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Assessment of knowledge as a factor associated with undernutrition and its correlates among mothers of children below the age of five in two rural-urban areas of ndola Zambia.

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ABSTRACT

Background: Under- nutrition affects a lot of children in Zambia and contributes to the high rates of morbidity and mortality. Some of the common causes of this hunger in children generally include; poverty, lack agriculture investments, lack of knowledge and HIV/AIDS. The objective of this study was to establish the levels of knowledge among mothers/caregivers in these two areas on under nutrition in under-five children and its association with other known factors related to under-nutrition. **Method**: A cross sectional study was done in Chipulukusu and Masala, rural-urban areas of Ndola using a standardized questionnaire. A Chi-squared test was used to test for associations between knowledge and other risk factors, and a result of less than 5% was considered significant. **Results**: The study involved a total of 670 households of which 320 were from Chipulukusu and 350 from Masala. The study showed that the associations of knowledge with age, education, occupation, income, number of occupants and meals were not significant. **Conclusion**: There was average knowledge on under nutrition among women and there was no association between knowledge and social-demographic factors related to under- nutrition.

Key words: Under-nutrition, knowledge, under-five, Chipulukusu, Masala, children, Maternal.

Introduction

Under nutrition can be defined as the outcome of insufficient food intake and repeated infectious diseases. Parameters used to measure under nutrition include; being underweight for one's age, stunted growth, wasting and deficient in micronutrients. It is marked by deficiency in energy, essential proteins, fats, vitamins and minerals in a diet. Studies by WHO shows that 5.9 million children under the age of 5 died in 2015 of which 45% of the deaths were linked to malnutrition across the globe[1][2].World widely, Hunger and poverty are issues that continue to affect children today. These issues come about due to many factors affecting the world like war and conflicts which consistently disrupt farming and food production. Fighting also forces millions of people including children to flee their homes, leading to hunger emergencies as the displaced find themselves without the means to feed themselves. However globally there is evidence of improvement in children's nutrition status. Research shows that the percentage of underweight children is estimated to have declined from 25% in 1990 to 15% in 2012 while stunting has decreased globally from 40% to 20% over the same period [3][4].Furthermore, children in sub-Saharan Africa which includes Zambia are more than 14 times likely to die before the age of 5.Two thirds of these under-five deaths in the region are due to preventable causes and each year, west and central Africa loses one million under five children die from causes related to malnutrition. These chief causes of death are neonatal conditions and acute respiratory infections mainly pneumonia, malaria, diarrheal diseases, measles and HIV/AIDS, most of which are complicated by malnutrition. It is also known that food insecurity in Africa threatens the lives of vulnerable people specially displaced persons and people living with HIV/AIDS [2][3][5].Zambia is one of 22 African countries with the highest burden of under nutrition in children under the age of five. Thousands of children in Zambia suffer from one or more forms of malnutrition, including low birth weight, wasting, stunting, underweight, and multiple micronutrient deficiencies such as vitamin A,

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iron, zinc and iodine deficiencies [6]. Just recently, it was ranked as the 3rd most hungry country in the world by the Global Hunger Index 2015 which shows the huge burden despite the low percentage reductions in hunger levels since 2000 [7]. Globally and locally, many studies have been done to determine the prevalence rates of under nutrition in children aged five and below. However these studies often do not focus on assessing the levels of knowledge and its association with factors related to under nutrition in rural urban areas. Hence the general objective of the study is to establish the levels of knowledge among women and its association with factors related to under-nutrition.

Method

The study design was a cross-sectional study looking at knowledge and its association with the factors related to under nutrition of the mothers/ caregivers.

Study Sites

The study was conducted in two low and middle income rural-urban residential areas, Chipulukusu and Masala in Ndola respectively. Ndola is the provincial capital city of the Copperbelt province in Zambia and it is the second largest city in Zambia after Lusaka.

Sampling size and sampling methods

A statistic calc program in EPI INFO version 6.04 was used to estimate the sample size with the following parameters in place [total population size of Chipulukusu and Masala, 5896 and 6189 respectively Level of confidence [z] 1.96 at 95% confidence level,marginal error of 5% and baseline levels of indicators 50% as no estimates existed] of the 5896, 320 participants were selected from Chipulukusu and out of 6198, 350 participants were selected from Masala. All samples were systematically randomly selected using the formula 1/k were k is the sample size. The response rate was at 88.6% Chipulukusu and 96.7% for Masala.

Data collection tool, Data entry method and Analysis

Data was collected through the use of a standardized questionnaire at each household, the questions aimed at gathering information on social-demographic status and knowledge on causes, symptoms and prevention of under nutrition.Data was entered using Microsoft Excel and then exported to SPSS V16 were it was analyzed. Outcome variables were compared using the Chi-square test, a yielding *P*-value of less than 5% was considered statistically significant. Adjusted odds ratios and their 95% confidence intervals were recorded.

Results

A total of 670 respondents with their under-five aged children were involved in the study of which 320 (47.8%) were from Chipulukusu and 350 (52.2%) were from Masala. Table 1shows; that the majority 293 had secondary school levels of education and the minority 108(16.1%) had no form of education. Statistics showed that a total of 349 (52.1%) were unemployed and 25 (3.7%) had formal employment. Most of the women that is,306 (45.7%) women were from the age group between 25 and 35years and the minority 105 (15.7%) were aged 36years and above. Results also showed that 374 (56.0%) women reported to have a total number of occupants living per household to be between 8 and15, 498 (75.1%) women earned a monthly income of less than 500 kwacha and only 2 (0.3%) earned more than 2000 kwacha. A total of 201 (30.5%) women did not afford to feed their children with a balanced meal at least 3 times a day.

Table 2 shows that the association between knowledge and; age group, income, occupation, education, meals and number of occupants was not significant.

Histogram 3 showed that the highest score by the majority women was 6 followed by 7 out of a total of 9.

Table 1: Response levels

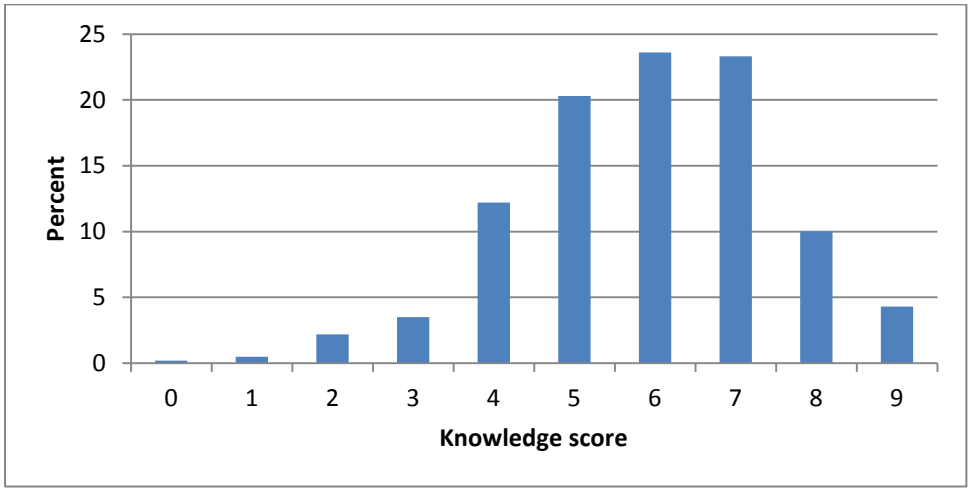
FACTOR		n (%)
AREA	CHIPULUKUSU	320 (47.8%)
	MASALA	350 (52.2%)
EDUCATION	NONE	108(16.1%)
	PRIMARY	255(38.1%)
	SECONDARY	293(43.7%)
	TERTIARY	13(1.9%)
OCCUPATION	UN-EMPLOYED	349(52.1%)

	SELF- EMPLOYED	293(43.7%)
	FORMAL EMPLOYMENT	25(3.7%)
AGE GROUP	15-24	259(38.7%)
	25-35	306 (45.7%)
	36 AND ABOVE	105 (15.7%)
NO.OCCUPANTS	3-7	294 (44%)
	8-15	374 (56.0%)
INCOME	<K500	498(75.1%)
	500-200	163 (24.6%)
	>2000	2 (0.3%)
MEALS	BALANCED	459(69.5%)
	NOT BALANCED	201 (30.5%)

Table 2: Association of knowledge with risk factors

Factors		**knowledge**		**p- value**
		Without	With	
Age group	>35	14 (15.1%)	85 (15.3%)	0.538
	25-35	47(50.5%)	248 (44.7%)	
	15-24	32 (34.4%)	222 (40.0%)	
Income	>2000	0 (0 %)	2 (0.4%)	0.619
	500-2000	20 (21.5%)	140 (25.2%)	
	<k500	73 (78.5%)	413 (74.4%)	
Occupation	Unemployed	47 (50.5%)	291 (52.4%)	0.912
	Self	42 (45.2%)	244 (44.0%)	
	Formal	4 (4.3%)	20 (3.6%)	
Education	Tertiary	0 (0 %)	13 (2.3%)	0.443
	Secondary	39 (41.9%)	247 (44.6%)	
	Primary	39 (41.9%)	211 (38.1%)	
	None	15 (16.1%)	83 (15.0%)	
Meals	Not balanced	65 (69.9%)	384(69.2%)	0.892
	Balanced	28(30.1%)	171 (30.8%)	
Number of occupants	8-15	51 (54.8%)	315(56.8%)	0.730
	1-7	42 (45.2%)	240 (43.2%)	

Histogram 3: Knowledge Score



Discussion

In this study, results showed that most women had knowledge above average on Undernutrition, with the majority scoring 6 out of 9. This knowledge was on risk factors for Undernutrition, causes, symptoms, and complications. Findings here differed from a study that was done at Vinayaka Mission Hospital in India which showed the highest 46% of women scoring between 30%-60% [9]. Variations in these findings could be due to differences in social-economic factors, cultural beliefs and differences in exposure and experiences. Results from this research showed that age, education level, type of employment, income, number of occupants per household and meals did not have significant association with the knowledge that they had on Undernutrition. However a research done in two districts of Zambia and another in South Africa, data showed that children born from mothers with primary education were more likely to be stunted than children born from mothers with secondary levels of education [10][11]. Meaning that the higher the level of education the less likely for the child to get malnourished. However, their results differed from another study done in Zambia and in Somali region of Ethiopia; they established that a larger population of mothers would have similar child feeding practices because maternal lack of education affects child feeding practices[12][13]. In the present study, women still enhanced their knowledge through other sources like attending under-five clinics hence the association of knowledge and education was not significant. Statistical findings in the current study were that most women; had a monthly household income of less than 500 kwacha, were either unemployed or self-employed and had a total number of household occupants of between 8 and 15 children and dependents inclusive. In a related study done in south Ethiopia, it identified that children born to a mother who gave birth to more than 4 children were more likely to be under-weight when compared to a child born from a mother who gave birth to less than 4 children [14]. These findings were also similar to another study done in Ethiopia and in Bangladesh. The reason could be because families experienced more economic strain for food consumption hence likely to suffer poor nutrition status [15][16]. Despite the lack of association between the knowledge and; poor financial income, large number of people in each household and lack of employment, low nutritional status may still occur. In the same line, poor families cannot fulfill the nutritional status of children despite the knowledge, families with more children or more people at home generally devote less time to take care of their children. In another study done in Addis Ababa, Ethiopia, results showed that children belonging to households with 6-8 member were more undernourished that those belonging to households with less[17].The current study showed that there was no significant association between the knowledge and the meals fed to children. In line with a study done in Addis Ababa, Undernutrition was found to be more common in children who had a meal frequency of at most 3 per day compared to those who had more than 3 per day [17].

Limitations

Recall bias and underestimations in respondents' age.

Conclusion

It can be concluded that women had average knowledge on under nutrition and that there was no significant association between factors associated with Under nutrition and knowledge. In order to help reduce Under nutrition, it would be important to do further research on factors other than knowledge.

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