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Assessment of Performance on Community Management of Acute Malnutrition in Wagini OTP Center, Batsari Local Government Area of Katsina State

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Abstract
Community Management of Acute Malnutrition (CMAM) is a community-based integrated approach for management of acute malnutrition. Retrospective and on the spot (present) assessment performance of community management of acute malnutrition program was carried out at Outpatient Therapeutic Programme (OTP) centers in Wagini of Batsari Local Government Area of Katsina State with the aim of assessing the performance of the programme in the locality. Assess coverage and other performance indicators of CMAM programme, biochemical and hematological parameters of children with severe acute malnutrition (SAM) and relapse rate were indices assessed using standard procedures. Point (95.66%), treatment (87.70%) and period (96.26%) were significantly ($p<0.05$) higher than the 50% (rural coverage) and 70% urban coverage stipulated by the SPHERE standard and there was no significant difference ($p>0.05$) in the coverage data between the retrospective study and present study. The performance indices: cure rate (93.19%), death rate (5.65%), default rate (13.27%) and non-recovery rate (3%) are classified as good performance when compared with SPHERE standard. There were also no significant differences ($p> 0.05$) among the performance indices in the retrospective and present study. There was also a notable steady improvement in the growth performance and recovery indices (Mid Upper Arm Circumference Weight for height and Oedema) among the SAM children admitted to the OTP Centers for the 8 week period. Similarly, significant ($p<0.05$) improvements were recorded in the biochemical and haematological indices determined (Packed cell volume, Haemoglobin concentrations, Serum albumin and glucose concentrations) in both study groups at the point of discharge and the average relapse rates determined for SAM children at wagini OTP center was 10%. From these results, the CMAM programme in Wagini, Batsari LGA of Katsina State is running well in alleviating the SAM burden in the coverage area. There is the need to work with other partners especially World Food Program (WFP) Action against hunger (AAH) for the harmonization and integration of Supplementary Feeding Program (SFP).
Key Words; Anthropometric, Retrospective, CMAM, SAM, OTP.

INTRODUCTION

Severe acute malnutrition (SAM) is a condition characterized by bilateral pitting oedema, mid-upper arm circumference (MUAC) of <11.5cm and/or weight for height (WFH) of < – 3Z score (NFM, 2008).WFH is used to determine whether a child is acutely malnourished. The child's weight is compared to the 'normal' weight for the attained height. Normal weights for children are determined by studies that have weighed thousands of healthy children. Based on this information, the World Health Organization (WHO) has developed charts known as International Standards for Expected Growth (WHO, 2006). If a child's weight falls within the range considered normal for his/her height, the child is found to be well nourished. Measuring mid-upper arm circumference (MUAC) is another measurement used to determine a child's nutritional status.

Since MUAC measurements require a simple, colour-coded measuring band rather than weighing scales and height boards, they are often used during crisis situations. It is useful for children between six month and five years of age. A MUAC measurement of less than 12.5cm but greater than or equal to 11.5cm indicates that a child is suffering from moderate acute malnutrition.

If the MUAC measurement of a child is found to beunder 11.5cm, life may be in danger as he or she is suffering from severe acute malnutrition. All children under five years old having MUAC less than 12.5cm i.e. moderate and severe malnutrition are referred to as having global acute malnutrition (GAM), (WHO, 2006). The third way of diagnosing an acute malnutrition is by testing for the presence of oedema, Oedema affects a child's appearance giving him or her puffy, swollen look in either lower limbs and feet or face. It can be detected by small pits or indentations remaining in the child's lower ankles or feet, after pressing lightly with the thumbs. The presence of oedema in both feet and lower legs is always considered a sign of severe acute malnutrition (WHO, 2006).

Severe acute malnutrition has traditionally been managed in inpatient facilities. However, in several large scale humanitarian crises in the 1990's, it became evident that the traditional therapeutic feeding center (TFC) model of inpatient care was unable to provide an effective response. For example, during famine in South Sudan in 1998, only small proportion of acutely malnourished individuals was treated in NGO-run TFC. Access was a considerable obstacle, and coverage was very limited. People that reached the TFC were congregated together, exposing them to the risk of cross infection and additional security risk. Furthermore, the opportunity costs to the family of having to stay in the center were high. Caregivers, usually mothers, had to stay in center for several weeks leaving their other children and family members at home and rendering them unable to engage in daily activities (CTC Manual, 2012).

Community based management of acute malnutrition Programme was designed to address these limitations. Its underlying aims are to maximize coverage and access, in practice, this means prioritizing providing care for the majority of the acutely malnourished children. This can only be done by providing treatment in people's homes. Community mobilization techniques are used to engage the affected population and maximize coverage. Where ever possible, the programme builds on local capacity and existing structures and systems, helping to equip communities to deal with future period of vulnerability (USAID, 1999).

The major challenges of management of SAM in Katsina state is funding. The other barriers are integration and ensuring the sustainability in the supply of Ready to use Therapeutic Foods (RUTF). Interestingly, the CMAM programme which is curative in nature has also not been well integrated with preventive care that focuses on working CMAM with Infant and young child feeding program (IYCF) and other protective interventions like cash transfer and income generation project to address the basic causes of malnutrition at house hold level (KTSHMB, 2015).

The aim of the study is to assess the performance of community management of Acute Malnutrition programme in the management of severe acute malnutrition in Wagini OTP Centre at Batsari Local Government Area of Katsina State. The objective of the research is to determine the access and coverage, Retrospective and present performance indicators, Growth recovery performance indicators, Biochemical and Haematological indicators, and rate of relapse on community management of acute malnourished children (CMAM) in the study area.

MATERIALS AND METHODS

Design of the Study

The design of this work was such that a retrospective data and present field data were collected. Data already available at the OTP centers of wagini (Jan –March 2014) with regards to access and coverage of CMAM in the study area, performance indicators of CMAM in the study area and anthropometry, biochemical and haematological parameters were obtained and served as retrospective data. For the present data, an eight weeks data collection period was set up (Aug- Sept., 2014) such that children identified with SAM within the study area were enrolled into the OTP center and monitored.

Similarly, fresh access and coverage indices data and CMAM performance indices data were also collected. Both sets of data were at the end of the day used for determining various indices compared (Stratta *et al*, 2003). This was necessary in order to have a clear picture of how the CMAM program is performing. In addition, a follow-up study was also conducted where 25% of the discharged cured 6 – 59 months children were randomly selected and followed-up in the community to assess the rate of relapse 8 weeks after discharge (Elia and Stratta, 2000).

RESULTS

Table 1: Mean Coverage of CMAM Programme in Wagini OTP Batsari LGA, Katsina State.

Coverage Determinants	Wagini		LGA Average
	RC	PC	
Treatment	90.55 ± 5.25[b]	94.44 ± 2.44[b]	87.66 ± 4.79
Geographical	20.00 ± 0.00[b]	20.00 ± 0.00[b]	18.33 ± 0.00
Point	90.53 ± 2.89[a]	90.51 ± 0.49[b]	95.66 ± 1.70
Period	96.83 ± 0.90[a]	92.01 ± 1.99[b]	96.26 ± 2.33

Values with different superscripts along the row per OTP are statistically significant P <0.05, RC – Retrospective coverage, PC – Present Coverage **n=209.**

Table 2: Mean Performance Indicators of CMAM Programme in Wagini OTP, Batsari LGA, Katsina State

Performance Indicator	Wagini		LGA Average
	RPI	PPI	
Cure rate	86.88 ± 5.05[a]	93.52 ± 1.85[a]	93.19 ± 9.53
Death rate	3.78 ± 1.62[a]	1.54 ± 0.62[a]	5.65 ± 2.71
Default rate	9.46 ± 6.07[a]	2.93 ± 1.07[a]	13.27 ± 9.28
Non-recovery rate	2.66 ± 3.79[a]	0.00 ± 0.00[a]	2.99 ± 4.26

Values with different superscripts along the row per OTP are statistically significant P <0.05 RPI – Retrospective performance indicators, PPI – Present performance indicators **n=226.**

Table 3: Percentage Distribution of SAM Children by their MUAC, WFH and Oedema at Admission and Discharge

Growth Recovery Parameters	Admission	Discharge
MUAC	82	11
WFH	70	11
Oedema	3	0

Key: MUAC: Mid Upper Arm Circumference
WFH: Weight for Height

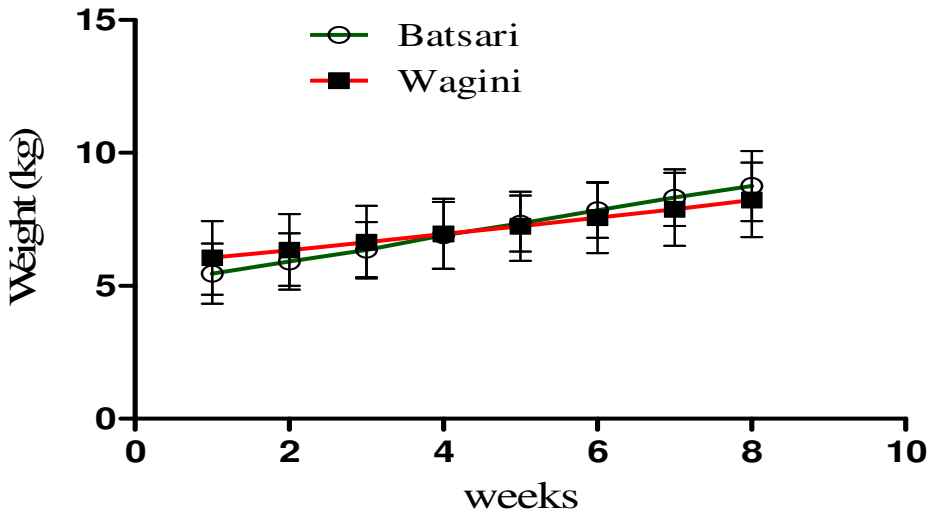

Figure 1: Percentage Distribution of SAM Children by Anaemia Status at Admission and at Discharge in Wagini OTP Centre.

Table 4: Biochemical and Haematological Indices of SAM Children at Admission and Discharge in Wagini OTP

Parameter	% of SAM Children Within Normal Range		
	At Admission	At Discharge	% Improvement
Glucose:			
Normal range (3.0 – 8.8mmol/L)	14%	76%	62
PCV:			
Normal range (33 – 45%)	14%	35%	21
Serum Albumin:			
Normal range (30 – 52g/L)	16%	39%	23

Table 6: Rate of Relapse among SAM Children at Batsari LGA OTPs 8 Weeks Post Discharge

Growth and Recovery Parameters	Wagini OTP n=57	LGA Average n=110
MUAC	17.5	10
WFH	5	5
Oedema	0	0

DISCUSSION

Malnutrition exists in Katsina state according to the report of Nigeria Demographic and Health Survey (NDHS, 2013) and at present one of the ways it is managed is through the community-based integrated approach, CMAM. Assessment of this program in the state to the best of my knowledge and data available has never been conducted, this work represents the first time that community management of acute malnutrition assessment has been carried out in Batsari local government area of Katsina state, were retrospective study was compared with present study. More so, other components of the program, namely: stabilization care and feeding program were not taken into account in the conduct of this work (NDHS, 2013).

The effectiveness of CMAM services and the coverage it achieves are directly linked. Similarly, coverage is a key indicator for the management of acute malnutrition (CMAM Forum, 2012). Considering the results in Table 4.1, where CMAM coverage indices where examined, the clear indication of no significant difference ($p>0.05$) between the retrospective and present data implies that both data agree and is representative of the actual scenario of what is obtainable on the ground. In addition, going by the value of LG averages of the respective coverage data which have all been found to be within the acceptable range of the SHERE standards on minimum acceptable levels of coverage for the management of acute malnutrition for rural areas, one could say that the coverage of CMAM program in Batsari OTP centers is adequate, implying that all the necessary coverage and access of points, geography, treatment and period with regards to management of acute malnutrition in Batsari LGA have been adequately accounted for.

Performance of CMAM program is directly linked with the effectiveness of CMAM coverage. As shown in Table.2, the explanation that could be given for the no significant difference ($p>0.05$) between the retrospective and present studies data could also be that there is coherence, consistence and harmony in the two independently collected data with respect to the work conducted. Similarly, the values for the LG averages in the CMAM performance indices represent a clear demonstration of good performance as adjudged by the internationally recognized SPHERE standards when comparison were made (WEHAB,2002).

In trying to assess the recovery of severely acutely malnourished children in Wagini OTP Batsari LG admitted into OTP centre in the month of October, growth performance indices: MUAC, WFH and oedema were examined among them at the point discharge and compared with the point of admission.

Results obtained as presented in Table 3 and Figure 1 could be discussed to clear improvement in the nutritional status of the SAM children since all the data show significantly low number of children with MUAC, WFH below the normal range at the point of discharge. For oedema, none of the SAM children still had it at the point of discharge. This is a clear indication of effectiveness of the CMAM program as a whole. The average relapse rate obtained, which have also been compared with sphere standard is indicative of good improvement (WEHAB, 2002).

Biochemical and haematological indices like serum albumin, PCV, haemoglobin concentration etc., have been used in assessment of nutritional status (Chan *et al.*, 1997). For this work, from the haematological /biochemical data obtained, presented in table 4, the percentage improvement in the level of anaemia, albumin concentration and other data among the SAM children at the point of discharge when compared at the point of admission shows a substantiating improvement in the nutritional status of the SAM children under CMAM and also effectiveness of the CMAM programme being run in Batsari local government area.

CONCLUSION

All indices for the assessment of coverage-point (96%), treatment (87%), and period (98%) are significantly higher ($p<0.05$) than 50%(rural coverage) prescribe by the SPHERE standard. The performance indices-cure rate (97%), death rate (0%), default rate (0%),and Non recovery rate (0%), are classified as good performance as per sphere standard. Moreover, there is no significant difference ($p>0.05$) among the performance indices in the retrospective and present study.

There were significant improvements ($p<0.05$) in biochemical and hematological indicators of SAM children at point of discharge when compared with the point of admission values.

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