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RESEARCH ARTICLE

The Effectiveness of Nutrition Education for Care Takers at Al-Sabah Children Hospital in Patient Therapeutic Feeding Center, Juba South Sudan

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Abstract:

Background: A key part of treating and preventing malnutrition is the provision of effective nutrition education to the clients and caretakers so that they can self-manage their nutrition needs even after discharge from the hospital. For effective nutrition education, three factors are paramount; The successful transfer of knowledge and skills, client motivation to act on the acquired skills and knowledge and ensuring that the patient is able to understand and put to practice the educational messages given.

Methods: The study used cross sectional design with mixed method of data collection that involved 83 caretakers of admitted SAM children at Al-Sabah children hospital ITC, Sample size was determined using Cochran 1975, interviewer administered questionnaires and focus group discussion guide were the tools used in collecting data. Data set was generated using EPI info and analyzed using SPSS version 21, the analyzed descriptive data was triangulated with the qualitative data collected using FGD.

Results: The majority of the caretakers were female 78 (94%) of which 68 (81.9%) were mothers to the children that were admitted. Only 8 (9.6%) of the respondents were found to have attained effective nutrition education and majority of the respondents were found not to be recalling the information they were given during the education session.

Conclusion: As per the guidelines adapted by the ministry of health republic of South Sudan, the nutrition education sessions conducted was found not be effective as most of the clients could not even recall the information given.

Keywords: Nutrition education, Care takers, Hospital, South Sudan

Introduction

Malnutrition is a critical public health concern in South Sudan where an estimated 200,000 children aged below 5 years are at a risk of becoming malnourished. Severe acute malnutrition contributes greatly to illness and death among young children contributing up to half of their deaths (UNICEF, 2015).

In developing countries, 50.6 million children below the age of 5 years are malnourished. One out of seven South Sudanese children die before their fifth birthday, mainly from preventable diseases such as diarrhea and malaria (WHO, 2015). The burden of disease attributable to malnutrition is equally substantial with the malnutrition rate exceeding the World Health Organization (WHO) emergency threshold 15% (SUN, 2017). 31% of South Sudanese children below the age of 5 years are stunted, 23% are wasted and 28% are underweight but with wide variations across the country with some being at critical levels (SSHHS, 2010). South Sudan ranks the 15th highest Country with the highest mortality rates for under 5 years of children (UNICEF, 2012).

Studies have shown that, implementation of the evidenced based guidelines developed by WHO can reduce mortality rates among the under 5-year population to less than 5% (WHO, 2003).

A key part of treating and preventing malnutrition is the provision of effective nutrition education to the clients and caretakers so that they can self-manage their nutrition needs even after discharge from the hospital (Cook et al, 2006). For effective nutrition education, three factors are paramount; The successful transfer of knowledge and skills, client motivation to act on the acquired skills and knowledge and ensuring that the patient is able to understand and put to practice the educational messages given (Prochaska J, 2008). Good communication plays a role in effective nutrition education, improving patient outcome and adherence to treatment recommendations (Gordon H, 2010).

South Sudan is the world's newest nation, in the centre of Africa bordered by six countries. It is rich in oil, but following decades of civil war it is also one of the least developed regions on earth - only 15% of its citizens own a mobile phone and they're very few tarmac roads in an area bigger than Spain and Portugal combined. This makes the Nile River, which flows through regional centers, an important transport and trade route. Cattle are also central to life in South Sudan - a person's wealth is measured by the size of their herd. Agriculture is practiced on small scale and interclan fighting is very common among the cattle keeping tribes.

Method and materials

Study design; The short study followed a cross sectional design with mixed method of data collection.

Data sources; The data was obtained using interviewer administered questionnaire and focus group discussion with care takers of the SAM Children.

Sample size determination; the Sample size was obtained using the formula for population proportions below;

$\mathbf{n_o = Z^2pq/e^2}$ (Cochran, 1975).

Where;

$\mathbf{n_o}$= sample size

Z^2 = Z-score corresponding to 95% confidence level

e = desired level of precision taken at 5%

p = estimated proportion of an attribute that is present within a population in this case it was taken to be 50% because it was not known.

q = 1-p

Therefore;

$\mathbf{n_o = 1.96^2*0.5*(1-0.5)/ (0.05*0.05)}$

$\mathbf{= 3.8416*0.5*0.5/0.0025}$

$\mathbf{= 0.9604/0.0025 = 384.16}$ **approximately 384.**

Since the population to be sampled is a small population, the facility reports indicate average monthly caseload of 100 (data from Jan to June 2019). Therefore, the required sample size was adjusted using the formula;

$\mathbf{n = n_o/ (1+(n_o-1)/N)}$

Where;

n = Sample size

N = population size

n = 384/ (1+(384-1)/100

=384/1+(383)/100

= 383/1+3.83 = 383/4.83

=79.3 approximately 79

Assuming a non respondence rate of 5% (4), the final required sample size considered was 83.

Sampling; consecutive sampling techniques was used to obtain the sample starting with mothers/caretakers that stayed longer at the ITC.

Data analysis and presentation

Data sets was generated using EPI info and exported to SPSS version 21. Numerical variables are expressed in numbers while categorical variables are presented in frequency and percentages. qualitative data was organized in ATLAS Ti and content were analyzed into themes to aid triangulation. This is to validate the collected data and check for consistency of information.

Effective nutrition education was considered to have happened when caretakers are explained to the reasons for admission, principles of inpatient management, and specific needs for this particular group including the need to revisit the hospital when the condition deteriorates after discharge.

Results

Sociodemographic characteristics of the respondent's; The majority of the caretakers were female 78 (94%) of which 68 (81.9%) were mothers to the children that were admitted. There was a total of 26 tribes, out of the respondents, Dinka tribe was the most predominant 19(22.9%). The caretakers were mostly between the age of 18 to 49 years of age with a mean age of 26.4±7.6 years of age with a minimum of 16 years and a maximum of 54 years of age. A third, 29 (34%) of the respondents had never attended school. To those

that attended school, three quarters had attended at least primary education. More than a half of the respondents reported to being the first time of caring for a malnourished child as in-patient. Among the children admitted, 12(14.5%) were suffering from one of the chronic and wasting diseases that include; HIV/AIDS, TB or Kalazaar. The caretakers had an average of 2±1.5 children that are under five years they take care of in addition to the admitted child.

Provision of nutrition education following the standard guideline; Close to three quarters 62(74.7%) of the respondents were counselled on admission on the condition of the child and the majority understood the language that was used though 8(9.6%) did not understand the language used during couselling. The majority of the caretakers undestood why their children were admitted though almost a third of the caretakers were not explained the treatement that the child would be receiving. Close to a quarter of the respondents did not receive the routine daily nutriton and health education. To those that received health and nutrition education, 15(18.1%) did not understand the language used during the session. The majority 79(90.5%) did not participate in any food demonstrations while taking care of their children at the hospital. Individual counseling during follow up of the malnourished children was provided to less than a half 36(43.4) of the respondents.

Effective nutrition education; Effective nutrition and health education was measured according to this study as follows; If caretaker was explained to why they were admitted and the caretaker was briefed on the principles of management in the ITC and for chronic cases, the caretaker was counseled on the specific needs required during treatment and caretaker received daily education and as well the caretaker was engaged in a food demonstration then there was effective nutrition and health education for the caretaker.

The average number of days that the caretakers had stayed in the hospital was 7.9±13.4 days with a minimum of two days and a maximum of 120 days. In regards to effective health education as reflected in the figure below, only 8(9.6 %) 95% CI: 4.3-18.1) of the respondents were categorized to have received an effective nutrition education while taking care of the children in the ward.

Health education topics recalled by respondents; With regards to heath education topics received, the caretakers recalled receiving an average of 1.3±0.9 topics from the health education with a minimum of no topic recalled to a maximum of four topics as displayed in the chart above. The Topic most recalled was promotion of good sanitation and hygiene, however, the importance of good nutrition, managing conditions that impair digestion and optimal maternal, infant and young child feeding was less recalled.

Knowledge on infant and young child feeding practices; Assessment of caregiver's knowledge on three breastfeeding principles was conducted and this included; knowledge on Colostrum (the first breast milk), duration of exclusive breastfeeding and the timely introduction of solid and semi-solid foods to a baby. In this assessment Respondents that mentioned at least two or all of the concepts were regarded as knowledgeable on Infant and young child feeding principles as per the South Sudan maternal infant and young child nutrition guidelines.

The assessment revealed that an estimate of 50(60% (95% CI: 48.9-70.8) mentioned at least two or all of the IYCF principles correctly. In terms of duration of breastfeeding, 57(71% (95%CI: 60.1-80.5%) mentioned correctly that a woman should breastfeed her child exclusively for the first six months. With regards to the timely introduction of complimentary foods, only 3(3.6%) (95%CI: 0.8-10.2) of the respondents mentioned correctly that the child should receive liquid/solid foods immediately after six months. As detailed in the table above,

when women were asked about the first food or liquid a new born should receive, 67(80.7%) mentioned correctly about colostrum.

Discussion and conclusion

This study found that most of the caretakers recalled at least one of the health education topics taught however only 1% could recall up to 4 topics meaning the teaching method is not effective, Majority could not recall the IYCF topics taught and the nutrition education was found not to be effective among 90.4% of the respondents, this study result is similar to a study conducted by Aaron Kyle Schwartz (2014) in Lexington, Kentucky (United States) that found that nutrition education was not significantly associated with the knowledge retained by high school athletes.

Conclusion

Nutrition education provided at Al-Sabah children hospital in patient therapeutic feeding center was found not to be effective as the set guidelines by the ministry of health was not followed e.g. only 1% of the population could recall up to 4 of the health education topics thought, only 9.65 received effective nutrition education as defined by the CMAM guideline etc. This study generated a body of knowledge that reflects existence of guideline alone is not enough but strict adherence to what it stipulates and follow up are the monitoring mechanisms that will ensure its effectiveness therefore there is need to adhere to the guidelines and standard operating procedures to ensure effective nutrition education.

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Table 1: Socio demographic characteristics of the respondents

Variable (n=83)	Frequency (n)	%
Social Demographics		
Sex		
Female	78	94.0
Male	5	6.0
Relation of the caretaker to the child		
Mother	68	81.9
Father	5	6.0
Grandmother	4	4.8
Auntie	2	2.4
Sister	1	1.2
Missing	3	3.6
Tribes of the caretaker		
Dinka	19	22.9
Bari	16	19.3
Lokoya	9	10.8
Mundari	5	6.0
Others (22)	35	42.2
Age of the caretakers		
< 18 years	3	3.6
18-49 Years	73	88.0
> 49 Years	7	8.4
Attended School		
Yes	54	65.1
No	29	34.9
Level of Education (n=54)		
Primary	13	24.1
Secondary	41	75.9
First time caring for a malnourished child in a Ward		
Yes	47	56.6
No	36	43.4
Taking care of other Children		
Yes	75	90.4
No	8	9.6
Child suffering from Chronic morbidities (HIV/AIDS, TB, Kalazaar)		
Yes	12	14.5
No	67	80.7
Do not Know	4	4.8

Table 2: Provision of nutrition education following the standard guidelines

Variable (n=83)	Frequency (n)	%
Admission		
Counselling on admission	62	74.7
Yes	21	25.3
No		
Understood the language used during counselling		
Yes	70	84.3
No	8	9.6
Don't Know	5	6.0
Understood why the child was admitted		
Yes	67	81.7
No	12	14.6
Don't know	3	3.7
Missing	1	
Caretaker received explanation on how the admitted child will be treated		
Yes	56	67.5
No	26	31.3
Do not know	1	1.2
Follow up		
Caretaker received daily health Education		
Yes	65	78.3
No	17	20.5
Don't Know	1	1.2
Understood the language used for Health Education		
Yes	64	77.1
No	15	18.1
Don't Know	4	4.8
Caretaker participated food demonstration		
Yes	4	4.8
No	79	95.2
Caretaker was able to practise what was demonstrated		
Yes	4	4.8
No	1	1.2
Do not Know	78	94.0
Caretaker received individual counselling		
Yes	36	43.4
No	47	56.6
Child Improving		
Yes	72	86.7
No	6	7.2
Don't Know	5	6.0

Table 3: Knowledge on infant and young child feeding practices

Variable	n	%
In your opinion, what is the first food or liquid a new born baby should receive (n=83)		
Colostrum (the first breast milk)	67	80.7
Breast milk that comes after Colostrum (third day)	10	12.0
Milk (not breast milk) – infant formula	1	1.2
Plain Water	3	3.6
Water with sugar	1	1.2
Fruit Juice, Tea infusion, traditional medicine	0	0
Do not know	0	0
Others	1	1.2

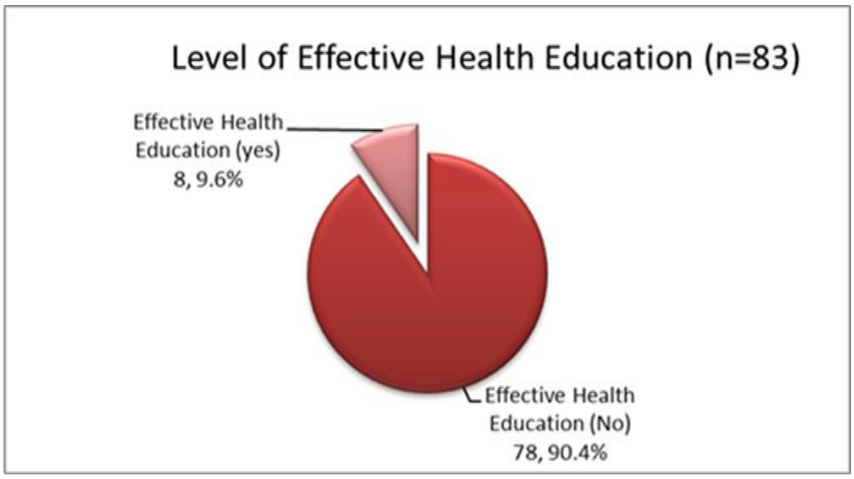

Figure 1: Level of effective nutrition

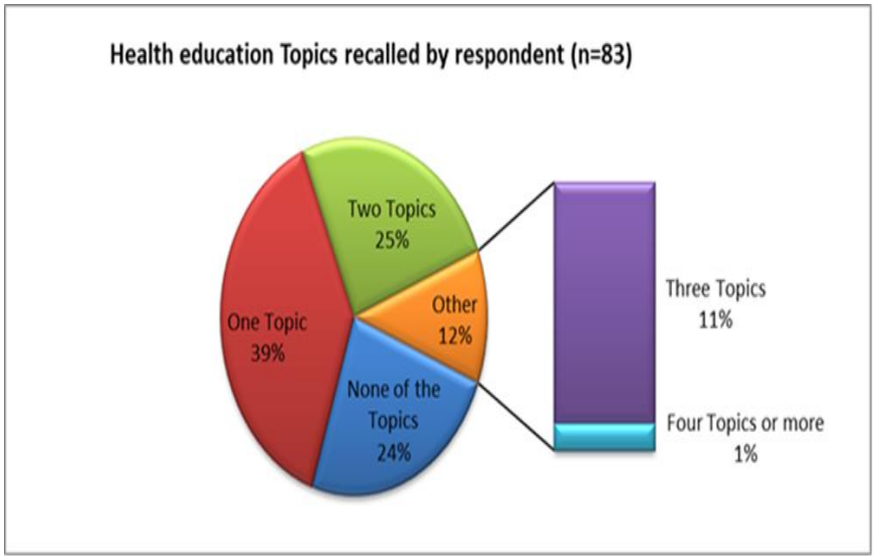

Figure 2: Number of health education topics recalled by the respondents

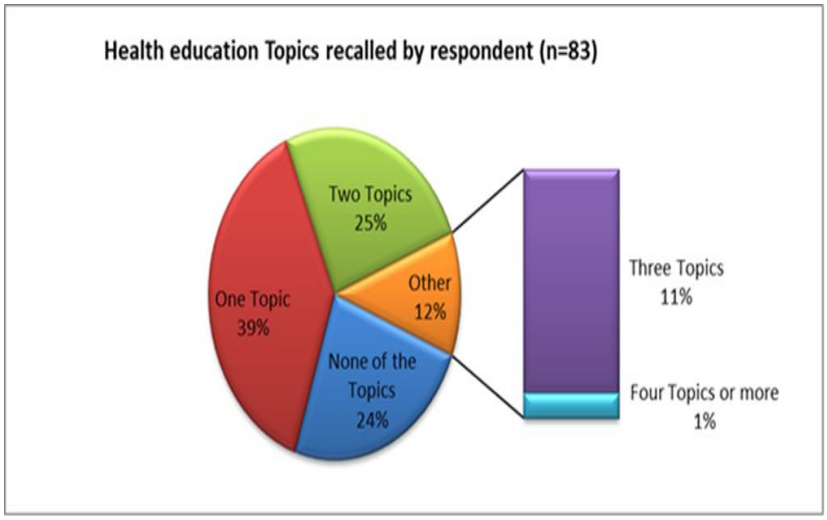

Figure 3: Proportion of respondents that recalled different health education topics

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