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RESEARCH ARTICLE

EVALUATION OF KNOWLEDGE ON MALNUTRITION AMONG CARE-GIVERS OF CHILDREN RECEIVING READY-TO-USE THERAPEUTIC FOOD (RUTF) IN BAUCHI L.G.A

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ABSTRACT

Blockchain technology is revolutionizing the financial technology sector (FinTech) by increasing security and Undernutrition is a life-threatening problem in children and may increase the chances of multiple infections leading to stunted growth. This study was conducted to assess Socio-demographic Characteristics and knowledge of Malnutrition among Caregivers of Children Receiving Ready-to-Use Therapeutic Food (RUTF) in Bauchi L.G.A. Thirty-three (33) caregivers were selected by non-probability sampling. The socio-demographic characteristics of the caregivers and their knowledge of malnutrition were collected using semi-structured validated questionnaires. Demographic characteristics of the caregivers revealed that 20 (61%) of them were aged between 20-29 and 4 (12%) between 40-49 years. The data on the knowledge of malnutrition among the caregivers of the children revealed that 33.3% of them disagreed that malnutrition was a result of a curse or spiritual illness while 27.3% of them strongly disagreed. But 24.2% of them neither agree nor disagree that malnutrition is a result of spiritual illness or curse. The majority (72.7%) of them agree that malnutrition can be managed with medical treatment only. This study revealed that the socio-demographic characteristics of the caregivers and their perception of malnutrition may not be the best predictors of good nutritional status. The study recommends a need to promote education among the women in the study area as a means of increasing their income through employment and also as a means of acquiring knowledge on how to utilise the resources at their disposal positively.

KEYWORDS

Malnutrition, Care-givers, Children Receiving Ready-to-Use Therapeutic Food (RUTF).

Introduction

Nutrition is the study of foods, nutrients and other substances they contain, and of their actions within the body (including ingestion, digestion, absorption, transport, metabolism, and excretion). It broadly comprises the social, economic, cultural, and psychological implications of food and eating (Sharon *et al.*, 2009). Nutrition is essential for well-being and good health, for the body to have a normal nutritional status, it must

receive all the nutrients in adequate amounts. However, when the nutrients provided in the diet are inadequate or not utilized properly, it results in a state of imbalance in the body which can develop into malnutrition (Liu and Sabatini, 2020).

Nutrition-related knowledge is a significant factor in promoting healthy eating practices, which will lead to the prevention of both under-nutrition and over-nutrition. Worsley, (2002) established that there is a direct relationship between nutrition knowledge and food

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habits among individuals of all age groups, as such influencing their dietary intake. "Nutrition education, either formally or informally, can build knowledge, or might be helpful for appropriate dietary intake" (Zubair, 2021).

Ready-to-use therapeutic food (RUTF) was invented in the late 1990's by research scientist Andre Briend and Nutriset, a private company making nutritional products for humanitarian relief. RUTF is an energy-dense mineral/vitamin-enriched food, specifically designed to treat severe acute malnutrition (Bender and Remancus, 2000). It is equivalent in formulation to Formula 100 (F100), which is recommended by the World Health Organisation (WHO) for the treatment of malnutrition (WHO, 1999). RUTF has many properties that make it extremely useful in treating malnutrition. It is usually oil-based and contains little available water (low water activity), which means that it is microbiologically safe and can be kept for several months in simple packaging. As it is eaten uncooked, it is ideal for delivering many micronutrients that might otherwise be broken down by heat.

Malnutrition is a major global public health problem and a contributing factor to mortality and morbidity. Its close association with perceptions has been observed in some studies carried out in Pakistan, Rwanda, and Ghana (UNICEF, 2013). More than 50% of under-five child mortality is due to malnutrition, causing the deaths of about 3.5 million children (Park *et al.*, 2012). According to the World Health Organization (WHO, 2010), 54% of childhood mortality is due to malnutrition (Manary *et al.*, 2013), whereas in Nigeria 41% of the children under five years of age have chronic malnutrition, 23% are underweight and 14% suffer from acute malnutrition. In the northern region, the prevalence is devastating with more than half of all children being stunted (Orie, 2017). North Western states in Nigeria had the highest proportions of malnourished children with more than 50% prevalence of stunting (NDHS, 2018). The prevalence of moderate wasting among children under five follows similar patterns in these states (NDHS, 2018).

There are several studies conducted to assess the impact of RUTF on the management of SAM (Ciliberto *et al.*, 2005; Kuusipalo *et al.*, 2006; Pérez-Expósito and Klein, 2009; Trehan *et al.*, 2010; Tadesse *et al.*, 2015; Ashraf *et al.*, 2017) but we were not able to locate any study carried out to assess the socio-demographic characteristics and knowledge of malnutrition among the caregivers of Children receiving RUTF in Bauchi local Area of Bauchi state.

Materials and Methods

Study Area

This study was conducted in Miri OTP Centre (Miri Primary Health Care Centre), Bauchi Local Government Area, Bauchi state. Bauchi State is in the North-east Geo-political zone and was created in 1976 and presently has twenty Local Government Areas, which covers about 49,259 Km². The state is located between latitudes 9°30' and 12°30' North of the equator, and between longitudes 8°45' and 11°0' East of the green which meridian. It shares boundaries with Yobe, Gombe, Taraba, Plateau, Kaduna, Kano and Jigawa states.



Figure 1: Map of Bauchi State, showing Bauchi LGA adopted from Google August 2024.

Sample Size Calculation

The sample size was determined by adopting the following statistical formula for minimum sample size calculation (Yamane, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where n = minimum sample size,

N = 20 (average number of children with severe acute malnutrition who are admitted into the OTP weekly)

e = 5% (the margin of error)

$$n = \frac{20}{1 + 20(0.05)^2}$$

$$n = 20/1.05$$

$$n = 19.048$$

Therefore, the estimated minimum sample size used was nineteen (19). However, the sample size for this study was raised to thirty-five (35). This is to make the sample size large (Thirty and above). Barton and Peat (2014) stated that "in general studies with small sizes say less than 30 participants can usually only provide imprecise and unreliable estimates".

Socio-demographic and Knowledge of Malnutrition Data Collection

Pre-tested semi-structured questionnaires were administered to the caregivers as their children were admitted to the OTP. This was to obtain demographic information which included ages, religion and educational status of the caregivers. Information on water and sanitation and their knowledge of malnutrition were documented using their response from the questionnaire.

Results

Socio-demographic Characteristics of Caregivers

The result of the objective is shown in Table 1 which reveals the age of caregivers of the study children was in the range of 20 - 50 years of which the majority 20 (61%) were within the range of 20-29 years and 32 (97%) of them were married. Most 17(52%) of the caregivers had no formal education. Eighty-eight percent of them are Muslim while 12% are Christian. Most (82%) reported that their monthly income was less than ten thousand naira. The occupational distribution of the caregivers showed that 42% are traders, 6% are farmers, 3% are artisans, 3% are civil servants and the rest (46%) have no occupation. For water and sanitation, 39.4% of them use borehole water for bathing, washing and drinking while 36.4% of them use it for cooking (Table 1)

Table 1: Socio-demographic Characteristics of Care-givers of Children Receiving Ready-to-use Therapeutic Food (RUTF) in Bauchi L.G.A

Characteristics	Frequency (N)	Percentage (%)
Age (Yr.)		
20-29	20	61
30-39	8	24
40-49	4	12
50-Above	1	3
Marital Status		
Single	1	3
Married	32	97
Education		
None	17	52
Primary	7	21
JSS	5	15
SSS/Vocational	2	6
Tertiary	2	6
Religion		
Muslim	29	88
Christian	4	12
Occupation		
Farming	2	6
Trading	14	42
Artisans	1	3
Civil servant	1	3
None	15	46
Monthly income in naira		
< 1000	10	30
1000-10000	17	52
10000-20000	3	9
20000-30000	1	3
30000-Above	2	6
Source of drinking water		
River/stream	2	6
Well	7	21

Bore hole	13	39
Pipe-borne	10	30

The data on the knowledge of malnutrition among the caregivers of the children revealed that 33.3% of them disagree that malnutrition was as results of curse or spiritual illness while 27.3% of the strongly disagree. But 24.2% of them neither agree nor disagree that malnutrition is as a results of spiritual illness or curse. Majority (72.7%) of them agree that malnutrition could be managed with medical treatment only. Details of the caregiver's knowledge of malnutrition is given on table 2.

Table 2: Knowledge of Malnutrition among Caregivers of Malnourished Children Receiving RUTF in Bauchi LGA

Knowledge on Malnutrition	Strongly Agree (%)	Agree (%)	Neither Agree/Disagree (%)	Disagree (%)	Strongly Disagree (%)
Due to Curse/spiritual illness	6.1	9.1	24.2	33.3	27.3
Cure with medical treatment only	27.3	45.4	15.2	3.0	9.1
Can be prevented	18.2	48.5	21.2	3.0	6.1
Occur in children born into large family	15.1	36.4	21.2	18.2	9.1
Due to caregivers poor understanding of a nutritious diet	36.4	33.3	18.2	12.1	0.0
Inability of mothers to afford a nutritious diet	30.3	45.4	15.2	9.1	0.0
Children not exclusively breastfed are malnourished	6.1	51.5	15.2	0.0	21.2
Due to Improper introduction of complementary foods	12.1	57.6	15.2	12.1	0.0
Improper weaning	24.2	60.1	12.1	3.0	0.0
Cause by Poor hygiene and sanitation practice	30.3	51.5	6.1	6.1	6.1

Due to the presence of diseases and infections	15.2	66.7	15.2	3.0	0.0
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Discussions

The findings of this study indicated that the majority of the caregivers were between the ages of 20-39 years and most of them were married. This is in agreement with the study conducted by Mensah (2015), which is also similar to the results reported by Amanuel *et al* (2013). About half of the caregivers had no education level, and this could be because most of them were housewives and rural dwellers with very limited access to basic urban infrastructures and amenities like schools. This is also in consistent with the results obtained by Mensah (2015). This does not agree with Amanuel *et al* (2013) found that 84.5% of the mothers had some form of formal education and only 15.5% had no form of formal education. The present study also revealed that 46% of the caregivers are unemployed. Unlike this study, Aminbo (2017) reported that 71% of the caregivers were employed and 29% were unemployed. This may be because the majority of the caregivers of the children.

Study findings also revealed that the majority of respondents disagreed that malnutrition was a result of spiritual illness/curse, and could be prevented. This is an indication of good knowledge of malnutrition among the caregivers. And it is similar to a study conducted by Akeredolu, Osisanya, Mosadolorun-Seriki, & Okorafor, (2014) in Lagos, Nigeria where the majority of the mothers (73.3%) scored above average. According to Imdad, Yakoub, & Bhutta, (2011), education has a positive effect on the nutrition knowledge and practices of mothers. Another study by Gichana (2013) also showed that the majority of mothers interviewed had adequate knowledge of nutrition.

Conclusion

This study revealed that the socio-demographic characteristics of the caregivers and their knowledge of nutrition may not be the best predictors of good nutritional status. There is a need to promote education among the women in the study area as a means of increasing their income through employment and also as a means of acquiring knowledge on how to use the resources at their disposal positively.

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