



NUTRITIONAL KNOWLEDGE AND PRACTICE OF PRE-SCHOOL FEEDING: A COMPARATIVE STUDY AMONG MOTHERS IN SLUM AND URBAN AREAS OF CALABAR, NIGERIA

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ABSTRACT

In many developing countries, malnutrition has remained one of the leading causes of childhood morbidity and mortality. This is particularly important for vulnerable groups, including preschool toddlers who require adequate nutrition for physical and mental stability to face the new challenge of initiation into academic life. This study was aimed at assessing and comparing knowledge and practice of preschool feeding among mothers in urban and slum areas in Calabar, Nigeria using cross-sectional study design with researcher-administered structured questionnaire. One hundred and twenty (120) subjects were surveyed, with mean maternal age of 26.5 ± 3.4 years. Subjects in slum compared with urban areas had lower levels of education (primary level: 33.3% vs. 15.0%) ($p < 0.05$). Thirty two (32) subjects (27.1%) had inadequate nutritional knowledge of preschool feeding. Poor knowledge of body building foods was significantly commoner among slum compared with urban subjects (43.1% vs. 18.3%, $p = 0.00$). Also, poor knowledge of adequacy of diet was significantly commoner among slum compared with urban subjects (68.9% vs. 50.0%, $p = 0.04$). Bread and tea (51, 42.5%), Eba and soup (37, 30.8%) and rice (27, 22.5%), were the most commonly consumed breakfast, lunch and dinner, respectively. Nutritional health education and further research including the use of qualitative methods for better understanding of the reasons for dietary pattern is recommended.

INTRODUCTION

Malnutrition especially undernutrition is still a severe public health problem in sub-Saharan Africa (Stephenson et al., 2000). According to United Nations Children's Fund (UNICEF), World Health Organization (WHO) and World Bank report of 2015, out of 667 million children under age 5 worldwide, 159 million are stunted, 50 million are wasted and 41 million are overweight with a greater percentage in Asia and Africa (Global nutrition report, 2016). Millions of children under 5 years of age in low and middle-income countries are failing to reach their potential in cognitive, language, and social emotional development, which has implications for their educational attainment and adult functioning (Gratham-Mcgregor et al., 2014). Poor nutrition during childhood is one important factor impeding the physical and mental development of children, which ultimately propagates the vicious cycle of intergenerational malnutrition (Olatidoye et al., 2011). The issue of child malnutrition is critical because its effects are not limited to the boundary of childhood but rather persist into adulthood. It silently destroys the future productivity of nations (Jesmin et al., 2011).

In developing countries, it is estimated that 29% of children aged less than five years (under-five children) are stunted [< -2 standard deviation (SD) height-for-age] or chronically undernourished (Jesmin et al., 2011). According to the 2008 report on the National nutrition and health survey (NNHS) of Nigeria, the global acute malnutrition (GAM) prevalence among children 6-59 months of age was 7.0 percent, prevalence of underweight among children age 0-59 months was 19.9%. The prevalence of stunting was 32.0% and overweight prevalence was 1.2 percent. Overall only 64% of children in Nigeria are growing healthily without being stunted or wasted (NNHS, 2018). On infant and young child feeding practices nearly 60.0% of the children assessed were not fed to the recommended minimum meal frequency for their age and 65.0% do not meet the minimum dietary diversity (NNHS, 2018). Childhood and adolescence are the formative stage of poor eating habits and this increases the risk of future chronic diseases (Ozdogan et al., 2012). The mother is the primary care giver especially during the preschool (first 6 years) of life. Maternal nutritional knowledge and level of education have been shown to be critical factors determining a child's growth and development (Ozdogan

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et al., 2012; Abate et al., 1999; Ajao et al., 2010). Studies have reported that mother's nutritional knowledge has positive effects on child nutrition (Ozdogan et al., 2012; Variyam et al., 1999; Appoh et al., 2005; Sule et al., 2009; Verecken et al., 2010). It has been argued that maternal knowledge on pre-school feeding differs, thus childhood malnutrition persists. Also, maternal knowledge and practice of pre-school feeding in slum and urban areas is said to have been influenced by maternal work, maternal time, income, education and occupational status (Olatidoye et al., 2011).

The source of maternal nutritional education can influence feeding practices in addition to maternal education and income. This study therefore set out to assess the knowledge of preschool feeding practices of mothers in slum and urban areas in Calabar, Niger-Delta region of Cross River State.

MATERIAL AND METHODS

This cross-sectional study was carried out among randomly selected mothers of pre-school toddlers in both slum and urban areas of Calabar Municipality. Calabar is the capital of Cross River State, one of the 36 states in Nigeria. Nutritional knowledge and pattern of preschool feeding was assessed using researcher-administered structured pretested questionnaire and

compared between study groups using inferential statistics. Data analysis was done using SPSS version 16, with p-value set at <0.05. Ethical approval was obtained from the Research and Ethics unit of Cross River State Ministry of Health. Written consent was obtained from the mothers.

RESULT

One hundred and twenty (120) subjects were surveyed, with mean maternal age of 26.5 ± 3.4 years. Subjects in slum compared with urban areas, were younger (mean age: 24.8 vs. 28.3 years), and had lower levels of education (primary level: 33.3% vs. 15.0%) ($p < 0.05$). Thirty two (32) subjects (27.1%) had inadequate nutritional knowledge of preschool feeding, with no significant difference in proportion comparing slum and urban subjects (34.5% vs. 20.0%, $p = 0.08$). However, poor knowledge of body building foods was significantly commoner among slum compared with urban subjects (43.1% vs. 18.3%, $p = 0.00$). Also, poor knowledge of adequacy of diet was significantly commoner among slum compared with urban subjects (68.9% vs. 50.0%, $p = 0.04$). Bread and tea (51, 42.5%), Eba and soup (37, 30.8%) and rice (27, 22.5%), were the most commonly consumed breakfast, lunch and dinner, respectively. There was no significant difference in diet pattern comparing slum and urban subjects ($p > 0.05$).

Table 1: Sociodemographic characteristics of respondents (N=120)				
Variable	Slum n (%)	Urban n (%)	Total n (%)	Chi-square (p-value)
Maternal age group				
< 35 years	55 (91.7)	47 (78.3)	102 (100)	4.2 (0.04)
> 35 years	5 (8.3)	13 (21.7)	18 (15.0)	
Total	60 (100)	60 (100)	120 (100)	
Marital status				
Single	16 (26.7)	7 (11.7)	23 (19.2)	Fishers
Married	43 (71.7)	50 (83.3)	93 (77.5)	Exact
Widowed	1 (1.7)	3 (5.0)	4 (3.3)	(0.08)
Total	60 (100)	60 (100)	120 (100)	
Educational level				
None	3 (5.0)	4 (6.6)	7 (5.8)	Fishers
Primary	20 (33.3)	9 (15.0)	29 (24.2)	Exact
Secondary	26 (43.3)	21 (35.0)	47 (39.2)	(0.01)
Tertiary	11 (18.3)	26 (43.3)	37 (30.8)	
Total	60 (100)	60 (100)	120 (100)	
Occupation				
Business / trader	21 (37.5)	20 (41.7)	41 (39.4)	Fishers
Artisan	11 (19.6)	7 (14.6)	18 (17.3)	Exact
Housewife / unemployed	10 (17.9)	4 (8.3)	14 (13.5)	(0.57)
Civil/public servant	8 (14.3)	9 (18.8)	17 (16.3)	
Clergy	3 (5.4)	4 (8.3)	7 (6.7)	
Student	2 (3.6)	4 (8.3)	6 (5.8)	
Farmer	1 (1.8)	0 (0.0)	1 (1.8)	
Total	56 (100)	48 (100)	104 (100)	
Number of children				
< 4	50 (83.3)	56 (93.3)	106 (88.3)	Fishers
> 4	10 (16.7)	4 (6.6)	14 (11.7)	Exact
Total	60 (100)	60 (100)	120 (100)	(0.09)

Variable	Slum n (%)	Urban n (%)	Total n (%)	Chi-square (p-value)
Prior exposure to nutritional counseling				
Yes	37 (62.7)	47 (78.3)	84 (70.6)	3.5 (0.06)
No	22 (37.3)	13 (21.7)	35 (29.4)	
Total	59 (100)	60 (100)	119 (100)	
Source of information				
Health facility	18 (48.6)	34 (73.9)	52 (62.7)	Fishers
Media	8 (21.6)	9 (19.6)	17 (20.5)	Exact
Friend/relative	10 (27.0)	3 (6.5)	13 (15.6)	(0.02)
Total	37 (100)	46 (100)	83 (100)	
Correct knowledge of body building foods				
Yes	33 (56.9)	49 (81.7)	82 (69.5)	8.5 (0.00)
No	25 (43.1)	11 (18.3)	36 (30.5)	
Total	58 (100)	60 (100)	118 (100)	
Correct knowledge of adequate diet				
Yes	18 (31.0)	30 (60.0)	48 (40.7)	4.4 (0.04)
No	40 (68.9)	30 (50.0)	70 (59.3)	
Total	58 (100)	60 (100)	118 (100)	
Correct knowledge of proper feeding pattern				
Yes	20 (33.9)	18 (30.5)	38 (32.2)	0.16 (0.69)
No	39 (66.1)	41 (69.5)	80 (67.8)	
Total	59 (100)	59 (100)	118 (100)	
Knowledge score grade				
Excellent (>70%)	27 (46.5)	36 (60.0)	63 (53.4)	Fishers
Good (50-69%)	11 (19.0)	12 (20.0)	23 (19.5)	Exact
Fair (40-49%)	8 (13.8)	4 (6.7)	12 (10.2)	(0.33)
Poor (0-39%)	12 (20.7)	8 (13.3)	20 (16.9)	
Total	58 (100)	60 (100)	118 (100)	
Knowledge grade category				
Adequate knowledge	38 (65.5)	48 (80.0)	86 (72.9)	3.1 (0.08)
Inadequate knowledge	20 (34.5)	12 (20.0)	32 (27.1)	
Total	58 (100)	60 (100)	118 (100)	

Variable	Slum n (%)	Urban n (%)	Total n (%)	p-value
Bread & Tea	26 (43.3)	25 (41.7)	51 (42.5)	Fishers
Beans	7 (11.7)	6 (10.0)	13 (10.8)	Exact
Rice	4 (6.7)	6 (10.0)	10 (8.3)	(0.99)
Yam	4 (6.7)	3 (5.0)	7 (5.8)	
Eba & Soup	3 (5.0)	2 (3.3)	5 (4.2)	
Plantain	6 (10.0)	6 (10.0)	12 (10.0)	
Rice & Beans	5 (8.3)	6 (10.0)	11 (9.2)	
Yam & Beans	5 (8.3)	6 (10.0)	11 (9.2)	
Total	60 (100)	60 (100)	120 (100)	

Variable	Slum (%)	n	Urban (%)	n	Total (%)	n	p- value
Bread & Tea	0 (0.0)		0 (0.0)		0 (0.0)		Fishers
Beans	10 (16.7)		8 (13.3)		18 (15.0)		Exact
Rice	0 (0.0)		6 (10.0)		6 (5.0)		(0.36)
Yam	16 (26.7)		14 (23.3)		30 (25.0)		
Eba & Soup	17 (28.3)		20 (33.3)		37 (30.8)		
Plantain	6 (10.0)		5 (8.3)		11 (9.2)		
Rice & Beans	7 (11.7)		4 (6.7)		11 (9.2)		
Yam & Beans	4 (6.7)		3 (5.0)		7 (5.8)		
Total	60 (100)		60 (100)		120 (100)		

Variable	Slum n (%)	Urban (%)	n	Total (%)	n	p- value
Bread & Tea	5 (8.3)	3 (5.0)		8 (6.7)		Fishers
Beans	8 (13.3)	7 (11.7)		15 (12.5)		Exact
Rice	9 (15.0)	18 (30.0)		27 (22.5)		(0.61)
Yam	8 (13.3)	10 (16.7)		18 (15.0)		
Eba & Soup	13 (21.7)	8 (13.3)		21 (17.5)		
Plantain	6 (10.0)	5 (8.3)		11 (9.2)		
Rice & Beans	4 (6.7)	4 (6.7)		8 (6.7)		
Yam & Beans	7 (11.7)	5 (8.3)		12 (10.0)		
Total	60 (100)	60 (100)		120 (100)		

DISCUSSION

This study aimed at assessing nutritional knowledge and practice of pre-school feeding among slum and urban mothers in Calabar municipality. The level of education in the slum areas was lower than that in the urban areas with 33.3% of slum mothers having primary education compared to 15% of urban mothers. These findings were consistent with findings of Sujauddoula et al, 2018 and Ahsan et al, 2017 that mothers in slums are less likely to have higher levels of education. Also, several studies have positively correlated level of mother's education and knowledge, attitude and practice of child nutrition (Dhone et al., 2012, Ndukwu et al., 2013). A study in Ile-Ife, Nigeria noted that maternal education has been consistently shown to be critically important for child health, nutrition, and survival. It also noted that mothers in slum areas are more likely to be less educated. Although the precise mechanism by which maternal education affects child outcomes is not fully understood, evidence from various countries indicates that knowledge and practices are key pathways. Educated women are likely to be more aware of pre-school feeding, nutrition, hygiene and health care (Ajao, 2010). Thirty two (32) subjects (27.1%) had inadequate nutritional knowledge of preschool feeding, with no significant difference in proportion comparing slum and urban subjects (34.5% vs. 20.0%, $p=0.08$). Sangra et al reported similar finding of 23% of mothers having inadequate nutritional knowledge (Sangra et al., 2019). This correlates with higher health numeracy and nutritional knowledge among more educated non-slum dwellers (Ndukwu et al., 2013). However, Kabir et al, in their study in slum areas of Bangladesh reported adequate nutritional knowledge among slum mothers,

although this finding was reported to be due to a community based intervention (Kabir et al., 2017)

The present study found that poor knowledge of body building foods was significantly commoner among slum compared with urban subjects (43.1% vs. 18.3%, $p=0.00$). Also, poor knowledge of adequacy of diet was significantly commoner among slum compared with urban subjects (68.9% vs. 50.0%, $p=0.04$). This finding is consistent with report by Reiher et al that mothers were not knowledgeable of what a balanced diet is to be given to their child (Reiher et al., 2017). Similar study in the environment revealed low maternal nutritional knowledge (Jemide et al, 2016). Likewise, Palwala et al (2009) in their study of nutritional quality of diets of children in urban slums in India attributed nutritional inadequacy of children to inappropriate knowledge among mothers and care givers. Their intervention of intensive nutritional education revealed favorable behavioural change among mothers that improved the dietary quality and nutrient intakes of young children in urban slums.

This study revealed that there is a need to increase the nutritional knowledge of both slum and urban mothers especially mothers in the slum. This is because the more nutritional knowledge a mother has, the better the dietary intake of the children (Yabanci et al., 2014). A study on the associations between parenting styles and nutrition knowledge concluded that interventions targeting a range of positive and supportive parenting practices in conjunction with nutrition knowledge education for parents will help in pre-school feeding (Peters et al., 2012).

Targeting the source of nutritional information is very important. This study found that mothers in both slum

and urban areas received most of their nutritional information from health facilities (62.7%), with slum versus urban spread of 48.6% and 73.9% respectively. This was followed by the media 21.6% and 19.6% for slum and urban mothers respectively with $p=0.02$. This means that interventions of improving nutritional knowledge of mothers should be targeted at health facilities and the media in addition to other educational interventions like schools and market places.

Sometimes mothers do not know the importance of variety and balance in the diet and the right amount and types of foods needed by children to meet these dietary needs. Without adequate nutritional knowledge, malnutrition and poor nutritional status may occur in households with sufficient income, food and health services. This is not to say that mothers of malnourished children are necessarily ignorant or that all illiterate mothers whether their children are healthy or not, are ignorant, but their knowledge level on child health and nutrition can have a major toll on the children's general health (Jemide et al., 2016).

In conclusion, there is an urgent need to improve nutritional knowledge of mothers in both slum and urban areas because of the benefits to the child and family. Government and Non Governmental Organisations (NGO) interventions should among other methods of health education intensify nutritional education at health facilities where mothers visit for antenatal care and immunizations and the electronic and news media with wider reach.

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