EFFECT OF NUTRITION EDUCATION ON MOTHER'S PRACTICES OF PRE-SCHOOLERS' NUTRITIONAL NEEDS IN PLATEAU STATE

I. P Bosah (PhD)[1] & Grace Hemba[2]

[1,2] *Department of Early Childhood and Primary Education, Faculty of Education, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria.*

Abstract

This study examined the effect of nutrition education on mothers' practice of pre-schoolers' nutritional needs in Plateau State. Two research questions guided the study while two null hypotheses were formulated. The design of the study was quasi-experimental design. The population of this study comprised all the 429 women of child bearing age registered with the five primary health care centres in Pankshin Local Government Area of Plateau State. The sample of this study consisted of 103 women of child bearing age registered from two registered primary health care centres. This selection was made using the multi-stage sampling technique. The instrument used for data collection is an achievement test and questionnaire titled "Test of Mothers' Knowledge of Preschoolers' Nutritional Needs" (TMKPNN) and "Questionnaire on Mothers' Practices of Preschoolers' Nutritional Needs" (QMPPNN). The instrument was validated by three experts and subjected to test of reliability using Kudar Richardson formula (KR-20) and Cronbach Alpha method settle the coefficient values. Mean and standard deviation scores was used to answer the research questions while ANCOVA was used to test the null hypotheses at 0.05 alpha level. The finding revealed that the mean knowledge scores of mothers exposed to nutrition education is higher than mothers who were not exposed. It was also found that the mean Practice scores of mothers exposed to nutrition education is higher than mothers who were not exposed. It was recommended amongst others that nutrition education should be a core component of pre-natal and post-natal care services. By reaching mothers during critical periods of pregnancy and early child development, these programs can help foster healthier attitudes and knowledge.

Keywords: *Nutrition, Nutrition Education, Preschool, Nutritional Needs, Mothers' Knowledge, Mothers' practice*

Introduction

Preschool education, encompassing crèche, nursery, and pre-primary stages, is designed to prepare young children for primary school by providing a structured educational environment before formal schooling begins. According to the National Policy on Education (FRN, 2014), the objectives of pre-primary education include ensuring a smooth transition from home to school, preparing children for primary education, providing care and supervision while parents are at work, and fostering good health habits. Central to achieving these goals is developmentally appropriate nutrition, which serves as a foundation for cognitive development, physical health, and emotional well-being. Proper nutrition equips preschoolers with the energy and nutrients needed to engage in educational activities, meet developmental milestones, and thrive in their early learning environments (FRN, 2014).

Building on the critical role of nutrition in achieving preschool education objectives, preschoolers have specific nutritional requirements essential for their growth, development, and overall health. Adequate nutrition during early childhood supports cognitive function, physical growth, immune system development, and the establishment of lifelong healthy eating habits (Denney et al., 2018). For instance, carbohydrates are a vital energy source for preschoolers, fueling their high activity levels and supporting their rapid growth (Katepa-Bwalya et al., 2021). As highlighted by Ogunmefun and Motunrayo (2021), a balanced diet providing sufficient energy is crucial for optimal growth and development, enabling preschoolers to actively participate in learning and play while meeting the energy demands of their dynamic developmental stage. By addressing these nutritional needs, preschool education programmes can effectively support the

holistic development of young children, ensuring they are well-prepared for the transition to primary school.

Nutrition education therefore involves imparting knowledge about healthy dietary practices and the importance of nutrition for growth and development (Banga et aI., 2020). Nutrition education is any combination of educational strategies accompanied by environmental support, designed to facilitate voluntary adoption of food choices and other food and nutrition related behaviours conducive to health and well-being (Banga –Baren et aI., 2020). In this study, nutrition education is defined as education provided for young women of child-bearing age and geared towards improving mothers' knowledge of the nutritional needs of pre-school children. According to Bashir and Umar (2012), nutrition education will give mothers better knowledge of nutritional needs of pre-school children. The authors further stressed that nutrition education plays a crucial role in empowering mothers to effectively meet the nutritional needs of preschool-aged children.

Nutrition education equips mothers with practical information on portion sizes, food groups, nutrient-rich choices, and meal planning strategies tailored to meet the specific nutritional needs of preschoolers Berisha et al.,(2017) opined that enhanced knowledge of nutrition education empowers mothers to make informed decisions about the types of foods to offer their children, ensuring a well-balanced diet that supports optimal growth, cognitive development, and overall health. This knowledge also enables mothers to prioritize nutrient-dense foods, address potential deficiencies, and create a nutritional environment that fosters the well-being of their preschoolers. In order words, exposing childbearing mothers to nutrition education significantly impacts their interest towards nutrition education.

Childbearing mothers who are not exposed to nutrition education may have limited knowledge about essential nutrients, proper feeding practices, and nutritional requirements for preschoolers. Olatona, Adenihun, Aderibigbeand Adeniyi (2017) suggested that mothers who lack nutrition education are more likely to rely on traditional beliefs or misinformation when making feeding decisions for their children, which can lead to inadequate dietary intake and nutrient deficiencies. Furthermore, Fadare et al.(2019) revered that the absence of nutrition education can result in childbearing mothers adopting inappropriate feeding practices for preschoolers. This means that mothers without nutrition education may struggle to provide balanced meals, offer a variety of foods, or understand portion sizes appropriate for young children, leading to imbalanced diets and potential health consequences.

Knowledge and positive practice must translate into action for effective dietary practices. Nutrition education equips mothers with practical skills, such as meal planning and healthy cooking methods, which are essential for providing nutritious meals. Banga et al. (2020) revealed that mothers who participated in nutrition education programs were more likely to implement and sustain better feeding practices, leading to improved health outcomes for their children. Jardi, Casanova and Arija (2021) reported that nutrition education interventions led to substantial improvements in mothers' knowledge, practice and interest, which directly contributed to better health and developmental outcomes for their children. This insinuates that the sustained knowledge, practice and interest exhibited by mothers who have undergone nutrition education programmes highlight the transformative potential of education in driving behavioural change and promoting optimal nutrition for preschoolers. It is therefore against this background that this study

seeks to determine the effect of nutrition education on mothers' practice of preschoolers' nutritional needs in Plateau State.

Statement of the Problem

In an ideal situation, mothers in Plateau State, Nigeria, would possess comprehensive knowledge about the nutritional needs of their preschool-aged children. This knowledge would enable them to make informed decisions regarding the planning, preparation, and provision of balanced diets that meet all the essential nutritional requirements for optimal growth and development. These mothers would be aware of the importance of various food groups, understand appropriate portion sizes, and practice healthy cooking methods that preserve the nutritional value of food. Consequently, preschoolers would have a lower risk of malnutrition, experience better physical and cognitive development, and be less susceptible to diseases, thereby laying a strong foundation for their future health and educational success.

However, the present situation in Plateau State tells a different story. Many mothers lack adequate knowledge and education about the nutritional needs of their preschoolers. This lack of education often results in improper feeding practices, such as giving children sugary snacks and drinks instead of nutritious meals, or serving oversized portions that can lead to childhood obesity. Some mothers may also be unaware of the importance of certain nutrients, leading to deficiencies in their children's diets. It is worrisome that with the enormous local foods with high nutritional values in Plateau State of Nigeria, many mothers still prefer processed, packaged and canned foods (junk foods) for their children. They are also commonly observed clustering around public food vendors on their way to and from school.

This present situation therefore shows that if nutrition education is lacking, it has dire consequences on preschoolers' nutrition needs such as high rates of malnutrition, including stunting, wasting, and micronutrient deficiencies, malnourished children being more susceptible to infections and diseases, which can lead to higher morbidity and mortality rates. This significant backdrop therefore calls for the need to investigate the effect of nutrition education on mothers' practice of preschoolers' nutritional needs in Plateau State. Specifically, the study seeks to determine:

1. The effect of nutrition education knowledge of preschoolers' nutritional needs among mothers of preschoolers in Plateau State
2. The effect of nutrition education on attitude of preschoolers' nutritional needs among mothers of preschoolers in Plateau State.

Research Questions

1. What is the mean difference in mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State.
2. What is the mean difference in mothers' attitude scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State.

Hypotheses

1. There is no significant mean difference in mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State.

2. There is no significant mean difference in mothers' attitude scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State.

Methods

The design of the study was quasi-experimental design. Specifically, it used pre-test posttest non-equivalent, non-randomized control group design. The population of this study comprised all the 429 women of child bearing age registered with the five primary health care centres in Pankshin Local Government Area of Plateau State. The WCBA are those between the ages of 18 – 50 years old. The sample of this study consisted of 103 women of child bearing age registered with College of health primary health care centre and new layout primary health care centre. This selection was made using the multi-stage sampling technique. From the experimental group, the intact number of 75 women with child bearing age (within 18 – 50 years) registered with college of health primary health care centre were used while from the control group, the intact number of 28 women with child bearing age (within 18 – 50 years) registered with new layout primary health care centre were used in the study. The instruments used for data collection were achievement test and questionnaire.

The first instrument was an achievement test titled "Test of Mothers' Knowledge of Preschoolers' Nutritional Needs" (TMKPNN). It is a 20-item achievement test questions structured by the researcher in line with the purpose of the study. The researcher used the question during the pre-test and the same questions were reshuffled and used as post-test. The second instrument for data collection was a structured questionnaire titled "Questionnaire on Mothers' Attitude of Preschoolers' Nutritional Needs" (QMAPNN) with 14-item structured questionnaire

on a 4-point rating scale of Strongly Agree (SA); Agree (A); Disagree (D) and Strongly Disagree (SD) with values 4, 3, 2, and 1 respectively. The instrument was validated by three experts. The Kudar Richardson formula (KR-20) was used to establish the reliability co-efficient and a value of 0.76 was obtained. More so, the QMAPNN was subjected to test of internal consistency using Cronbach Alpha method, and co-efficient value of 0.72 was obtained. Mean and standard deviation scores were used to answer the research questions while ANCOVA was used to test the null hypotheses at 0.05 alpha level.

Results

Table 1: Knowledge mean scores of mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education and when not exposed in Plateau State

Group	N	Pre-test $\overline{X}$	Post-test $\overline{X}$	Mean gain	Remark
Experimental group	75	35.45	68.12	32.67	Effective
Control group	28	21.51	50.89	29.38	
Difference				**3.29**	

Table 1 shows that the mean of mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education had a pre-test of 35.45 and post-test of 68.12, while mothers not exposed to nutrition education had a pre-test score of 21.51 and post-test of 50.89. The analysis revealed that knowledge mean scores of mothers exposed to nutrition education has a mean gain of 32.67 higher than mothers who are not exposed with mean gain 29.38. This means that the mean knowledge scores of mothers exposed to nutrition education is higher than mothers who are not exposed.

Table 2: ANCOVA test on significant mean difference in mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education and when not exposed in Plateau State.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1445.007[a]	2	722.504	100.473	.000
Intercept	4369.875	1	4369.875	607.685	.000
Knowledge	.397	1	.397	.055	.815
Treatment	1308.402	1	1308.402	181.949	.000
Error	826.968	101	7.191		
Total	164629.000	103			
Corrected Total	2271.975	102			

Table 2 reveals that no mean difference in mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State;

F(1,101) = 181.949, P= 0.000 < 0.05. Therefore, the null hypothesis is rejected. This means that there is a significant mean difference in mothers' knowledge scores of preschoolers' nutritional needs when exposed to nutrition education and when not exposed in Plateau State.

Table 3: Attitude mean scores of mothers' knowledge scores of preschoolers' nutritional needs those exposed to nutrition education and those not exposed in Plateau State

Group	N	Pre-test $\overline{X}$	Post-test $\overline{X}$	Mean gain	Remark
Experimental group	75	23.67	71.56	47.89	Effective
Control group	28	21.11	66.93	45.82	
Difference				2.07	

Table 3 shows that the mean of mothers' attitude scores of preschoolers' nutritional needs those exposed to nutrition education had a pre-test of 23.67 and post-test of 71.56, while mothers not exposed to nutrition education had a pre-test score of 21.11 and post-test of 66.93. The analysis revealed that attitude mean scores of mothers exposed to nutrition education has a mean gain of 47.89 higher than mothers who are not exposed with mean gain 45.82. This means that the mean attitude scores of mothers exposed to nutrition education is higher than mothers who are not exposed.

Table 4: ANCOVA test on the significant mean difference in mothers' attitude scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1268.389[a]	2	634.194	40.306	.000
Intercept	1528.879	1	1528.879	97.167	.000
Attitude	107.460	1	107.460	6.830	.011
Treatment	618.797	1	618.797	39.327	.000
Error	1038.481	101	15.735		
Total	45582.000	103			
Corrected Total	2306.870	102			

Table 4 reveals that no mean difference in mothers' attitude scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State; $F(1,101) = 39.327$, $P= 0.000 < 0.05$. Therefore, the null hypothesis is rejected. This means that there is a significant mean difference in mothers' attitude scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State.

Discussion of Findings

The finding in research question one revealed that the mean knowledge scores of mothers exposed to nutrition education is higher than mothers who were not exposed. This finding agreed with that of Contento, Balch, Bronner, Lytle, Maloney, Olson and Swadener(2017)who conducted a study on the impact of nutrition education programs and found that mothers who received nutrition education demonstrated significantly higher knowledge scores compared to those who did not participate in such programs. The study emphasized that structured nutrition education can lead to improved dietary behaviors and greater knowledge retention among mothers. Agho, Dibley, Odiase and Ogbonmwan (2016) agreed also that mothers who had exposure to nutrition education, either through health services or community programs, had higher knowledge scores related to proper feeding practices compared to their counterparts with no such exposure. The corresponding hypothesis revealed that there was a significant mean difference in mothers' knowledge scores of preschoolers' nutritional needs those exposed to nutrition education and those not exposed in Plateau State. This finding supported that of Adeyemo and Ijarotimi (2021) and Ibeanu, Onyechi and Eme (2018) that mothers who participated in nutrition education programs demonstrated a significantly higher knowledge score compared to those who did not. On the other hand, the finding opposed that of Maziya-Dixon, Akinyele, Oguntona, Nokoe, Sanusi and Harris (2016) that

while nutrition education programs increased knowledge scores, the difference was not as significant due to competing factors such as low literacy levels, food insecurity, and traditional beliefs about child feeding. The difference between both findings could be as a result of varying opinions of geographical location.

The finding in research question two revealed that the mean attitude scores of mothers exposed to nutrition education is higher than mothers who are not exposed. This finding supported that of Kumar, Singh and Mehta (2020) that mothers who were exposed to nutrition education had significantly higher mean attitude scores than those who were not. This shift in attitude included a greater willingness to adopt healthier feeding practices, such as incorporating a balanced diet and reducing reliance on processed foods. Onuoha and Umeh (2018) agreed that mothers who participated in nutrition education programs developed a more favorable attitude toward infant and preschooler nutrition compared to those who were not exposed. This improvement in attitude was reflected in greater appreciation for food diversity, better meal planning, and a more proactive approach to feeding their children.The corresponding hypothesis revealed that there is a significant mean difference in mothers' attitude scores of preschoolers' nutritional needs when exposed to nutrition education and those not exposed in Plateau State.This finding agreed with that of Olumakaiye and Ajayi (2021) that found a significant difference in the attitudes of mothers who received nutrition education in southwestern Nigeria. Their research showed that mothers who participated in nutrition education sessions exhibited a more positive attitude towards healthy meal preparation and food selection for their preschool children.

Conclusion

The findings from this study clearly indicate that nutrition education plays a crucial role in enhancing both the knowledge and attitudes of mothers regarding the nutritional needs of their

children. Mothers who were exposed to nutrition education demonstrated significantly higher mean knowledge and attitude scores compared to those who were not exposed. This underscores the importance of targeted educational interventions in empowering mothers to make informed decisions about their children's nutrition, which is vital for promoting healthier growth and development, especially in early childhood.

Recommendations

Based on the findings, the following recommendations were made:

1. Health institutions in Plateau State and non-governmental organizations should prioritize the expansion of nutrition education programs, especially in underserved and rural areas. These programs should be integrated into maternal and child healthcare services to ensure that all mothers have access to essential nutritional knowledge.
2. Plateau State government should establish community-based nutrition education initiatives that focus on participatory learning methods. These programs should incorporate local culture, food availability, and socioeconomic factors to ensure practical and sustainable improvements in mothers' attitudes and practices towards child nutrition.
3. Nutrition education should be a core component of pre-natal and post-natal care services. By reaching mothers during critical periods of pregnancy and early child development, these programs can help foster healthier attitudes and knowledge early.

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