

Availability and capacity of nutrition units in primary health centers in Sokoto State, North Western Nigeria

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ABSTRACT: A cross sectional descriptive study was carried out in Primary Health Centers (PHCs) in Sokoto State to assess the availability of nutritional units in primary health care facilities in the state and their capacities. The target for the study were the in-charge of the sampled PHCs and nutrition units of the PHCs. The study PHCs were selected using the cluster sampling method. Data were collected using an interviewer-administered questionnaire and observer checklist. The study shows a lack of adequate demonstration kitchens and utensils in many PHCs, inappropriate, multitasking and poorly trained personnel. It is recommended that demonstration kitchens in the PHCs be revitalized and adequate staffing and training be provided for nutrition staff across the state.

Keywords: Availability, capacity, nutrition, Sokoto State.

INTRODUCTION

Appropriate nutrition is an important good; children who are well fed are more likely to be healthy, productive and apt to learn. Malnutrition is devastating; it reduces intellectual capacity, drains productivity, and prolongs poverty for any family and society it affects (UNICEF, 2013; WHO, 2020a). Good nutrition promotes economic progress, development, and human wealth. The benefits of good nutrition affect generations, sustaining positive outcomes at all levels of society (Macdonald *et al.*, 2001). Nutrition is an important element for reaching many of the other sustainable development goals (SDGs). In 2019, about 750 million individuals globally were reported to be suffering from hunger caused by poverty (FAO, 2018). With the adoption of the Sustainable Development Goals (SDGs), the need to invest in nutrition has increased. Even though problems associated with poor nutrition affect the entire population, women and children are more vulnerable because of their unique socioeconomic characteristics (Ferdousi and Dehai, 2014). Nutrition is responsible for many health problems in developing as well as developed communities; it is also an important

factor in maintaining health as well as in the treatment of diseases (Khan *et al.*, 2018). Nutritional deficiencies contribute to the high rates of disability, morbidity, and mortality in Nigeria, especially among infants and young children (NDHS, 2018).

The promotion of food supply and proper nutrition is one of the components of primary health care programme. Malnutrition directly or indirectly contributes to about one-third of deaths among children under five, with greater than two-thirds of which are often associated with inappropriate feeding practices, and they occur during the first year of life (NDHS, 2018). The World Health Organization recommends that infants should commence breastfeeding within the first hour of life, they should be exclusively breastfed for six months, with introduction of appropriate complementary foods with continuous breastfeeding for at least two years of age. Promoting sound feeding practices is one of the main responsibilities of a nutrition unit (WHO, 2020b).

The nutritional status of Nigerian children is not improving. The percentage of stunted children decreased from

41% in 2008 to 37% in 2013, but remained unchanged in 2018. For the percentage of children wasting, it increased from 14% in 2008 to 18% in 2013, and decreased to 7% in 2018. The percentage of overweight children increased from 23% in 2008 to 29% in 2013, and back to 23% in 2018. Nigeria is faced with the double burden of malnutrition, underweight and overweight and obese children (Khan *et al.*, 2018).

Primary health care is the key to attaining health for all, one of its components is promoting proper nutrition. The role of the primary health sector is to prevent and manage malnutrition. The first is a direct role in implementing health interventions that have an impact on the nutritional status of individuals, families, and communities, including the application of specific nutritional concepts at all levels of the health system (Mahler, 1986). The primary health care system in Nigeria is faced with barely functional facilities, with insufficient human resources, regular commodity stock outs (Aregbeshola and Khan, 2017). The lack of confidence in the health system has led to poor demand for health care services and has not helped improve the health indices in the country. The minimum standard puts a check on human resources, infrastructural development, and service provision required at the Primary Health Care level. Adherence to the minimum standard by states and LGAs will lead to improved service delivery at primary health care centers. The minimum standards are aligned to ensure that all Nigerians have equitable access to health (NHW, 2020).

A multinational cross sectional study in selected primary health facilities in Seanern Countries showed the capacity for providing nutritional promotion was relatively low (Du *et al.*, 2019). Another study in Bangladesh showed that the structural readiness to provide nutrition services was greater for ANC compared to management of sick children; 73% of ANC rooms had >5 of the 13 essential items while only 13% of the designated areas for management of sick children had >5 of the 13 essential items. One in five (19%) healthcare providers had received nutrition training through the National Nutrition Survey (NNS). Delivery of the nutrition services was poor: <30% of women received all four key antenatal nutrition services, 25% of sick children had their weight checked against a growth chart and <1% had their height measured (Billah *et al.*, 2017).

Malnutrition remains a problem in Sokoto state, and the availability of nutritional unit and their capacity to function in primary health facilities in Sokoto state are unknown. Hence the need for this study which aims at assessing the availability of nutritional units in primary health care facilities in the state and their capacities.

METHODOLOGY

The study was a cross sectional study of the Nutrition Units of Primary Health Centers (PHCs) in Sokoto State. The

study sites were selected using a cluster sampling method by randomly selecting one of the three (3) Senatorial districts in the state. All the PHCs in the district were selected for the study. The five PHCs that runs Community Based Management of Acute Malnutrition (CMAM); a UNICEF program, were excluded from the study.

The study subjects were the in charge of the facilities and nutrition units of the facilities. Interviewer administered questionnaire and observer checklist were used to collect the data from the health facilities. The data was analyzed using SPSS statistical software version 24 and descriptive statistics was used to describe the variables obtain from the data.

The checklist used in this study was based on minimum ward package for Nigerian PHCs on nutrition.

The ethical approval was sought from the Sokoto state research ethical board and permission was also obtained from Sokoto State Primary Health Care Development Agency for the research to take place.

RESULTS AND DISCUSSION

This study aimed at assessing the availability of nutrition unit and their capacity to function in Sokoto State. The findings from this study showed majority of the respondents were aged 35-51 years. Most of the respondents were males, this may be because there are more males in the workforce compared to females. Most of the respondents were married and of Islamic religion, this is because Sokoto is a Muslim dominant State. Less than half of them had worked for about 12 years above (Table 1).

Majority of the staff in the nutrition unit were CHEWs and less than a quarter of them were nutrition technicians (Table 2). This is because there are more CHEWs than any other cadre of workers in primary health facilities. And because they are more, they are trained to take up other responsibilities. The nutrition technician who should be responsible for carrying out these services are quite few in number. This results in an increased workload for the CHEWs, which will reduce the efficient delivery of healthcare services which may lead to reduced health facility utilization. The State primary health care development agency should employ more nutrition technicians to manage the nutrition unit. Some of the problems confronting the Nigerian health system include poor financing, lack of equipment, and inadequate health workforce amongst others (Brieger, 1979; Obionu, 2007). This is different from that in a similar study in Bangladesh where 60% of the healthcare providers interviewed in the primary healthcare facilities, were doctors, followed by nurses and paramedics (Islam *et al.*, 2022).

Most of the respondents had received training on breast-feeding, complementary feeding, and nutritional deficiency (Table 2). The training will help improve the knowledge and skill of the health workers which will in turn improve

Table 1. Socio-demographic characteristics of the respondents.

Variable	Frequency	Percentage
Age category		
18-34	6	20.7
35-51	20	69.0
52-68	3	10.3
Sex of the respondents		
Female	3	10.3
Male	26	89.7
Marital status		
Married	28	96.6
Single	1	3.4
Religion of the respondent		
Islam	27	93.2
Christianity	1	3.4
Others	1	3.4
Years spent in services		
3-4 yrs	1	3.4
5-6 yrs	2	6.9
7-8 yrs	3	10.3
9-10 yrs	7	24.2
11-12 yrs	4	13.8
13 yrs-above	12	41.4

the information on breastfeeding, complimentary feeding, nutritional deficiency, and services given to the patients, which will also improve their health status. Likewise, majority of the respondents had also received training on food supplementation and storage. This is important because it will help the staff offer the appropriate information on the importance of food supplementation and storage, this will help prevent nutritional deficiencies and improve the peoples' nutritional status. The findings in this study are higher than that in a similar study in Ghana where 54.7% had received training on breastfeeding counselling, 45.3% had received training on complementary feeding, and only 41.1% had received training on CMAM with one of its' components as supplementary feeding (Nsiah-Asamoah, 2018).

Capacity building is important in improving the quality-of-service delivery and should be a continuous process. About half of the respondents had received training in the past one to two years (Table 2). There is a need for recurrent training to keep the staff updated on nutritional interventions and services offered, especially because most of the staff are CHEWs. About a third of respondents offered a step-down training. It is necessary for those who have received training to ensure those who did not attend

Table 2. Capacity of the officers in charge of nutrition unit.

Variable	Frequency	Percentage
Cadre of the nutrition officers		
Nutrition Technician	4	13.8
CHEW	22	75.9
JCHEW	1	3.4
Others	2	6.9
Number of years in nutrition unit		
3-4yrs	1	3.4
5-6yrs	2	6.9
7-8yrs	3	10.3
9-10yrs	7	24.2
11-12yrs	4	13.8
13yrs-above	12	41.4
Offering other services than Nutrition		
Yes	9	31.0
No	20	69.0
Ever had training on Breastfeeding		
Yes	28	96.6
No	1	3.4
Ever had training on complementary feeding		
Yes	27	93.1
No	2	6.9
Ever had training on nutritional deficiency		
Yes	25	86.2
No	4	13.8
Ever had training on food supplementations		
Yes	18	62.1
No	11	37.9
Ever had training on food storage		
Yes	19	65.5
No	10	34.5
When last had any form of training		
1-2yrs	16	55.2
5-6yrs	1	3.4
7-8yrs	11	38.0
9-10yrs	1	3.4
Were there any other trainee or stepped down training		
Yes	11	37.9
No	18	62.1
Number of other trained workers		
Only 1	11	37.9
None	18	62.1

Table 3. Availability of nutrition equipment in the facilities base on minimum ward package

Variable	Frequency	Percentage
Availability of demonstration kitchen		
Yes	9	31.0
No	20	69.0
Functional weighing scale		
Yes	13	44.8
No	16	55.2
Functional Refrigerator		
Yes	23	79.3
No	6	20.7
Food demonstration Chart		
Yes	21	72.4
No	8	27.6
Adequate cutleries		
Yes	11	37.9
No	18	62.1
Cooking implements		
Yes	9	31.0
No	20	69.0
Plates and spoon		
Yes	13	44.8
No	16	55.2
Availability of tape rule		
Yes	9	31.0
No	20	69.0
Child Health Card		
Yes	20	69.0
No	9	31.0
Manuals		
Yes	26	89.7
No	3	10.3
Registers		
Yes	27	93.1
No	2	6.9

the training receive the same information they have received, by so doing more people will have the capacity to offer nutritional services. This is similar to a study in Mozambique which showed the percentage of health professionals who received at least one training on

nutritional services in the last two years were 58.2%, with training on the feeding of babies and young children being the most reported (40.3%). The study also showed only 33.3% of nutritionists had received training in two years (Sambo *et al.*, 2022).

Based on the ward minimum health package for nutrition, the health facilities are expected to have a demonstration kitchen, weighing scale, refrigerator, demonstration chart, cutleries, tape rules, cooking implements, plates and spoons, child health cards, manuals, and registers. A demonstration kitchen is part of the health facility where a food demonstration should take place. Less than a third of the health facilities had a demonstration kitchen but a majority of them had demonstration charts (Table 3). Slightly above a third and less than a third of the facilities had cutleries, and cooking implements respectively. Less than half had plates and spoons. These are also important for the food demonstration sessions. The demonstration chart aids the understanding of the people. There is a need for a place where food can be displayed and mothers taught how to prepare healthy meals using locally available food. Mothers who are taught can further step down this knowledge to others in the community. The Health Department of the Local Government should work with the head of facilities to ensure a room is set aside for food demonstration and also ensure the provision of cutleries, cooking implements, plates, and spoons which are basic requirements for the food demonstration sessions. The findings in this study are lower than that in Bangladesh which showed 51% of facilities had the expected resources to provide nutrition interventions during ANC, 51% for growth monitoring, and approximately half the required resources for child health services. Facility readiness was assessed using the following criteria, trained personnel, guidelines, equipment, diagnostic capacity, and medicines (Nguyen *et al.*, 2021).

Majority of the health facilities also had child health cards and registers (Table 3). The child health card is important for growth monitoring. This is good because it helps to keep health workers updated on the health status of the patients/clients. Less than half of the health facilities had a functional weighing scale and less than a third had Shakir's tape. These instruments help in identifying malnutrition. If they are not available, identifying early malnutrition may be difficult. Identifying the condition early will prevent the complications. A study in Nigeria which assessed availability of infrastructure in primary health facilities showed 51.8% in Taraba and 59.4% in Bauchi, Kebbi (52.2%), Niger (58.7%) and Anambra (85.4%) had functional adult weighing scales. These were all higher than the findings in this study. The proportion of facilities with functional infant weighing scale were 30.8, 32.5, 33.7, 69.1, 65.9 and 65.8% respectively for Niger, Kebbi, Taraba, Bayelsa, Ekiti and Anambra States (Oyekale, 2017). A study in Nnewi showed only 25% of the facilities

had Shakir's tape, this was less than the findings in this study (Nnebue *et al.*, 2012). Another study also in Bangladesh showed most facilities had adult weighing scales (96.2%), stadiometers (96.2%), and registers (90.5%). Social and behavior change communication (SBCC) materials on maternal nutrition were less available (69.8%). Less than half of facilities had basic training guidelines on nutrition, most facilities had infant weighing scales. However, some gaps remained around availability of child weighing scales, length boards, mid-upper arm circumference (MUAC) tapes, growth monitoring cards and SBCC materials on Infant and Young Child Feeding (Islam *et al.*, 2022).

Majority of the health facilities had a refrigerator (Table 3). A refrigerator is important for food preservation, which is also important for achieving good food demonstration programs. In facilities without refrigerators, some of the food left after the demonstration may be disposed of, leading to a waste of resources but with a refrigerator, it could be preserved. The state primary healthcare development agency in conjunction with the local government should ensure all health facilities have a refrigerator in the nutrition unit. Lack of equipment remains a major reason for poor healthcare service utilization (Koce *et al.*, 2020). About 71.1% of respondents in a study in Kaduna reported a deficiency in equipment at the primary health care facilities (Silas *et al.*, 2015). Without equipment, the health workers cannot do much to help the people and achieving the SDG 2 may be a difficult task.

Conclusion and Recommendations

Base on the study, the demonstration kitchens available are not adequate and ill-equipped. Therefore, demonstration kitchens in the various nutrition units should be resuscitated where available and new ones to be provided in facilities where it is lacking. Appropriate staffing should be made to prevent multitasking of the existing staff members and frequent training on public health nutrition should be provided by the State Primary Health Care Development Agency.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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