117 countries, slipping from its 2018 position of 95 leaving behind its neighbors Nepal, Pakistan and Bangladesh. Its GHI (Global Hunger Index) Score has also decelerated from 38.9 in 2005 to 32 in 2010 and then from 32 to 30.3 between 2010-2019.

Undernutrition among underfive children has been identified as a major health and nutrition problem in India. Many determinants can cause undernutrition, inadequate food intake, infections, psychosocial deprivation, and insanitary environment as well as lack of hygiene, social inequality, and possibly some genetic contribution, morbidity factors, cultural and religious factors, lack of clean drinking water supply.

Various strategies have been planned to prevent undernutrition and improve nutrition this includes:

- Nutritional planning
- direct nutrition and health intervention: it includes
  - Improved health care system
  - Nutrition education
  - Early detection of undernutrition and intervention
  - Nutrition supplement

Objective:

- To assess the prevalence of undernutrition among under five children. To identify the determinants of undernutrition among under five children.
- To find the association between prevalence and determinants of undernutrition among under five children.
- To develop pamphlet regarding prevention of undernutrition.

Hypothesis:

H1: There is significant association between prevalence and determinants of undernutrition among under five children.

3. Methodology

The selection of research approach is the basic procedure for the conduction of research enquiry. A research approach tells us so as to what data to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data. In view of the nature of the problem selected for the study and the objectives to be accomplished, a survey research approach was considered to assess the prevalence and determinants of undernutrition among under five children with a view to develop pamphlet regarding prevention of under nutrition in selected anganbadis at Bilaspur district (C.G).

4. Results

In the present study prevalence of undernutrition revealed that with regard to stunting (height for age) n=12 (20%) was severely stunted, n=10 (16.67%) were stunted and n=38 (63.66%) were normal as assessed by WHO growth chart based on Z-score.

With regard to underweight (weight for age) n=9(15%) were under weight, only n=6(10%) were severely underweight and n=45(75%) were normal as assessed by WHO growth chart based on Z-score.

With regard to wasting (weight for height) n=7(11.67%) were both low weight and underweight, only n=2(3.33%) have possible risk of overweight and n=44(73.33%) were normal as assessed by WHO growth chart based on Z-score. With regard to mid upper-arm circumference n=7(11.7%) have mild undernutrition and moderate to severe undernutrition as respectively and n=46(76.67%) have no undernutrition as assessed by WHO growth chart based on Z-Score.

The findings of the study in Determinants of undernutrition revealed that with reference to dietary pattern 88.33% children skip their breakfast. 78.33% and 28.33% children do not eat fruits and fresh green leafy vegetables respectively. 26.67% children take non-nutritive substances like mud, chalk etc. 16.67% do not breast feed their baby after first 6 months of life. With reference to sanitation factors 80% do not store cleaning supplies and equipments away from food. 75% people place uncooked food items on bare floors. With reference to water hygiene 55% each do not have access to clean drinking water supply at home and go out of the house to get water from community borewell respectively.51.67% do not wash hands before eating meal. With reference to socio-economic factors 80% do not have adequate savings at time of economic distress. 38.33% do not have access to proper medical care of the child. With reference to cultural & religious factors 51.67% are non-vegetarian. 30% of subjects practice folk medicine witch craft when the child is sick. With reference to morbidity factors 51.67% children suffered from diseases in past 6 months. 20% parents do not seek health care assistance. With reference to

Table 1
Distribution of subjects according to prevalence of stunting (height for age) according to Z-score by WHO

Prevalence of stunting (height for age) according to Z-score by WHO	Frequency (f)	Percentage (%)
Normal (1-2)	38	63.33
Below –2	10	16.67
Below –3	12	20
Total	60	100

family welfare 90% have 2 children. 25% have spacing between 2 children (less than 2 years of age). The findings of Chi square analysis reveals that there is significant association between the between prevalence of undernutrition mid upper arm circumference (MUAC) and determinants of undernutrition as the calculated chi square value (7.57) was greater than the table value (5.99) at df (2) respectively at 0.05 level of significance. Hence HI is accepted with reference to mid upper arm circumference (MUAC), however it is rejected with reference to stunting, underweight and wasting.

Table 1 reveals that 38 (63.33%) were normal, 12 (20%) were severely stunted and 10 (16.67%) were stunted as assessed by WHO.

Table 2 shows that 45 (75%) are normal, 9 (15%) are underweight and only 6 (10%) was severely underweight.

Table 3 reveals that 44 (73.33%) are having normal weight, 7 (11.67%) are both low weight respectively and underweight and only 2 (3.33%) were having possible risk of overweight.

Table 4 depicts that 46 (76.67%) have no malnutrition, 7 (11.7%) have mild malnutrition and moderate to severe malnutrition as assessed by MUAC.

Table 5 depicts that there is a significant association between prevalence of undernutrition mid upper arm circumference (MUAC) and determinants of undernutrition as the calculated chi square value (7.57) was greater than the table value (5.99) at df (2) respectively. Hence H1 is accepted with reference to mid upper arm circumference (MUAC), however it is rejected with reference to stunting, underweight and wasting.

5. Discussion

In the present study 60 under five children attending anganbadis evaluated, depicts that there is a significant association between prevalence of undernutrition mid upper arm circumference (MUAC) and determinants of undernutrition as the calculated chi square value (7.57) was greater than the table value (5.99) at df (2) respectively.

The finding of the present study supported by Sujata Murarkar (2020) conducted a community based cross sectional study among Findings. under five children in urban slums and rural area of Maharashtra, India. Data were collected through house to house survey by interviewing mothers of under five children. Total 2929 mothers and their 3671 under five children were covered. Multivariate logistic regression analysis was carried out to identify the determinants of child nutritional status separately in urban and rural areas. Results revealed that overall prevalence of stunting among under five children was 45.9%, wasting was 17.1% and underweight 35.4%. In the rural areas exclusive breastfeeding ($p<0.001$) and acute diarrhea ($p=0.001$) were associated with wasting, children with birth order 2 or less than 2 were associated with stunting and exclusive breastfeeding ($p<0.05$) was associated with wasting, sex of the child ($p<0.05$) and type of family ($p<0.05$) were associated with stunting and low income of family ($p< 0.05$) was associated with underweight. Factors like sex, birth order, exclusive breastfeeding, economic status of family, type of family and maternal education have influence on nutritional status of child.

Table 2
Distribution of subjects according to prevalence of underweight (weight for age) according to Z-score by WHO

Prevalence of underweight (weight for age) according to Z-score by WHO	Frequency (f)	Percentage (%)
Normal (1-2)	45	75
Below –2	9	15
Below –3	6	10
Total	60	100

Table 3
Distribution of subjects according to Prevalence of wasting (weight for height) according to Z-score by WHO

Prevalence of wasting (weight for height) according to Z-score by WHO	Frequency (f)	Percentage (%)
Obese	0	0
Overweight	0	0
Possible risk of overweight	2	3.33
Normal (1-2)	44	73.33
Low weight	7	11.67
Under weight	7	11.67
Total	60	100

Table 4
Distribution of subjects according to Prevalence of mid arm circumference

Malnutrition by MUAC (in mm)	Frequency (f)	Percentage (%)
No Malnutrition	46	76.67
Mild	7	11.67
Moderate to Severe	7	11.67
Total	60	100

Table 5
Chi-square analysis for association between prevalence and determinants of undernutrition of under five

S.No.	Prevalence	Calculated Chi Square	Critical Value	DF Value	P Value	Inference
1.	Prevalence of stunting (Height for age)	0.65	7.82	2	P>0.05	Not significant
2	Prevalence of underweight (Weight for age)	1.34	7.82	2	P>0.05	Not significant
3	Prevalence of wasting (Weight for height)	2.55	7.82	3	P>0.05	Not significant
4	Mid arm circumference	7.57	5.99	2	P<0.05	Significant

The study results concluded that there is a significant association between prevalence of undernutrition with its determinants with regard to mid-arm circumference and is accepted at 0.05 level of significance.

6. Conclusion

The primary aim of the study was to assess the prevalence and determinants of undernutrition among under five children with a view to develop pamphlet regarding prevention of undernutrition in selected anganbadis at bilaspur district (c.g). A survey approach and non-experimental descriptive quantitative research design was under takenfor the present study, non-probability convenient sampling was used to select 60 under five children attending anganbadis of Bilaspur district (C.G.).

Recommendations:

In the light of the study, the investigator proposes the following recommendations for future research.

- More research needs to be conducted with large sample size in different settings to increase utilization of the generalization of the findings.
- A similar study can be done by video assisted teaching programme, role play etc.
- A comparative study can be done by comparing between the prevalence and determinants of undernutrition.

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