



A Study to Assess the Association between Malnutrition and Anemia in Underfive Children by Using two Binary Variables of Haemoglobin Crest and Low Height for Age and Low Degree of Malnutrition at Nerkundram

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ABSTRACT:

Background: Anemia, which is characterized by low level of hemoglobin in the blood, is one of the major public health hazards affecting people in both developed and developing countries. Anemia may occur at all stages of life, however, young children and women in the childbearing age are the most vulnerable. When anemia occurs in children, it could affect their cognitive performance and physical growth. In women, anemia could adversely affect their capacity to work and may lead to poor pregnancy outcomes.

Methodology: Data collection was done in selected community area of Nerkundram, for a period of 1 week. The investigator obtained written permission from the Principal, Saveetha Medical College and Hospital, Chennai and in charge of selected community area, Nerkundram. An oral consent was obtained from the samples prior to the study. The purpose of the study was explained to the subjects. The samples who fulfilled the inclusion criteria were selected. The purposive sampling technique was used to select 200 samples for the study. Everyday 25 samples were selected and collected data from them. Demographic data was collected by administering the structured tool and the biochemical variable hemoglobin was assessed clinically. The data collected were then coded and entered in Excel for further data analysis and interpretation.

Results: 200 in total Participants finished this research. After 1 weeks, The present study assessed the association between malnutrition and anemia in underfive children by using two binary variables of haemoglobin crest and low height for age and low degree of malnutrition. The study concluded that most of the underfive children had moderate to mild anemia and the parents of underfive had to be educated on malnutrition and the steps to prevent anemia.

KEY WORDS: Anemia, Hemoglobin, Malnutrition, Under-five Children.

INTRODUCTION

Malnutrition is a man-made disease. It is a disease of human society. It begins quite commonly in the womb and ends in the grave. Jelliffe listed the ecological factors related to malnutrition as follows: conditioning influences, cultural influences, socioeconomic factors, food production and nutritional status of women of child-bearing age, nutritional status of pregnant woman, nutritional status of lactating women, health and other service (Sandeep B, Harisha G, Susheela C, 2017). Nutrition is the cornerstone of socio-economic development of the country. Usually referred to as a silent emergency, it has devastating effects on children, society and future human kind (Hassam. SL, Mahmood UR, et al., 2010). Nutritional assessment in the community is essential for accurate planning and implementation of intervention programs to reduce morbidity and mortality associated with under-nutrition.

In children, malnutrition is more likely to strike those who lack nutritionally adequate diets, are not protected from frequent illnesses and do not receive adequate care. Factors pertaining to shelter, women's workload and decision making opportunities, traditional beliefs and practices and men's attitude towards child care contribute to malnutrition and eventually to maternal and child deaths (Singh R, Bhatnagar M, Mathur B, Singh H, & Kr Y, 2010).. Iron deficiency is the most frequently occurring disorder worldwide and is affecting almost all physiological groups; of them pre-school children, pregnant women and lactating mothers are more vulnerable. Iron deficiency in young children can impair their physical growth and cognitive functions such as learning memory and attention process and adversely increase the childhood morbidity and mortality (Arlappa N, Balakrishna N, Laxmaiah A, Brahmam GNV, 2014).



METHODOLOGY

Data collection was done in selected community area of Nerkundram, for a period of 1 week. The investigator obtained written permission from the Principal, Saveetha Medical College and Hospital, Chennai and in charge of selected community area, Nerkundram. An oral consent was obtained from the samples prior to the study. The purpose of the study was explained to the subjects. The samples who fulfilled the inclusion criteria were selected. The purposive sampling technique was used to select 200 samples for the study. Everyday 25 samples were selected and collected data from them. Demographic data was collected by administering the structured tool and the biochemical variable hemoglobin was assessed clinically. The data collected were then coded and entered in Excel for further data analysis and interpretation.

RESULT AND DISCUSSION

SECTION A: DESCRIPTION OF THE DEMOGRAPHIC OF UNDERFIVE CHILDREN.

Table 1: Frequency and percentage distribution of demographic variables of underfive children.

N = 200

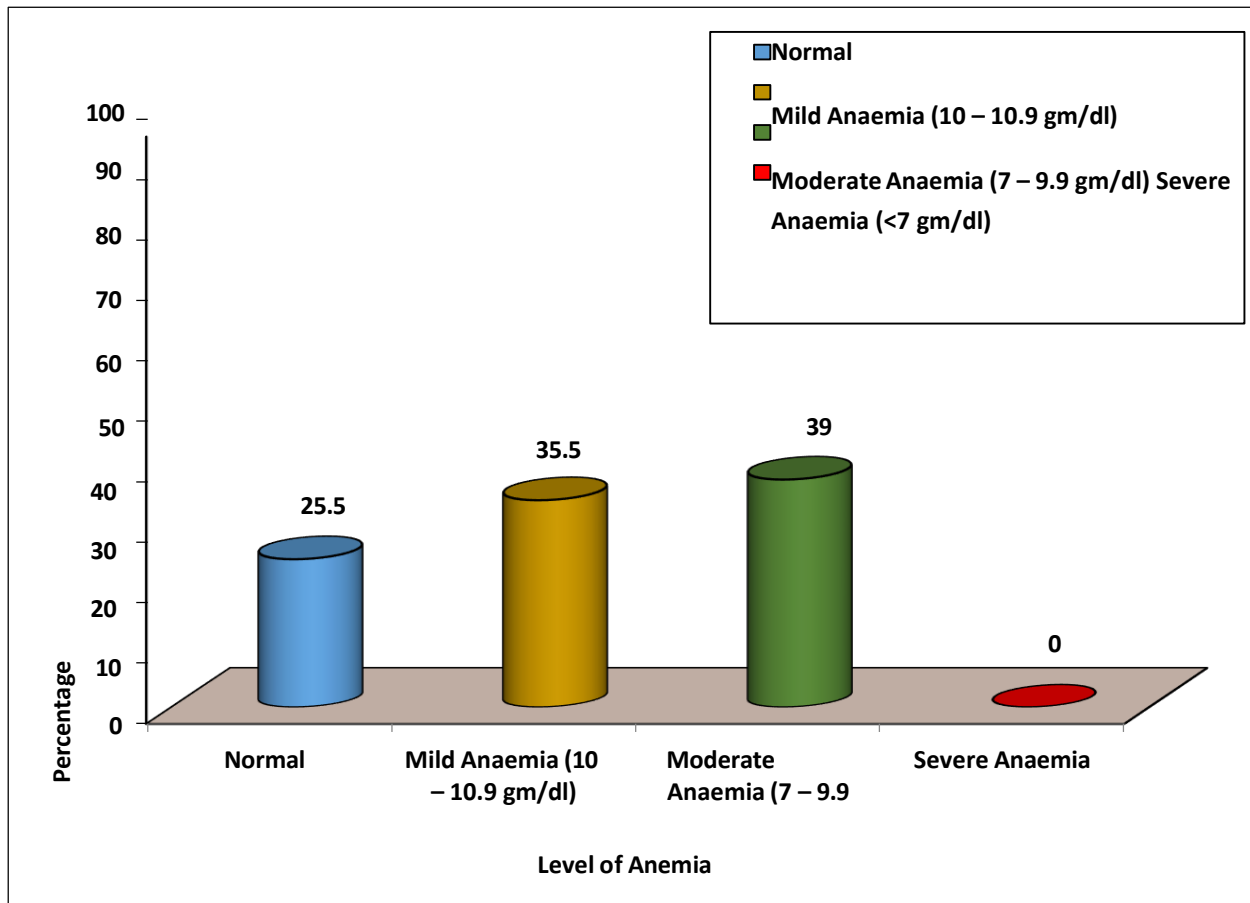
Demographic Variables	No.	%
Age (in months)		
6 months – 24 months	20	10.0
25 months – 36 months	60	30.0
37 months – 48 months	69	34.5
49 months – 60 months	51	25.5
Sex		
Male	121	60.5
Female	79	39.5
Maternal Educational Status		
No education	-	-
Primary	39	19.5
Secondary	67	33.5
Higher	94	47.0
Socio Economic Status		
Mild socio economic	73	36.5
Moderate socio economic	67	33.5
Low socio economic	47	23.5
Very low socio economic	13	6.5
Richest	-	-
Maternal Anemic Status		
Normal	58	29.0
Mild	93	46.5
Moderate	49	24.5
Severe	-	-
Birth order		
First born	87	43.5



Second born	68	34.0
Third born	45	22.5
Multiple	-	-
Children had fever recently		
Before 2 – 3 days	54	27.0
Before 1 week	74	37.0
Before 2 – 3 weeks	46	23.0
Before 1 month	26	13.0
Dietary habit		
Vegetarian	-	-
Non-vegetarian	94	47.0
Mixed diet	106	53.0
Vegan	-	-
Area of living		
Urban	67	33.5
Rural	133	66.5
Length of age		
90 – 110 cm	61	30.5
Less than 80 cm	74	37.0
Less than 70 cm	65	32.5
Weight for age		
14 – 15 kg	41	20.5
10 – 12 kg	91	45.5
Less than 10 kg	68	34.0
Degree of malnutrition		
Normal (91 – 99%)	-	-
1 st degree (76 – 90%)	108	54.0
2 nd degree (61 – 75%)	92	46.0
3 rd degree (Less than 60%)	-	-
Types of malnutrition		
Stunting	20	10.0
Wasting	73	36.5
Underweight	107	53.5



SECTION B: ASSESSMENT OF PREVALENCE OF MALNUTRITION AND ANEMIA AMONG UNDERFIVE CHILDREN.



Percentage distribution of level of anaemia among underfive children

SECTION C: ASSOCIATION OF LEVEL OF MALNUTRITION AND ANEMIA WITH SELECTED DEMOGRAPHIC AND CLINICAL VARIABLES.

Demographic / Clinical Variables	Frequency	Chi-square & p-value
Dietary habit		$\chi^2=6.375$
Vegetarian	-	d.f=2
Non-vegetarian	94	p=0.041
Mixed diet	106	S*
Vegan	-	
Weight for age		$\chi^2=11.918$
14 - 15 kg	45	d.f=4
10 - 12 kg	81	p=0.018
Less than 10 kg	74	S*
Degree of malnutrition		$\chi^2=6.768$
Normal (91 - 99%)	-	d.f=2



1 st degree (76 – 90%)	114	p=0.034 S*
2 nd degree (61 – 75%)	86	

The demographic variable dietary habits ($z=6.375$, $p=0.041$) had shown statistically association with level of anemia among underfive children at $p<0.05$ level. The clinical variables weight for age ($z=11.918$, $p=0.018$) and degree of malnutrition($z=6.768$, $p=0.034$) had shown statistically significant association with level of anemia among underfive children at $p<0.05$ level respectively. The other demographic and clinical variables did not show statistically significant association with level of anemia among underfive children.

CONCLUSION

The present study assessed the association between malnutrition and anemia in under-five children by using two binary variables of hemoglobin crest and low height for age and low degree of malnutrition. The study concluded that most of the under-five children had moderate to mild anemia and the parents of under-five had to be educated on malnutrition and the steps to prevent anemia.

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Cite this Article: Mrs. D. Anitha, Ms. Varasha K., M. Yamini, M. Janaki (2023). A Study to Assess the Association between Malnutrition and Anemia in Underfive Children by Using two Binary Variables of Haemoglobin Crest and Low Height for Age and Low Degree of Malnutrition at Nerkundram. International Journal of Current Science Research and Review, 6(11), 6999-7004