ORIGINAL RESEARCH PAPER

Community Medicine

SOCIOCLINICAL PROFILE OF SAM CHILDREN ADMITTED TO A NUTRITIONAL REHABILITATION CENTRE IN SOUTH ODISHA

Durga Madhab Satapathy	Mkcg MCH, Berhampur
Bimal Kumar Sahoo	Mkcg MCH, Berhampur
Dhaneswari Jena*	Mkcg MCH, Berhampur *Corresponding Author

ABSTRACT

Background : As per WHO, malnutrition attributes to more than 60% of the deaths among under five children in developing countries.SAM children need nutritional therapy and rehabilitation to prevent relapse.Objective:To study the socioclinical profile of children admitted to Nutritional Rehabilitation Centre.

Material and methods: A cross sectional study conducted among all children admitted at City Hospital, Berhampur from Jan 2017- June2018.Data was collected and analysed in the department of Community Medicine.Results :children < 6 months, 6 mo-2 years and 2-5 years were 4.1, 61.8 and 34.1% respectively.58.5% were females,96.7% Hindu ,79.7% rural.Low weight for age was commonest (43.9%) cause of admission.ARI and diarrhea were the common co-morbidities. 95% had satisfactory outcome on discharge.Conclusion:Therefore vulnerable time is from 6mo- 2 years of age . Rural residence ,poverty, inadequate child care and infection were factors associated. Clinical outcome in NRC is good but recurrence of SAM can be prevented by community awareness.

INTRODUCTION:

Global picture of child health shows most of the childhood illness India bears the brunt brunt of high morbidity and mortality which is reflected form NHFS 4 data and is directly related to many socio-economic factors Malnutrition is at the background in spite of various nutritional programmes running since long.[1] Prevalence of wasting is 20% in India.[2] Screening procedures used to identify SAM are MUAC, weight for height, severe visible wasting or bilateral pitting edema.NRC is a super specialised health and nutrition facility staffed by well trained pediatrician, nursing personnels, nutrition counselor and cooking personnel.It has optimal clinical management facility to handle complications.[3] The services provided at NRC include 24 hours care and monitoring of the child,social assessment of the family to identify and address contributory factors and follow up of the children discharged from the facility.

MATERIALSAND METHOD :

It is hospital based cross sectional study conducted between january 2017 and june 2018 October 2016 and September 2018 at NRC of City Hospital, Berhampur on 123 admitted SAM children by convenient sampling with IEC approval and consent Study Instrument consisted of a pre-designed and pre-tested questionnaire to record data on socio-demographic variables, and clinical variables.

RESULTS : Table1 shows the socio demographic profile of study participants.Majority(61.8%) were between age group of 6 months to 2 years which was higher than the finding (40.7%) by Bhimani NR et al.[4] Even 4.1% of children admitted were below 6months of age, much more than the study of Bhimani NR et al. where distribution was 0.71% in same age group[4]. In the present study, 34.1% of the children were between age group of 2 years to 5 years which is less than the Bhimani's observation (58.5%).[4] In the study of Ali et al., 24% children were below 6 months of age and 76% children were from 6 to 60 months.[5] Kabeta et al. in his study showed 12.6% children aged below 6 months, 71.2% children aged between 6 to 23 months and 16.2% children aged above 24 months.[6] Similarly in study of Aprameya et al., children aged between 6 and 59 months with 12% below 1 year, 29.7% between 1 to 2 years,25.3% between 2 to 3 years and 33% above 3 years.[7]

41.5% were male children and 58.5% female children.Similar observations was made by Rawat et al.[8] and Kumari et al.[9] but opposite in study of Aprameya et al.[7] and Kabeta et al.It was also revealed that 96.7% children were Hindu, 2.5 % Christian and only 0.8% case Muslim by religion. Hindu children dominated in

studies by In a similar type of study by Chaturvedi et al.[10] and Kamatham M et al.[11]

The above table demonstrates that 8.5% of the study participants were of general caste and 29.3% were OBC. SC and ST were 26.8 % and 15.4 % respectively.Rawat et al. had shown 15.7 % were from general, 24.5% from OBC , 22.5% from SC, 37.3% from ST caste.[8] Kumari et al. in her study had 38% of the study population belonging to the backward caste, 35% belonging to the scheduled caste and only 3% belonging to the scheduled tribe caste.[9] The table showing the place of residence majority(79.7%) children were from rural area. Predominance of rural children in the present study is similar to the study by Syed Tariq A et al., where 85 % children were from rural area [12] and Kabeta et al. had 97.9% participants from rural area.[6]

In the study by Kumari et al. showed that rural residence was one of the most significant risk factors in the SAM children admitted in NRC ,Guntur Medical college where 64% of children were from rural area and 36% from urban area.[13]

The table describing the socio-economic status of the families of study participants as per the modified Kuppuswamy scale,very few i.e. 0.8% children belongs to upper Socioeconomic status, 20.3% to upper middle SES and 31.7% to lower middle SES. Upper lower and lower SES were 43.9% and 3.3% respectively. So more number of children belongs to families of lower socioeconomic status. The study by Pravana NK et al. had 32.2% of the cases from lowest socio economic status, 31.5% of the cases from second, 18.5% of the cases from middle and 34.9 % of the cases from highest socio-economic status.[14] Also in study of Aprameya et al. 6.6% had upper middle, 37.4% had lower middle and 56% upper lower socio-economic Status.[6]

The above finding is supported by the study of Benjamin and Zachariah[15] ,Pandey and Singh [16] and Ubesie et al. [17], where poor family income was found as a risk factor for severe malnutrition. This may be due low purchasing power of the affected families for adequate nutritious foods.

As described above , the education status of the mothers of 8.1% children was matriculation, 15.4% were educated upto high school,21.1 % up to middle school and 13.8 % up to primary school. However 41.5% mothers were illiterate . Pandey and Singh in their study had 35.9% of the cases as illiterate, 24.4% of the cases educated upto primary, 23.1% of the cases educated upto high school and 16.7% of the cases educated till

intermediate and above.[16] The study by Thapa et al. demonstrated 38.9% of the mothers as illiterate, 20.7% educated upto primary school, 35.1% educated upto middle school and 5.3% educated upto intermediate level[18]. Illiteracy is observed in more than one third of mothers of SAM children in present study which is similar all the above studies. 24% of mothers among cases and 80% of the mothers were illiterate in the studies by Kamatham M et al.[11] and Jamro B et al.[19] respectively.Assessing occupation of the mothers, 68.3% were house wife. Out of rest 31.7% , 12.2 % were agriculture workers, 8.9% house maid, 5.7% construction workers, 3.3% tailor, 0.8% as cook in government school, 0.8% working at anganwadi centre. In the study by Abuka et al., 67.5% of the cases were house wife, 31.2% were merchant and 1.3% were employed.[20]

Table 4 depicts the immediate cause of admission as mentioned by mothers of the admitted children. 43.9% were admitted for low weight for age,24.4% for loss of appetite,17.1% had both low weight for age and loss of appetite,13% had weakness in addition to these two causes. 0.8 % reported for delayed milestones and 1 case (0.8 %) had low weight for age who was previously admitted and had got cured. Though all babies were of low weight for age, only 44 % of mothers perceived it and sought health care for this from the health facility.

The table 5 demonstrates the distribution of co morbidities among the children admitted to NRC. Fever (19.5%) was the major co-morbidity followed by anemia (4.1%), cerebral palsy (1.6%), malaria (0.8%), multiple congenital defect (0.8%), scabies (0.8%), TB suspect (0.8%), skin lesion (0.8%). However 4.1% of them did not have any co-morbidity.

Outcome of the study participants is shown in table 6. 96.9% had satisfactory outcome and 3.3% were referred. However 1 case (0.8%) of SCD had defaulted due to personal reason which is within the acceptable limits (<15%) as per the guideline [3]. The defaulter rate was just higher (1.84 %) in the study by Bhimani NR et al.[4] The study by Kabeta et al. had 78% cured, 16.2% death, 3.1 % transferred out and 2.6% defaulted.[6] In the study by Syed Tariq A et al. , the recovery rate, death rate and defaulter rate was 75.3%, 0.68% and 1.36% respectively.[12]

CONCLUSION :
Age prevalence among age group 6m to 2 yrs was high. This may be due to defective complimentary feeding practice during this transitional period . Adequate growth monitoring in community can prevent SAM. Improvement in all known socioeconomic factors can change the picture. ICDS and VHND should be proper platform for health and nutrition education. Strengthening of implementation of these programs is a matter of priority in this regard. Though care at NRC is satisfactory ,recurrence of the condition may occurs if community factors and practice does not improves.

Table 01 : Socio demographic profile of study participants (N = 123)		
Socio demographic Factors	No.	%
Age		
< 6months	5	4.1
6months -2years	76	61.8
2years -5years	42	34.1
Gender		
Female	72	58.5
Male	51	41.5
Religion		
Hindu	119	96.7
Muslim	1	0.8
Christian	3	2.5
Caste		
General	35	28.5
OBC	36	29.3
SC	33	26.8
ST	19	15.4
Residence		
Rural	98	79.7
Urban	25	20.3
Total	123	100

Table 02 : Socio-economic status of the study participants (N= 123)		
Socio-economic Status	No.	%
26 – 29 (upper)	1	0.8
16 -25 (upper middle)	25	20.3
11 – 15 (lower middle)	39	31.7
5 – 10 (upper lower)	54	43.9
Less than 5 (lower)	4	3.3
Total	123	100

Table 03 : Education and occupation of the mothers (N =123)		
Education of the mother	No.	%
Intermediate or post high school diploma	10	8.1
High school certificate	19	15.5
Middle school certificate	26	21.1
Primary school certificate	17	13.8
Illiterate	51	41.5
Occupation of the mother		
House wife	84	68.3
Agricultural worker	15	12.2
House maid	11	8.9
Construction worker	7	5.7
Tailoring	4	3.3
Cook in Govt. School	1	0.8
AWW	1	0.8
Total	123	100

Table 04 : Immediate causes of admission (N = 123)		
Causes of admission	No.	%
Low weight for age	54	43.9
Loss of appetite	30	24.4
Low weight for age and loss of appetite	21	17.1
Low weight for age / previously admitted and cured	1	0.8
Delayed millstones	1	0.8
Low weight for age , loss of appetite and weakness	16	13.0
Total	123	100.0

Table 05 : Co-mobidities diagnosed during the stay at NRC (N = 123)		
Co-morbidities	No.	%
ARI	37	30.1
Diarrhea	28	22.8
Scabies	1	0.8
LRTI	16	13
Anemia	5	4.1
Fever	24	19.5
Malaria	1	0.8
Multiple Congenital Defect	1	0.8
TB Suspect	1	0.8
CP	2	1.6
SCD	1	0.8
Absent	5	4.1
Total	123	100

Table 06 : Conditions of SAM children at discharge (N = 123)		
Condition	No	%
Satisfactory	118	95.9
Referred	4	3.3
Defaulter	1	0.8
Total	123	100.

RFERENCES
1) Levels and trends in child malnutrition, UNICEF / WHO / World Bank Group Joint Child Malnutrition Estimates Key findings of the 2018 edition. In.
2) National Family Health Survey – 4, 2015 -16, Ministry of Health and Family Welfare,

Government of India.

3) Guidelines for Management of Severe Acute Malnutrition (SAM) Children at Nutrition Rehabilitation Center, National Rural Health Mission Department of Health & Family Welfare Government of Gujarat (GoG) Year: - 2012

4) Bhimani NR, Vachhani P V, Kartha GP. A study to evaluate the effects of nutritional intervention measures on children admitted in the nutritional rehabilitation center (Bal Sanjeevani Kendra) of Surendranagar district. 2015;3(8):1989–93.

5) Ali SM, Meshram HS. A hospital-based study of severe acute malnutrition in infants less than six months and comparison with severe acute malnutrition in children 6 – 60 months. 2017;46(3):234–7.

6) Kabeta A, Bekele G. Factors Associated with Treatment Outcomes of Under-five Children with Severe Acute Malnutrition Admitted to Therapeutic Feeding Unit of Yirgalem Hospital Clinics in Mother and Child Health. 2017;14(2).

7) Aprameya HS, Kamath SP, Kini PK, Baliga BS, Shenoy U V, Jain A. Socioepidemiological determinants of severe acute malnutrition and effectiveness of nutritional rehabilitation center in its management. 2015;148–53.

8) Rawat, Ritesh Marskole P. Measures on children with severe acute malnutrition admitted in Nutrition Rehabilitation Centre at Civil Hospital. 2015;4(17):2937–42.

9) Sarala KK. Assessment of Weight Gain of Children Admitted to Nutrition Rehabilitation Center & Afterwards for Two Years. Indian Institute of Public Health, Hyderabad Public Health Foundation of India, Hyderabad.

10) Chaturvedi A, Patwari AK, Soni D, Pandey S, Prost A, Gope RK, et al. Progress of children with severe acute malnutrition in the malnutrition treatment centre rehabilitation program : evidence from a prospective study in Jharkhand ,India. 2018;1–9.

11) Kamatham M, Rajeev PK, Shireesha A, Ushashree GV. Study of risk factors of severe acute malnutrition (SAM) in children 6 months to 5 years of age and evaluation of effect of micronutrient supplementation (WHO protocol) on serum zinc and magnesium levels : a case control study. 2017;4(4):1198–205.

12) A ST, Naik SA, A WR, Saleem R. Demographic , clinical profile of severe acute malnutrition and our experience of nutrition rehabilitation centre at children hospital Srinagar Kashmir. 2015;2(3):233–7.

13) Kumari PS. A study of predictors of sam in children of NRC of GUNTUR. 2015;4(03):393–9.

14) Pravana NK, Piryani S, Chaurasiya SP, Kawan R, Thapa RK, Shrestha S. Determinants of severe acute malnutrition among children under 5 years of age in Nepal : a community- based case – control study. 2017;1–7.

15) Benjamin, A.I., & Zachariah P. Nutritional status and feeding practices in under-3 years old children in a rural community in Ludhiana, Punjab. Health and Population– Perspectives and Issues,. 1993;16(1&2):3–21.

16) Pandey P, Singh SK. Dietary determinant of severe acute malnutrition among infants : Evidence from a case controlled study at a Central Indian district. 2016;6(1):32–9.

17) Ubesie AC, Ibeziako NS, Ndiokwelu CI, Uzoka CM, Nwafor CA. Under-five protein energy malnutrition admitted at the University of Nigeria Teaching Hospital , Enugu : a 10 year retrospective review. 2012;1–7.

18) Thapa A, Gs S, Op M. Analysis of Co-morbidities in Children with Severe Acute. 2015;35(2):99–102.

19) Jamro B S, Risk factors for severe acute malnutrition in children under the age of five year in Sukkur. Pakistan J Med Res. 51(4):111–3.

20) Abuka T, Jember D, Tsegaw D. Determinants for Acute Malnutrition among Under-Five Children at Public Health Facilities in Gedeo Zone , Ethiopia : A Case-Control Study Pediatrics & Therapeutics. 2017;7(2).