

Prevalence and Factors Associated with Wasting among Children Aged 6 - 59 Months in Deynile, Banadir Somalia.

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ABSTRACT

Background

Undernutrition is a significant public health issue and a crucial health indicator for assessing the nutritional status and survival of children under five in many underdeveloped nations worldwide.

Purpose: This study aims to determine the prevalence of Undernutrition wasting among children aged 6- 59 months.

Method: A cross-sectional study design was carried out for children aged 6-59 months and a structured questionnaire was administered, and data was collected.

Result: The Prevalence factors of undernutrition in 6–59-month-old children. The aged 6-11 months since they registered the highest percentage of children below 11.5cm (14.9%). The age of 12-23 had the highest amount of wasted children. Older children (24–59 months) had a lower chance of wasting and MUAC<125 mm. The results indicated that 48.2% of the study population was wasted and 52.86% were malnourished.

Conclusion: Based on the findings of the study; Exclusive breastfeeding should be promoted among mothers for the first six months of life and continue breastfeeding alongside appropriate complementary feeding; Nutrition counseling and education for parents and caregivers.

INTRODUCTION

Nutrition is necessary for early childhood development and optimal health. Let's say kids consume insufficient amounts of macro and micronutrients.¹ In that scenario, kids might get sick, and experience delayed mental and motor development, which could have negative repercussions that last well into adulthood, or perhaps pass away.¹ Early intervention to address nutritional deficiencies and promote normal nutrition is critical because reversal may be exceedingly challenging after age two.¹

Nutritional Deficits continue to be troubling, complex issues that impact newborns, young children, teenagers, pregnant moms, and the elderly.² Children's rights to the best possible quality of health survival and development are violated by undernutrition. Even though undernutrition trends are improving, impoverished nations are frequently crippled by hunger and malnutrition.³

Malnutrition encompasses both excessive and insufficient nourishment.⁸ Undernutrition is defined as stunting, wasting, and underweight.⁹ Either a prolonged or transient deficiency in nutrients might result in undernutrition. It may also be brought on by a lack of food or a rise in the frequency of certain diseases.⁶

Undernutrition is defined as insufficient intake of energy and nutrients to meet an individual's needs to maintain good health. Characterized by stunting (Low height for age) and wasting (Low weight for height).⁵

Undernutrition is caused primarily by an inadequate intake of energy, and nutrients to meet an individual's needs for good health.⁷ It encompasses stunting, wasting, nutritional edema, and deficiencies of essential

vitamins and minerals (micronutrient deficiencies). Different forms of undernutrition may co-exist within the same individual.⁷

The number of undernourished people in sub-Saharan Africa rose from 181 million in 2010 to almost 222 million in 2016.¹³ Among children under five years, the prevalence of stunting decreased from 38.3% in 2000 to 30.3% in 2017.¹³ The rate of wasting in 2017 was 7.1% or 13.8 million children, of whom 4 million were severely wasted.¹³

Childhood undernutrition is broad in low and middle-income nations. In these nations, it is an imperative and backhanded cause of child mortality.⁴ Around the world, stunting and wasting besides intrauterine development limitations are mindful of about 2.1 million deaths in under-five children containing 21% of all deaths.⁴

Nutrition response programming has been taking place in Somalia for decades in the form of life-saving interventions like the distribution of food and cash, treatment of acute malnutrition, targeted supplementary feeding, and emergency public health measures during disease outbreaks, as well as in the form of livelihoods recovery and development programs in agriculture.⁵

livestock, water, and environment to improve resilience among vulnerable populations. However, the effectiveness of humanitarian assistance continues to be constrained by prevailing insecurity which restricts access and delivery of aid to some areas.⁵

METHODS

Study Design and study are

This study was a cross-sectional study with quantitative.

The study was conducted in Deynile district in Mogadishu, Somalia.

Study population

The study targeted caretakers of children aged between 6 and 59 months who live in the Deynile district. And sample size was 393

Inclusion criteria

Caretakers that had children 6-59 months who live in Deynile Mogadishu Somalia.

Exclusion Criteria

Children excluded from the study were those who were too sick, and whose caretaker refused to give ethical consent.

Sampling Procedure

The convenience sampling procedure was used in the study and it involved the selection of participants based on their accessibility and availability to the researcher.

Data Collection Instruments

The researcher mainly used a questionnaire to obtain data from the caretakers of children under five years at the Hospital. The questionnaire was divided into four sections. One section (A) was used for questions to obtain data on the social demographic of the respondents. The second section (B) involved medical conditions and the third section (C) contained Household dietary diversity. Section (D) was used to collect data on anthropometric measurements.

Data analysis

The data were coded, entered, and cleaned using Epi-data version 4.21 and analyzed in STATA version 15. Multivariate analysis and descriptive statistics were used to summarize the data. Frequencies and percentages were used for categorical variables.

Descriptive statistics

such as frequencies, percentages, and mean \pm SD were used to describe the data. To control for possible confounding factors and to identify factors that were independently associated with undernutrition, the p-value of less than 0.05 in the bivariable analysis. The Adjusted Odds Ratio (AOR) with 95% confidence intervals was used to notify the strength of the association. P-values of <0.05 were used to declare the statistical significance of the multivariable analysis.

RESULT

Demographics and socio-economic characteristics of children and their caregivers

Variable		Frequency (n=393)	Percentage (%)
Child Gender	M	167	42.49
	F	226	57.51
Age of the children (months)	6-11	74	18.83
	12-23	139	35.37
	24-36	108	27.48
	37-59	72	18.32
Children hierarchy birth	1 st	132	33.59
	2 nd	121	30.79
	3 rd	59	15.01
	4 th	52	13.23
	5 th and above	29	7.379
Caretaker	Mother	285	72.52
	Father	8	2.036
	Grandparent	39	9.924
	Other relatives	61	15.52
Caretaker's age (years)	<20	116	29.52
	21-40	215	54.71

	>40	62	15.78
Caretaker's Occupation	Unemployed	242	61.58
	Employed	151	38.42
Caretaker's marital status	Married	208	52.93
	Divorced	95	24.17
	Widowed	90	22.90
Caretaker's education	Diploma/degree	183	46.56
	Secondary	93	23.66
	Primary	62	15.78
	None	55	13.99
Family size	1-3 Children	147	37.40
	4-5 Children	146	37.15
	6 and above	100	25.45
Income	<50\$	95	24.17
	51-100\$	166	42.24
	100-150\$	92	23.41
	150\$ and above	40	10.18
Water source	Piped water	11	11.0
	Tanker	202	51.5
	Rainwater	53	13.5
	Waterbody	59	15.1
	Wells/boreholes	35	8.9

Study results in Table 1 indicated that 57.51% of children were females, 42.9% were males, 37% were aged 12-23 months and the majority of children (33.5%) were firstborn children in the family. It was found that most caretakers of children were mothers (72.5%), with most caretakers in the age range of 21-40 years (54.7%), 61.5% of the study respondents were unemployed, 52.9% were married; 46.5% had attained a diploma or degree and most of the families (37.4%) of the families have 1-3 children with most households 42.2% had a monthly income of 51-100\$.

Status of Malnutrition among the children

Data on Length/height and weight were converted to z-scores of heights or weight for height or length (WHZ) using the World Health Organization nutrition status charts to be able to determine the wasting status of the children nutrition status. According to the World Health Organization, a standard reference was adopted to

categorize children's nutritional status in stunting. -3SD, -2SD, and -1SD represent severely, moderately, and mild, respectively. 0 represents normal healthy children while 1SD, 2SD and 3SD represent mild overweight, overweight and obese respectively.

Table 2 below shows that in all age groups of the study population, apart from 12-23 (45.7%), most of the children were in the normal range, followed by the mild malnourished. Age range 37-59 had the highest percentage of severe wasting at 2.8% followed by 6-11 months. 46% of the children at 6-11 months were wasted, 52.9% at 12-23 were wasted, 22.2 of the 24-36 months were wasted and 48.6% of children aged 37-59 months old were wasted. Table 3 shows the MUAC finding with children aged, 6-11 months and 12-23 months had their MUAC average of 11.5—12.4cm at 70.3% and 64.2% respectively which indicated moderate acute malnutrition. Children aged 6-11 months had the lowest values of MUAC which were below 11.5cm and had severe acute malnutrition. Children aged 24-37 months (53.6%) and 37-39 months (77.8%) had the highest MUAC greater than 13.5 cm and were considered normal. Marginal estimates graphs in Figures 1 and 2 below showed that the females were less malnourished than men. Maximum wasting was observed in children 23-36 months old.

Table 1: Prevalence of Malnutrition (Wasting) among children aged 6-59 months old

Variable	Weight-for-length (Wasting) (%)							
	Age(months)	-3SD	-2SD	-1SD	0	1SD	2SD	3SD
Z-scores								
6-11	1.4	16.2	28.4	50	2.7	1.4	0	
12-23	0	5.1	47.8	45.7	1.4	0	0	
24-36	0.9	0.9	20.4	61.1	12.0	3.7	0.9	
37-59	2.8	6.9	38.9	40.3	11.1	0	0	

Table 2: Distribution of MUAC according to the age of the study population

AGE	<11.5cm		11.5-12.4cm		>12.5cm		N
	Freq	%	Freq	%	Freq	%	
6-11	11	14.9	52	70.3	11	14.9	74
12-23	5	3.6	88	64.2	44	31.9	137
24-37	5	3.6	29	21	74	53.6	108
37-39	1	1.4	15	20.8	56	77.8	72

Relationship between MUAC values and Wasting in the children with predisposing malnutrition factors. Association of the different factors with wasting

Much as the gender of the children much as had no association with wasting at the different ages except 37-59 months, overall sex had an association with wasting among the children (X^2 p=0.00). The caretaker's occupation showed an association with wasting in children between 12-23 and 37-59 as well as the overall p-

value (0.027). Much as the overall p-value indicated no association between family size and wasting, there was an association between the two amongst children aged 12-23 and 37-59. ($p=0.009$ and $p=0.049$ respectively). RTI was born to have an association with wasting as indicated by the overall p-value ($p=0.040$) much as within the different age groups, no association was seen. Consumption of fruits had an association with the 12-23 age and not with any other. All the rest of the factors showed no association between the children at given ages with wasting.

Association of the different predisposing factors with MUAC values

Unlike wasting in sex showed no relationship with the MUAC values obtained from the study population. Caretakers' occupation presented no association with the children's MUAC value as seen by a p-value greater than 0.05 ($p=0.456$) though an association was seen at the age of 12-23 months ($p=0.006$). Household income was seen to affect the MUAC values at the overall P-value ($p=0.033$) but not at an age level. Malaria and Measles were seen to have an association with MUAC at the age of 24-36 months. much overall it didn't have an association. The time taken to give other foods and access to a latrine was also seen to have an association with the MUAC values by the overall p-value (0.041 and 0.018) respectively. Finally, much as foods consumed regularly and the type of foods at the overall p-value was seen not to have an association with the MUAC value, at months 12-24 months.

CONCLUSION

The undernutrition rate in our study suggested that by age most children were normal however overall, less than 50% were wasted and more than 50% had a low MUAC. This indicates that the level of malnutrition is reducing and factors such as RTIs and the time of weaning should be addressed to reduce the undernutrition rate.

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