Nutrition Knowledge, Complementary Feeding Practices and use of Food Labels amongst Young Mothers in Owerri Metropolis

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ABSTRACT

Background: *Maternal nutrition knowledge is important for the selection of appropriate foods that will meet the nutritional demands of infants.*

Objective: *To evaluate the nutrition knowledge, complementary feeding practices and use of food label among young mothers in Owerri Metropolis.*

Methods: *It was a cross sectional survey comprising of 300 mothers between 18-30 years. Respondents for the study were randomly drawn from mothers attending maternal and child health clinic in five hospitals and five maternity clinics as well as five private crèche and five public crèche in Owerri metropolis, Imo state. A well-structured and validated questionnaire was administered to collect information on socio economic data, nutritional knowledge, complementary feeding practices and use of food label. Data was analyzed using descriptive statistics and Pearson's bivariate correlations with SPSS version 21.0.*

Results: *Approximately 36.3% of the respondents had Masters degree, 58.0% were civil servants while 66.7% had good nutrition knowledge. Approximately 50.7% of the respondents introduced complementary foods at 3 months, pap was the major complementary food given by 65.3% of the respondents, 72% stopped breastfeeding at 9-12 months while 54.3% feed their infants up to 7 times daily. Most (95.3%) of the respondents read food labels, 60.0% regard food label to be very important while 56.3% seek for best before date.*

Conclusion: *This study revealed that more than half of the mothers in Owerri metropolis have good nutrition knowledge, however the complementary feeding practices and utilization of food labels are still poor.*

Keywords: Nutrition, Food Labels, Complementary feeding

INTRODUCTION

Appropriate infant and young child feeding practices such as exclusive breastfeeding for the first six months, introduction of complementary foods at six months and the number of feeding per day [1] are essential for maintaining optimal nutritional and health status as well as the survival of children under five years [2]. Suboptimal infant feeding is one of the leading causes of malnutrition and death of children under five years of age [3]. In Nigeria, the rate of under-five mortality is still unacceptably high [4]. The 2018 Nigeria Demographic and Health Survey (NDHS) shows that approximately 37% of children under five years in Nigeria are stunted, 7% are wasted while 22% are underweight. In addition, about 68% of children under five years have anaemia. Introducing adequate complementary foods that will meet the nutrition and health demands of the infants is vital in the prevention and management of childhood malnutrition in Nigeria [5].

Food labels usually provide information on the nutrient content of a packaged food [6]. Regular use of food labels have been attributed to healthier dietary choices such as low fat, low sugar and low salt options [7,8] as well as choices of foods fortified with important micronutrients such as vitamin A, iron and calcium [9,10]. There is evidence that commercial complementary foods are more convenient for mothers and care givers to incorporate into their infant's diet and these products are becoming increasingly available in Nigerian markets [11,12]. Some developed countries have requirements for the labelling of infants foods and these requirements often reflect the recommended dietary guidelines for children [13,14]. Knowledge of food labels is therefore important for the selection of appropriate foods that will meet the nutritional demands of infants and young children from the vast range of food products in the market.

Poor knowledge of appropriate infant feeding practices is an important determinant of childhood malnutrition than poverty or scarcity of food [11,13]. Good maternal nutritional knowledge is considered to play a major role in the selection of adequate and nutritionally balanced diets for infants [5]. In addition, the level of nutrition knowledge is associated with the use of nutrition label as nutrition knowledge has been observed to be greater in individuals who use food labels in comparison to those who do not use food labels [15].

Previous studies have extensively investigated infant feeding practices and factors that may influence infant feeding practices in Nigeria [5]. [11] evaluated mother's nutritional knowledge, infant feeding practices and nutritional status of children (0-24 months) in Lagos, Nigeria and observed that 43.3% of the mothers introduced complementary food to their infant at the age of 4-6 months. In another study, [16] reported that more than half of the mothers introduced food or drinks before six months and 57.1% discontinued breastfeeding before 12 months. They also noted that most of the mothers fed their infants responsively and in good hygienic conditions. Furthermore, [17] observed that 48.3% of mothers initiated complementary food within 5-6months while about 70% of the mothers introduced pap as the major complementary food in a study to investigate the infant feeding practices of mothers in Enugu. However, there is limited data on the mother's nutrition knowledge, complementary feeding practices and food label reading behavior of young mothers in Owerri. This study therefore examined the nutrition knowledge, complementary feeding and use of food labels amongst young mothers in Owerri Metropolis, Imo state, Nigeria.

MATERIALS AND METHODS

Study area

The study was carried out in five hospitals, five maternity clinics, five public crèche and five private crèche in Owerri Metropolis, Imo state, Nigeria. Owerri is made up of three local government which includes Owerri Municipal, Owerri-North and Owerri-West. Imo state is estimated to have a population of approximately 1,401,873 and covers an area of about 100 square kilometers. Owerri is bounded by the Otammiri River to the east and the Nworie River to the south (18)

Study Design

This study adopted a cross sectional study design.

Population of Study

This study involved 300 young mothers between 18-30 years in Owerri Metropolis.

Sample Selection

A multistage sampling technique was employed in the selection of 300 respondents in this study. The first stage of the sampling comprised of the selection of two local government areas out of the three local government areas in Owerri Metropolis by balloting. The second stage involved the selection of three wards from each selected local government area by balloting. The third stage consisted of the selection of five hospitals, five maternity clinics, five public crèche and five private crèche from the selected wards by balloting. The final stage involved the selection of fifteen respondents from each selected study centre. This was carried out by randomly selecting one out of every fifth young mother that arrives at the study centers per day. The criteria for recruitment of study participants into the study was restricted to mothers between 18-30 years with a child less than two year old.

Informed Consent

Respondents who participated in the study signed the informed consent form before they were recruited.

Data collection and analysis

A well-structured, validated and pretested questionnaire was designed to elicit information

on the respondents' socio-economic status, nutrition knowledge, complementary feeding practices and food label reading. Nutrition knowledge of the young mothers were assessed on various aspects of nutrition such as knowledge of foods and food groups, balanced diet, hygiene and infant feeding. Assessment of complementary feeding practices of the young mothers included information on time of introduction of complementary food, the complementary foods introduced, the most readily available complementary food, frequency of feeding the infant and reasons for introducing complementary foods while information on importance of food labels, knowledge of food labels, information sought on food labels and motivation for reading food labels were used to assess food label reading behavior of the young mothers.

A total of 15 multiple choice questions were used to assess nutrition knowledge. Each correctly answered question was assigned a score of one and zero score for each wrong answer. The highest attainable score was 15 and the least was zero. The scores were classified into three. Those who scored 0-5 were graded as having poor knowledge, 6-10 moderate knowledge while those who scored from 11-15 were graded as having good nutrition knowledge.

Statistical analysis

Data obtained was analyzed using Statistical Products for Service Solutions (SPSS) version 21.0. Data was analyzed using descriptive statistics and Pearson's bivariate correlations.

RESULTS

Table 1 shows the socio economic characteristics and the level of nutrition knowledge of the respondents. All the respondents were married, 36.3% had Masters degree, almost all the respondents (94.7%) were Christians, 58.0% were civil servants and 53% earned between ₦

Table 1: Socio economic characteristics and level of nutrition knowledge of the respondents

Variable	Frequency (n)	Percentage (%)
Marital status		
Married	300	100
Highest education attained		
Primary	12	4.0
Secondary	65	21.7
First degree	105	35.0
Masters degree	109	36.3
Doctorate degree	9	3.0
Religion		
Christian	284	94.7
Others	16	5.3
Occupation		
Student	126	42.0
Civil Servant	174	58.0
Monthly Income		
≤ 20000	52	17.3
20000-50000	160	53.3
50000-100000	88	29.3
Nutrition knowledge		
Poor	200	4.0
Moderate	88	29.3
Good	12	66.0
Total	**300**	100

Table 2 shows the complementary feeding practices of the respondents. Approximately 50.7% of the respondents introduced complementary foods to their infants at 3 months. Pap (cereal gruel) was the major complementary food given by 65.3% of the respondents while most (81.0%) of the respondents had pap as the most readily available infant food. Seventy two percent of the respondents stopped breastfeeding their infants at between 9-12 months while 54% feed their infants up to 7 times daily.

Table 3 shows the food label reading of the respondents. Most (95.3%) of the respondents read the food label on packaged foods, 60.0% regard food label to be very important, 60% are well informed on the knowledge of food label while majority (93.7%) of the subjects have no difficulty in reading food label. Up to 47.7% of the subject source their nutrition information from newspapers. More than half of the subjects (56.3%) usually seek for best before date on food labels, 12.0% are motivated to read food labels due to health reasons while 8.7% of the subjects will purchase food without reading food labels when in a haste.

The relationship between nutrition knowledge, highest education attained and selected complementary feeding parameter is shown in table 4. A significant ($p<0.05$) positive correlation was observed between nutrition knowledge and highest educational qualification attained and nutrition knowledge also had a significant ($p<0.01$) positive correlation with frequency of feeding infants. Highest education qualification attained also had a significant ($p<0.05$) positive correlation with frequency of infant feeding.

Table 2: Complementary Feeding Practices of the Subjects

Variables	Frequency	Percentage
Time of introduction of Complementary food		
3 months	152	50.7
4 months	17	5.7
5 months	26	8.7
6 months	105	34.9
Infant food introduced		
Infant formula	48	16.0
Pap	196	65.3
Custard	39	13.0
Infant cereals	17	5.7
Most readily available infant food		
Infant formula	29	9.7
Pap	243	81.0
Custard	23	7.7
Infant cereals	5	1.6
Cessation of breastfeeding		
<6 months	1	0.3
6-9 months	20	6.7
9-12 months	216	72
>12 months	63	21.0
Frequency of feeding infants		
≤4 times daily	6	2.0
5-6 times daily	132	44.0
≥7 times daily	162	54.0
Total	**300**	**100**

Table 3: Use of Food Label among the Respondents

Variable	Frequency (N)	Percentage (%)
Food label reading		
No	14	4.7
Yes	286	95.3
Knowledge of food label		
Well informed	180	60.0
Moderately informed	120	40.0
Total	**300**	**100**
Difficulty in reading food label		
No	286	93.7
Yes	19	6.3
Source of nutrition information		
Doctor	20	6.7
Nutritionist	80	26.7
Newspaper	142	47.3
Magazine	58	19.3
Information sought on food label		
Best before date	169	85.3
Best before & nutrient content	44	14.7
Motivation for reading food label		
Health reasons	36	12.0
Content of the food	17	5.7
Expiry date	247	82.3
Conditions of purchasing food without reading the food label		
No response	253	84.3
When in a haste	26	8.7
When I forget	14	4.7
When buying from customer	7	2.3
Total	**300**	**100**

Table 4: The relationship between nutrition knowledge, highest education attained and selected complementary feeding parameter

	Level of nutrition knowledge	Highest education attained	Frequency of feeding
Level of nutrition knowledge	1		
Educational qualification	115(p=0.046)	1	
Frequency of feeding	.188[b](p=.001)	.119[a](p=.040)	1

a=correlation is significant at 0.05 level (2-tailed) b=correlation is significant at 0.01 level (2-tailed)

DISCUSSIONS

This study investigated the nutrition knowledge, complementary feeding and use of food labels amongst young mothers in Owerri Metropolis, Imo State, Nigeria. All the mothers that participated in this study were married. [17] observed similar trend where 92% of the mothers were married and only 4.1% were single. The high

proportion of women who had basic education and were employed as well as the high proportion of those who earned average monthly income suggests that the mothers' income could contribute to the purchasing power of the women and the proportion of the income that could be utilized in the purchase of food items. The high proportion of women who had basic education and were employed reported in this study is in agreement with the report of [11] who observed higher proportion of basic education (87.4%) and employment (79.3%) among mothers.

The good knowledge of nutrition observed in more than half of the respondents could be linked to the educational qualifications of the mothers as majority of the respondents had tertiary education. Evidence suggests that nutrition knowledge plays a role in the feeding and care of infants [5,19]. Mothers who have good nutrition knowledge usually bring up their children in a healthier way than mothers who have poor knowledge of nutrition [13]. It is therefore necessary to promote nutrition knowledge using various platform targeting women of reproductive age and caregivers of children in a bid to improve infant and young child feeding practices of young mothers in Owerri. The proportion of mothers who had good knowledge observed in this study is higher than 31.7% reported by [11].

It is recommended that mothers introduce complementary food to children after six months of exclusive breastfeeding [20] however, this study observed that the rate of compliance to the recommendation on the introduction of complementary foods` was low. [16] reported higher proportion (73.2%) of women who introduced complementary foods after six months of exclusive breastfeeding in Satellite town, Lagos. However, [21] reported even lower (10%) proportion of women who introduced complementary foods after six months of exclusive breastfeeding among mothers in Nnewi, South-East Nigeria. These variations in the rate of infant feeding and care practices in different locations in Nigeria could be attributed to different level of nutrition knowledge, beliefs and culture of the people. [22] suggested promotion of breastfeeding and infant feeding practices at community levels in order to improve infant nutrition.

The majority of mothers who adopted pap as the major complementary food introduced to their infants is in agreement with the reports of [11,16,17]. This study observed that the most readily available foods given to infants were pap, custard and instant infant cereals. Pap, custard and instant infant cereals are products obtained from the cereal group which implies that the infants may not be consuming foods from up to the minimum of four food groups daily as recommended for infant and young child feeding [2]. It also suggests that there is need for nutrition intervention programmes targeted at improving knowledge on adequate complementary foods and methods of preparing complementary foods using locally available foods as suboptimal infant feeding could be detrimental to the health and well-being of the child.

None of the mother's breast fed their infants up to two years in as much as they all reported that they had no challenges in breastfeeding. The rate of breastfeeding of infants for more than twelve months observed in this study is not in agreement with the findings of [16] who reported that up to 44% of the mothers breastfed for more than 12 months and [12] who observed that up to 32% of the mothers breastfed their infants for more than 12 months. The rate of feeding the infants up to four times daily observed in this study is similar to the findings of [17]. The significant positive correlation observed between nutrition knowledge and frequency of feeding infants implies that obtaining nutrition knowledge will improve the frequency of feeding infants. This is in agreement with the evidence that improving a mother's nutrition knowledge could translate to improved feeding of her children [5,13,23].

This study observed a high rate of food label reading among the mothers. The results of the use of food labels reported in this study is related to the findings of a similar study [6] conducted in Aba, Abia state on the assessment of knowledge and use of food labels which observed high (96.6%) rate of use of food labels. The high rate of use of food labels among the respondents could be associated with their interest in the expiry date of foods. This could be attributed to the fact that majority of the respondents were motivated to read food labels in a bid to check the expiry dates. In addition, the information sought by majority of the subjects was expiry date while few sought for both expiry date and nutrient content of the food. This suggests that the majority of the mothers may not be aware of other vital information on packaged commercial complementary foods that may be useful for making appropriate choice of infant foods. The interest of the mothers regarding the expiry date of infant foods could be associated with higher emphasis on expiry date and registration number than any other detail on

food labels made by the food regulatory body in Nigeria [24]. The information sought for in food labels observed in this study is in agreement with the report of [25] where the major reason consumers read food labels was to confirm the use by and best before dates before purchasing the items.

Conclusion

This study revealed that while more than half of the mothers and caregivers have good nutrition knowledge, the practice of the recommended complementary feeding practice and utilization of food label is still poor. Half of the mothers introduce complementary feeding early before their child attain the recommended six months of age. Also the few women that attempt to read food labels are interested in the product best before display rather than the nutrition content and information. Therefore, there is need to strengthen programs that promote not only the mother's nutrition knowledge, but feeding practices including reading and utilization of food labels, recommended breastfeeding practice, introduction of timely, safe, appropriate and adequate complementary foods.

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Conflict of interests

No conflict of interest is declared

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