

Determinants of Severe Acute Malnutrition among Under 5 Children

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ABSTRACT

Malnutrition has been major public health problem in all the developing countries. In malnutrition we can see two major cases which is Sever acute malnutrition and Moderate acute malnutrition. In cases of Nepal both SAM and MAM cases are highly found in rural remote areas. Due to geographical condition of Nepal road and transportation are not access to all the areas due to which there is no proper health facilities access. Severe acute malnutrition is one of the major public health problems in developing countries having a devastating effect on the lives of many children under 5 years of age. Malnutrition is one of the leading causes of morbidity and mortality among children under the age of 5 years in low and middle income countries like India, Nepal, and Bhutan etc. Children with severe acute malnutrition (SAM) are nine times more likely to die than children without malnutrition. However, the determinants of SAM have not been clearly assessed in the country. Low economic status and frequency of breastfeeding less than 8times/day were major determinants of SAM among children under 5yrs of age. Ending malnutrition will required greater efforts and integrated approaches to eradicate extreme poverty.

Keywords: Sever acute malnutrition, Malnutrition, Determinants, under-five children.

INTRODUCTION

Around 1.9 billion adults worldwide are overweight, while 462 million are underweight. An estimated 41 million children under the age of 5 years are overweight or obese, while some 159 million are stunted and 50 million are wasted. Adding to this burden are the 528 million or 29% of women of reproductive age around the world affected by anemia, for which approximately half would be amenable to iron supplementation. In April 2016, the United Nations General Assembly adopted a resolution proclaiming the UN Decade of Action on Nutrition from 2016 to 2025.¹ The Decade aims to catalyze policy commitments that result in measurable action to address all forms of malnutrition. Close to 20 million children under the age of 5 years suffer from SAM globally, and about 1 million of them die each year. Malnutrition refers to

deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients. The term malnutrition covers 2 broad groups of conditions. One is 'undernutrition' which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies

or insufficiencies (a lack of important vitamins and minerals). The other is overweight, obesity and diet-related non-communicable diseases (such as heart disease, stroke, diabetes and cancer). Malnutrition affects people in every country.² severe acute malnutrition is a life threatening condition requiring urgent treatment. Until recently, the recommendation was to refer these children to hospital to receive therapeutic diets along with medical care.³ The situation changed recently with the advent of ready to use therapeutic foods (RUTF) which allows the management in the community of large numbers of children who are severely malnourished above the age of 6 months without medical complications. A meeting of experts was organized by the Department of Child and Adolescent Health and Development and the Department of Nutrition for Health and Development of the WHO, by UNICEF and the UN Standing committee on Nutrition in Geneva on 21-23rd November 2005 to review these recent developments and formulate recommendations.⁴ The report of this meeting is available on this web page. It is expected that implementation of these community-based interventions on a large scale along with a strengthening of referral facilities for severely malnourished

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children with complications could transform the lives of millions of these children.⁵

Critical Analysis

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A total of 664 children between the age group of 6- 59 months were screened for SAM. The prevalence of SAM was found 7.53%. Factors like, low economic status, birth interval less than 2 years, frequency of breast feeding <8 time/day and household food insecurity were found to be significant determinants of SAM.³ The response rate was 97.8%. Severe acute malnutrition was significantly associated with age groups birth-24 months, late initiation of breast feeding greater than an hour after birth, nonexclusive breast feeding, diarrheal disease in the preceding 2 weeks before SAM, febrile illnesses preceding 2 weeks before SAM, decreased or maintained mealing of the mother compared to the regular during pregnancy or lactation and birth interval less than 2 years after controlling other variables effect.⁴ The prevalence of SAM among children under the age of 5 years was 4.14%. The factors which significantly associated with SAM are low socioeconomic status, mother's age at birth <20 or >35 years, birth interval <24 months, illiterate father, bottle feeding and not initiating complementary feeding at the age of 6 months. Mother's educational level, initiation of breastfeeding, colostrum feeding, and exclusive breastfeeding were not significantly associated with SAM.⁵ Almost 48% children admitted in the hospital were identified with severe acute malnutrition. More males (55%) were malnourished as compared to females (45%). Maternal education, household income, family size, breastfeeding, vaccination status, and frequent infections were found to be significantly associated with the severe acute malnutrition.⁶ From the above study, it is clear that age of the child <2 years, female gender, bigger family size, poverty, illiteracy in mother, poor feeding practices, improper complementary feed introduction, poor nutritional status of mother whose child were breastfed, acute or chronic illness in child and narrow birth spacing were the chief determinants of SAM in under five children.⁷ The finding of the study was multivariate analysis with conditional logistic regression revealed that severe acute malnutrition was associated with maternal illiteracy, lack of maternal autonomy in decision making, diarrhea 2 weeks preceding the survey, sub optimal frequency of complementary feeding and visit to health institution after 24 hours of the onset of symptoms for sick child after the effects of other significant variables were controlled.⁸ A total of 132 children, 66 cases and 66 controls were enrolled. Risk factors associated with wasting were: difficulty in breathing, cold, fever, unavailability of hand washing place, unavailability of toilet, open disposal of child stools and household food insecurity.⁹ Among the total 350 children enrolled in this study, 31%, 22% and 8% of the children were stunted, underweight and wasted, respectively. Besides, 9% and 4% of the children suffered from overweight and obesity respectively. The key determinants for stunting were number of children in the household, mother being a house, and being poor. For obesity, the predictors were child age with 12-23 months, 24-35 months,

child gender with males more likely to be obese relative to females.¹⁰

Severe acute malnutrition and its associated factors among children under-five years

The odds of a child being in the SAM category increased significantly if the family have five or more children and if the household yearly income is below an average. The children in the Madhesi family were 3.6 times more likely to be malnourished. Toilet facility and family with no kitchen garden were significantly associated with SAM among under five children. Children from moderate food insecure and severe food insecure households were 3.2 and 5.5 times more likely to be malnourished respectively. Compared to the mothers with no job, mother with some sort of paid job had more than six times higher odds of having severely acute malnourished children.¹ Out of 398 children, 5.8% were severely malnourished and the higher percentage of female children were malnourished. Multivariate analysis showed that severe acute malnutrition was significantly associated with family size (five or more members). Children from severely food insecure households were four times more likely to be severely malnourished. Higher odds of SAM were found among younger age-group children (0-12 vs. 24-59months).¹²

Individual and household risk factors of severe acute malnutrition among under-five children

At the individual level, SAM was significantly associated with diarrhoea, fever, vomiting, being stunted, and type of complementary meal. At the household level, SAM was significantly associated with undernourished caretaker, caretaker's hand washing habits, absence of toilet, caretaker's marriage status, and low household food diversity.¹¹

Risk factors for severe acute malnutrition in under five children

The children in SAM increase the significantly in a family who below in poverty line like having kaccha house, have more children in a family, mother who works and illiteracy in family. Father who use tobacco or consumption of alcohol and a mother having a height <145 cm, have a maternal weight < 45 kg, mother who get married early age, not exclusive breastfeeding up to 6 month are the some of the risk factor for SAM among the under five children.¹⁶

Severe acute malnutrition in Asia

Many SAM cases can be found in Asia. Countries in Asia have to recognize SAM as a major problem and mobilize internal resources for its management. Screening of children in the community for SAM. Six countries in Asia together have more than 12 million children suffering from SAM: 0.6 million in Afghanistan, 0.6 million in Bangladesh, 8.0 million in India, 1.2 million in Indonesia, 1.4 million in Pakistan, and 0.6 million in Yemen. Ready-to-use therapeutic food (RUTF), the key to home management of SAM without complications, is still not endorsed by many countries because of its unavailability in the countries and its cost. It should preferably be produced locally from locally available food ingredients. Health facilities in all high-burden countries should be staffed and equipped to treat children with SAM. The basic nutrition interventions, which

include breastfeeding, appropriate complementary feeding, micronutrient supplementation, and management of acute malnutrition, should be scaled up in Asian countries that are plagued with the burden of malnutrition.¹⁷

Management of severe acute malnutrition in low-income and middle-income countries severe A number of risk factors, including seasonal food insecurity, environmental enteropathy, poor complementary feeding practices, and chronic and acute infections, contribute to the development of SAM. Careful anthropometry is key to making an accurate diagnosis of SAM and can be performed by village health workers or even laypeople in rural areas. The majority of children can be treated at home with ready-to-use therapeutic food under the community-based management of acute malnutrition model with recovery rates of approximately 90% under optimal conditions. A small percentage of children, often those with HIV, tuberculosis or other comorbidities, will still require inpatient therapy using fortified milk-based foods.¹⁸ For community-based treatment of SAM, children given RUTF were 51% more likely to achieve nutritional recovery than the standard care group. For the treatment of MAM, children in the RUSF group were significantly more likely to recover and less likely to be non-responders than in the CSB group. In both meta-analyses, weight gain in the intervention group was higher, and although statistically significant, these differences were small. The Delphi process indicated that adherence to standardized protocols for the treatment of SAM and MAM should have a marked positive impact on mortality and recovery rates.¹⁹

Future Prospects

After search of various literature it is understood that SAM cases is higher among under- develop country and developing country special people belong to poverty line, illiterate, age of mother at birth.

Specific interventions on promoting exclusive breastfeeding, vaccination, and timely health care seeking behaviors would definitely improve the outcomes. Nevertheless, multi-sector wide approaches would be needed on girls' education, poverty, promoting family planning and food security in order to address the issue of malnutrition.

Nutrition related policies should be made to focus more in promoting the nutrition among children and adults. Multi-sectoral nutrition plan should be made were all the stalk-holders should come forward and work together to manage and prevent malnutrition.

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