

A Hospital-based Study on Demographic Features of Children with Severe Acute Malnutrition

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Abstract

Background: Severe acute malnutrition (SAM) remains a major health hazard to children, as the mortality rates among SAM children are nine times higher than those in well-nourished children. This study was conducted to assess the demographic features of malnourished children. **Methods:** A total of 100 malnourished children were included over a period of six months. A preliminary data of children regarding age, start of complimentary feeding (CF), maternal education, parity were noted. Anthropometric measurements such as height/length, weight, mid-upper arm circumference (MUAC) were recorded in all the patients. **Results:** Majority were in the age group of 6–18 months (64%) and least were in 45–59 months. Females were more with M:F ratio of 1:1.1. 94% of families resided in rural areas. Most of the children hailed from middle (58%), followed by lower (41%) class and one child belonged to upper socioeconomic class. About 70% of children were born to multiparous mothers. Approximately 50% children were of low-birth weight. Only 8% babies were bottle fed and in 76% children, weaning time was inappropriate. **Conclusion:** The short birth interval, low socio-economic status, lower mother's educational level and delay in the initiation of complimentary feeding were the important risk factors of SAM among children. Children with SAM need to be treated with special attention at the primary point of care to reduce mortality.

Keywords: Malnutrition, Anthropometry, Feeding.

Introduction

Severe acute malnutrition (SAM) in children is a serious public health problem with major concerns for child survival, damaging the cognitive and physical development of children, in turn affecting the economic productivity of individuals and society.¹ Globally, it is estimated that nearly half (45%) of deaths in children under 5 years of age is due to undernutrition.²

Objective

To assess the demographic patterns of children with severe acute malnutrition.

Materials and Methods

This is a hospital-based, cross-sectional study conducted from July 2019 to December 2019 in the Department of Pediatrics in a tertiary care center. A

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total of 100 malnourished children in the age group of 6–59 months were included over a period of six months. A preliminary data of children regarding age, sex, socioeconomic status, residence, start of complimentary feeding (CF), maternal education, parity were noted. Each child was subjected first to measurement of length or height. For children <2 years of age, recumbent length was measured. Subsequently, MUAC and body weight measurement were assessed. A written consent was obtained from the informants of all children and an approval from the ethical committee of the institution was received.

Inclusion and exclusion criteria: Children between age group of 6–59 months and who fulfilled the criteria for SAM were included in this study. Children were excluded if they were in shock, had severe respiratory difficulty, or significant bleeding at the time of admission.

Results

Majority were in the age group of 6–18 months (64%) and least were in 45–59 months. M:F ratio was 1:1.1. 94% of families resided in rural areas. Most of the children hailed from middle (58%), followed by lower (41%) class and one child belonged to upper socioeconomic class. None of the mothers were graduates, 10% of mothers completed pre-university education, 26% higher secondary education, 21% primary education and rest 43% had no formal education (Table 1). About

70% of children were born to multiparous mothers. Approximately 50% children were of low-birth weight. Only 8% babies were bottle fed and in 76% children, weaning time was inappropriate. Interval between pregnancies of index children was less than 2 years in 61% and more than 2 years in 39% babies.

Table 1: Distribution of SAM children based on mothers' education

Level of education	Percentage
Graduation	0
Pre-university college	10
Higher secondary school	26
Primary education	21
No formal education	43

Discussion

Malnutrition is one of the leading causes of morbidity and mortality among children under the age of 5 in low and middle income countries like India. According to National Family Health Survey -3, 7.9% of under-five children in India suffer from SAM.³ Majority were in the age group of 6–18 months (64%), followed by 19–31 months (18%) and least were in 45–59 months (Fig. 1). Similar results were reported by several published studies.⁴⁻⁶ This may suggest the risk of development of SAM is higher in first few years of life as initial 2 years of life are the critical period for growth and development of a child.

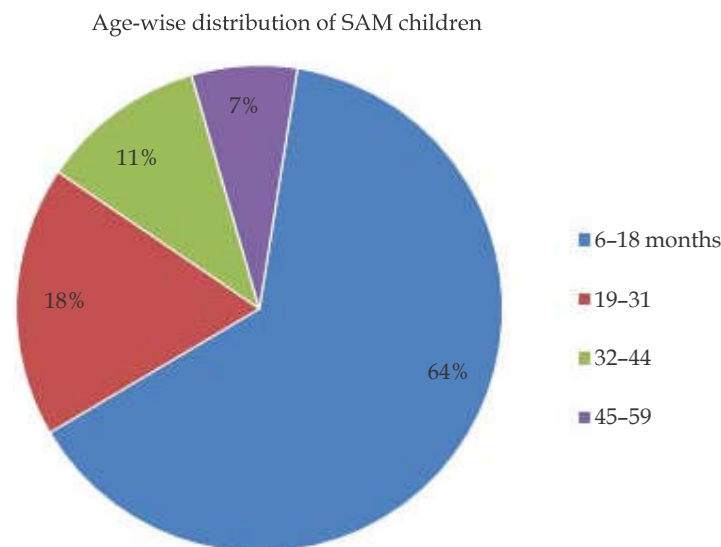


Fig. 1: Distribution of subjects according to age groups.

The proportion of females with SAM was higher than male. This could be due to discrimination of female child regarding amount and nutritious content of diet and more attention given to growth of male child in the community.⁵

Few studies also documented similar results in terms of maternal education, socioeconomic status, birth interval and parity of mother.^{7,8} The prevalence of SAM was high in lower and middle socioeconomic classes, which was comparable with other studies.^{9,10} This could be explained by the fact that children from families of low socioeconomic status have limited access to food, health services, hygiene and sanitation.

The prevalence of SAM was high in children hailing from rural areas (96%) as compared to urban areas. This could be due to improper road, poor infrastructure, increased family size, poor knowledge of hygiene and sanitation in rural areas.^{7,11}

Birth interval <24 months was also an independent determinant for SAM which is similar to studies from Ethiopia, Bangladesh and India.^{7,12,13} This may be because of poor knowledge of spacing method.

Conclusion

Younger age, lower maternal education, lower socioeconomic status, lesser birth interval, improper initiation of complimentary feeding predisposes a child to SAM. Improvement in our education system, an effective family planning program, a poverty alleviation program, awareness about spacing method and the timely initiation of complementary feeding might decrease the prevalence of SAM in India. There is a need for further prospective studies to determine the association of above risk factors with malnourishment. Communal education especially of women and young people is essential to improve nutritional levels in the rural regions.

Conflict of interest: Nil

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