Prevalence and Risk of Acute Malnutrition among Children (6-59 months) Living IDPs Camps in Kaxda District, Mogadishu-Somalia: A Community Based Cross Sectional Study

Mohamed Abdi Mohamud¹, Abdullahi Abdi Husein², Abdirizak Moalim Ahmed³

¹Salaam University, School of Medicine and Surgery, Wadnaha Road, Mogadishu, Somalia Email: *mdcabdi4[at]gmail.com*

²Salaam University, School of Medicine and Surgery, Wadnaha Road, Mogadishu, Somalia Email: *jabane180[at]gmail.com*

³Salaam University, School of Medicine and Surgery, Wadnaha Road, Mogadishu, Somalia Email: *abdirizak1[at]gmail.com*

Abstract: Acute malnutrition (wasting) is defined as reflected a nutritionally deficient state of recent onset related to sudden food deprivation or mal-absorption utilization of nutrients which results weight loss, weight-for-height below-2SD from the WHO median value. <u>Objective</u>: To assess prevalence of acute malnutrition and its risk among children (6-59months) living in Internally Displaced camps of Kaxda District at Mogadishu-Somalia. <u>Method</u>: A cross-sectional study was carried out from 10th June to 15 July 2023 in children aged 6–59 months living in IDPs camps of Kaxda District at Mogadishu. Somalia. <u>Method</u>: A cross-sectional study was carried out from 10th June to 15 July 2023 in children aged 6–59 months living in IDPs camps of Kaxda District at Mogadishu. Somalia. <u>Result</u>: The overall prevalence of acute malnutrition (wasting) among children (6-59months) living in Internally Displaced camps of Kaxda District at Mogadishu, Somalia was found to be 60% (48/80), among them, severe wasting was 23.8% (19/80), moderate wasting was 36.2% (29/80) and only 40% (32/80) was in normal nutritional status. <u>Conclusion</u>: The prevalence of malnutrition among (6-59 months) children was high in this study. Therefore, effective interventions are needed to tackle this major child health problem.

Keywords: Acute malnutrition, Kaxda, IDPs

1. Introduction

Malnutrition in children is public health problem of significant magnitude, as it poses dire consequences for child survival, adversely impacting the cognitive and physical growth of children, as well as the economic productivity of both individuals and societies(1).

Malnutrition remains one of the most common causes of morbidity and mortality among children under five children throughout the World(2). Worldwide, over 10 million children under the age of 5 years die every year from preventable and treatable illnesses despite active health interventions. At least half of these deaths are caused by malnutrition. Malnourished children have lowered resistance to infection; therefore, they are more likely to die from common childhood ailments such as diarrheal diseases and respiratory infections(3)(4).

According to UNICEF, undernutrition is a result of inadequate food consumption and recurring infections(5). The consequences of prolonged malnutrition in children include stunted physical growth and motor development, a decrease in intellectual quotient (IQ), increased behavioral issues, and impaired social skills. Additionally, these children are more prone to contracting diseases(6). In 2019, acute malnutrition affected 47 million children aged under 5 years worldwide, including 14 million with the most severe form of malnutrition,1 and was an underlying cause of 875

000 child deaths.2 A quarter of all children with acute malnutrition were in Africa in 2018(7).

The Somali Health and Demographic Survey of 2020 has disclosed that, with regard to Somali children aged below five, malnutrition statuses are at a rate of 28% for stunted, 12% for wasting, and 23% for underweight(8). Furthermore, the Somalia Micronutrient Survey of 2019 has established that vast numbers of Somali children aged below five still lack access to good nutrition. In particular, the survey has revealed that 34% of children aged below five suffer from a deficiency of vitamin A, 43% suffer from anemia, and 28.6% suffer from iron-deficiency anemia. Additionally, 47% of pregnant women are anemic, according to the survey(8)(9).

The recent reports from WHO in Somalia, the prevailing circumstance of drought and famine in Somalia is undergoing a swift progression, persistently impacting an estimated 7.8 million individuals and leading to the displacement of 1.4 million. Moreover, this catastrophic situation poses a severe threat to the survival of over 1.8 million children under the age of 5, predisposing them to the dangerous consequences of severe malnutrition and related health intricacies(10).

A combination of socio-cultural, economic, and physiological factors makes women and children more susceptible to vulnerability during times of crisis. Various determinants such as poverty, insufficient nutrition, inadequate access to clean water and sanitation, insufficient

Volume 14 Issue 4, April 2025 Fully Refereed | Open Access | Double Blind Peer Reviewed Journal www.ijsr.net healthcare services, and the insecurity of displacement contribute to the elevated levels of morbidity and mortality experienced by displaced populations(11)(4).

2. Method and Materials

A cross-sectional study was carried out from 10^{th} June to 15 July 2023 to assess Risk factors of acute malnutrition among children (6-59months) in IDPs camps at Kaxda District Mogadishu Somalia. Study area, population and sample size: Kaxda District is a <u>district</u> in the southeastern Benadir region of <u>Somalia</u>. The IDPs heavily located in Kaxda district and where many of the displaced populations settled.

The study populations comprised children aged 6-59 months permanently living IDPs in Kaxda District.

We randomly selected 4 IDPs; the total inhabitants are 1,145, about 167 of were aged under five years; this is based on data from the camp leaders and local authorities. Only 80 met our inclusion criteria.

Data collection and statistical analysis: For data collection pretest criteria was used by selecting sample size of 18 respondents for tool validation. A written consent was taken from the local authority and the parents of the children who participated in the study. Parents with poor literacy were consented by research team members in the presence of a witness.

Anthropometric measurements of a total of 80 eligible children including weight and heights/length were taken. Weight was recorded in kilograms (kg) to the nearest 0.1kg. Children were weighed using electronic weighing scales and those who were unable to stand, had their weights obtained from the difference between weights of mother/caretaker as she/he holds the child and the weight of the mother/caretaker alone. Heights/lengths measurements were carried out using measuring boards (stadiometers) and were recorded in centimeters (cm) to the nearest 0.1 cm. Children aged more than 24 months (more or equal to 85cm) heights were measured while standing, while those less than 24 months or less than 85cm, had theirs lengths measured while lying down. Clinical evaluations of the malnourished children was undertaken to check for the presence of oedema.

- 1) Severe wasting: These are the proportion of children with z scores below -3 SDs from the median weight-for-height of the WHO reference population.
- 2) Moderate wasting: These are the proportion of study children with z scores in the range -3 SD \leq z scores < -2 SD from the median weight-for-height of the WHO reference population.
- 3) No malnutrition: These are the proportion of study children with z scores in the z scores > -2 SD from the median weight-for-height of the WHO reference population.

An exclusion criterion was a child with evidence of physical impairment (such as physical defects or a grossly deformed), mental impairment and edematous conditions.

Data were checked for completeness, sorted, coded, entered and analyzed into the computer using SPSS version 20. Chisquare test was used to test for significant association of the variables. A p-value of < 0.05 was regarded as significant. All reported p-values were 2-sided.

3. Results

Out of 80 questionnaires 80 were filled in and returned to the investigators (100% response rate).

Socio demographic characteristics: As shown in Table 1, the result of socio demographic characteristics, 68.7% of the children who completed the study were girls (55 children). Fifty one (43%) of the children was from large families (families with five or more personal); the rest were from small families (with less than five personal). In terms of child Age, about 48.8% of the children were between 6 to 24 months old, followed by 37.5% were 25 to 47 months old and 13.8% of the children were between 48 to 59 months old. In addition about 27.5% of families had income less than one dollar per day and 28.8% had the income more than one dollar and the rest were earning one dollar per day.

 Table 1: Socio demographic Characteristics

1_		
Frequency	%	
39	48.80%	
30	37.50%	
11	13.80%	
25	31.30%	
55	68.70%	
46	57.70%	
22	27.50%	
11	13.80%	
1	1.30%	
9	11.30%	
63	78.80%	
8	10%	
29	36.30%	
51	63.80%	
22	27.50%	
35	43.80%	
23	28.80%	
	Frequency 39 30 11 25 55 46 22 11 1 9 63 8 29 51 22 35 23	

Prevalence of malnutrition:

The overall prevalence of acute malnutrition (wasting) among children (6-59months) living in Internally Displaced camps of Kaxda District at Mogadishu, Somalia was found to be 60% (48/80), among them, severe wasting was 23.8% (19/80), moderate wasting was 36.2% (29/80) and only 40% (32/80) was in normal nutritional status.

Table 2: Prevalence of malnutrition (normal, moderate and

 course malnutrition)

severe mainduffion)							
Variable(s)	Frequency	Percentage					
Normal nutritional status	32	40.00%					
Malnutrition	48	60.00%					
1-Wasting	29	36.20%					
2-Severe Wasting	19	23.80%					
Total	80	100.00%					

Volume 14 Issue 4, April 2025 Fully Refereed | Open Access | Double Blind Peer Reviewed Journal www.ijsr.net

International Journal of Science and Research (IJSR) ISSN: 2319-7064 Impact Factor 2024: 7.101

Characteristics of the children and prevalence of malnutrition: Thirteen of the 25 boys (52%) compared to 35 of the 55 girls (63.6%) had acute malnutrition (p value = 0.613). The prevalence of malnutrition was slightly high for family sizes more than five 31 of 51(60.7%) followed by (58.6%) 17 of 29 were family sizes less than five, however sever wasting was higher for family sizes more than five 15

of 51 (29.4%) compering to the family sizes less than five 4 of 29 (13.8%). The malnutrition was significantly associated with prematurity of children (p value = 0.022), child received vitamin A (p value = 0.028), and illness in last two weeks (p value = 0.001). However, there was no statistically significantly association with child sex, family size, hand washing and low birth weight.

Table 3: Characteristics of the children and prevalence of mainutrition								
		Weight for Height/Length				D		
		Normal	Moderate	Severe	Total	r-	Sig.	
		Normai	Malnutrition	Malnutrition	Total valu	value		
Sex	Boy	12 (48%)	8 (32%)	5 (20%)	25	0.613	NS	
	Girl	20 (36.4%)	21 (38.2%)	14 (25.5%)	55			
Family size	Less than 5	12 (41.4%)	13 (44.8%)	4 (13.8%)	29	0.241	NS	
	More than 5	20 (39.2%)	16 (31.4%)	15 (29.4%)	51			
Source of water	Tab water	18 (41.9%)	13 (30.2%)	12 (27.9%)	43	0.421	NS	
	Others	14 (37.8%)	16 (43.2%)	7 (18.9%)	37	0.451		
Hand washing	Regularly	13 (54.2%)	6 (25.0%)	5 (27.9%)	24	0.219	NS	
	Occasionally	19(33.9%)	23 (41.1%)	14 (25.0%)	56			
Toilet facility	Hygienic latrine	13 (48.1%)	8 (29.6%)	6 (22.2%)	27	0.546	NC	
	Non hygienic latrine	19 (35.8%)	21 (39.6%)	13 (24.5%)	53		TND	
Low Birth Weight	Normal BW	27 (47.4%)	18 (31.6%)	12 (21.1%)	57	0.106	NS	
	Low Birth Weight	5 (21.7%)	11 (47.8%)	7 (30.4%)	23			
Was the child born prematurely?	Yes	1 (12.5%)	2 (25.0%)	5 (52.5%)	8	0.022	S	
	No	31 (43.1%)	27 (37.5%)	14 (19.4%)	72			
Has your child received vitamin A?	Yes	18 (58.1%)	7 (22.6%)	6 (19.4%)	31	0.028	S	
	No	14 (28.6%)	22 (44.9%)	13 (26.5%)	49			
Illness in the last two weeks	Yes	8 (26.7%)	8 (26.7%)	14 (46.7%)	30	0.001	S	
	No	24 (48.0%)	21 (42.0%)	5 (10.0%)	50			

Table 3: Characteristics of the children and prevalence of malnutrition

4. Discussion

Malnutrition is a major child health problem worldwide and a leading cause of childhood morbidity and mortality, especially in developing countries (12). Due to their rapid growth and susceptibility to infections, children have a higher risk of developing malnutrition (13). Additionally, the majority of the undernutrition burden exists in sub-Saharan Africa, and Somalia had more possibility due to persistent conflicts and natural disasters such as famine and drought(14). The food security and nutrition situation in Somalia has been impacted by a series of emergency occurrences since the early 1990s, resulting from repeated episodes of drought, flood, conflict and extensive population displacement. The recurrence and intensity of these adversities have been intensified by the non-existence of a strong government and the inadequacy of humanitarian ground (15).

The results of this study show prevalence of wasting was 60%. The result of this study revealed that, the prevalence of acute malnutrition is high when compared with a community cross-sectional study conducted in IDPs camp in Edo State, Nigeria where a prevalence of wasting was 41.2% and 19.9% in the rural kebeles of Shashemene district of Oromia, Ethiopia (16)(17). However, there are similar study conducted IDPs located northern Uganda, The prevalence of acute malnutrition was found to be 6.0% compering 60% for prevalence of acute malnutrition to our study the difference is huge(4). The variations of prevalence could be due to geographical and racial differences.

Moderate wasting was the common form of malnutrition in this study with 36.2% of the child (6-59 months). Moderate wasting was also reported as the major form of malnutrition among children from studies conducted rural area in Nepal, prevalence of wasting in children was 7%, which was wholly incorporated by moderate acute malnutrition. Severe wasting was null (18).

5. Conclusion

The prevalence of malnutrition among (6-59 months) children was high in this study. Therefore, effective interventions are needed to tackle this major child health problem.

6. Limitations of study

Each participant was interviewed once; the study could be improved by making it longitudinal study.

The sample selected for this study was specifically children in IDPs; the result obtained in this study cannot be generalized to all internally displaced (6-59 months) children in Somalia.

Funding

The study received no funding from any agency.

Competing interests

None declared.

Volume 14 Issue 4, April 2025 Fully Refereed | Open Access | Double Blind Peer Reviewed Journal www.ijsr.net

International Journal of Science and Research (IJSR) ISSN: 2319-7064 Impact Factor 2024: 7.101

References

- [1] Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, De Onis M, et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. Lancet. 2013;382(9890):427–51.
- [2] Manyike PC, Chinawa JM, Ubesie A, Obu HA, Odetunde OI. OF PEDIATRICS Prevalence of malnutrition among pre-school. 2014;1–5.
- [3] Mohamed S, Hussein MD. PREVALENCE OF ACUTE MALNUTRITION IN PRE-SCHOOL CHILDREN IN A RURAL AREA OF NORTHERN SUDAN. 2014;91(1):8–12.
- [4] M.A. O, E. M, H. B, C.G. O. Factors associated with malnutrition among children in internally displaced person's camps, northern Uganda. Afr Health Sci [Internet]. 2008;8(4):244–52. Available from: http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=ref erence&D=emed8&NEWS=N&AN=20589132
- [5] Keeley B, Chief E, Little C, Vrolijk K, Analyst D, Wauchope S, et al. Children , food and nutrition.
- [6] WHO Child Growth Standards.
- [7] Cazes C, Phelan K, Hubert V, Boubacar H, Bozama LI, Sakubu GT, et al. Articles Simplifying and optimising the management of uncomplicated acute malnutrition in children aged 6 59 months in the Democratic Republic of the Congo (OptiMA-DRC): a non-inferiority , randomised controlled trial. 2022;510–20.
- [8] Letter F. SOMALI GUIDELINES FOR INTEGRATED MANAGEMENT OF ACUTE MALNUTRITION Somali Federal Republic Ministry of Health and Human Service.
- [9] DNS Government of Somalia. and Demographic Survey 2020. SHD Surv 2020 Somalia. 2020;
- [10] WHO utilizes CERF funds to minimize health impact of drought. :1–4.
- [11] Oluwatosin AB, Tosin A, Michael E. Malnutrition among Internally Displaced Persons Children: A Consequence of Armed Conflicts in Nigeria. 2019;7(2):31–8.
- [12] Bhutta ZA, Salam RA. While poverty and socioeconomic inequity remains an important factor , in many cases , the presence of micronutrient deficiency is a factor of diet quality Global Nutrition Epidemiology and Trends. 2015;61(suppl 1):19–27.
- [13] Nutrition and growth in children Minerva Pediatrica 2020 December;72(6)_462-71 - Minerva Medica -Journals.
- [14] OCHA. WFP Somalia: Famine Prevention Response Situation Report. 2023;(May):6–9.
- [15] GRFC. 2021 Global Report on Food Crises Joint Analysis for better decisions. WFP - Website [Internet]. 2021;1–36. Available from: https://www.fsinplatform.org/sites/default/files/resourc es/files/FINAL_GRFC2021 Sept Update.pdf
- [16] Shifera N, Endale A, Debela D. Acute malnutrition and its contributing factors among children under-five years in rural kebeles of Shashemene Oromia , Ethiopia.
- [17] Ajakaye OG, Ibukunoluwa MR. Prevalence and risk of malaria , anemia and malnutrition among children in

Volume 14 Issue 4, April 2025 Fully Refereed | Open Access | Double Blind Peer Reviewed Journal www.ijsr.net

IDPs camp in Edo State , Nigeria. Parasite Epidemiol Control [Internet]. 2020;8:e00127. Available from: https://doi.org/10.1016/j.parepi.2019.e00127

[18] Chataut J, Khanal K. Assessment of Nutritional Status of Children Under Five years of age in rural Nepal. 2016;14(1):73–7.