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ASSESSMENT OF PRIMARY SCHOOL TEACHERS' LEVEL OF KNOWLEDGE OF THE ROLE OF NUTRITION IN PROMOTING VITALITY

Dr. (Mrs.) Okoh Patricia Ayaegbunem

Department of Home Economics Education, School of Secondary Education (Vocational)
Federal College of Education (Technical), Asaba, Delta State
Ph: 08037145101 Email: patriciaayi@yahoo.com

Abstract

The study assessed primary school teachers' level of knowledge of the role of nutrition in promoting vitality in children. The study investigated primary school teachers' knowledge of the role of nutrition in enhancing children's vitality. A descriptive survey design was employed, guided by three research questions and one hypothesis. The study focused on all teachers in public and private primary schools within the Asaba metropolis. A total of 300 teachers 150 each from 10 public and 10 private schools were selected using a multistage sampling technique. Schools were purposively chosen, participants were stratified by school type, and respondents were selected through convenience sampling. Data were collected using a researcher-developed, 32-item questionnaire titled Teachers' Level of Knowledge on Nutrition and Vitality among Pupils Questionnaire (TLKNVPQ). The instrument had two sections: Section A gathered demographic information, while Section B focused on teachers' knowledge and practices regarding nutrition. Responses were rated on a four-point Likert scale, with formats including Strongly Agree to Strongly Disagree and Very High Extent to Very Low Extent. The questionnaire was validated by two experts and tested for reliability using the split-half method, yielding an internal consistency coefficient of 0.83. With assistance from two trained research aides, 300 copies of the questionnaire were distributed, and 283 (94%) were returned and analyzed. Descriptive statistics, including mean scores and standard deviation, were used for analysis. Findings revealed among others that while teachers in both public and private schools understood the importance of balanced nutrition in promoting children's physical energy and vitality, this knowledge was not consistently translated into classroom practices. Teachers rarely integrated discussions on healthy eating into lessons, seldom organized nutrition-focused activities, and infrequently invited health professionals to speak on healthy lifestyles or active meal programs. Based on the findings, it was recommended among others that teacher education programs, both pre-service and in-service, should include mandatory coursework on nutrition and child health. This would help ensure that educators are well-equipped to support pupils' physical growth, cognitive development, vitality, and emotional well-being through informed nutritional practices.

Keywords: Level of Knowledge, primary school teachers, promotion of vitality, role of nutrition.

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Introduction

Nutrition stands as a cornerstone in the comprehensive development of children, encompassing not only their physical growth but also their cognitive advancement and emotional stability. Within the realm of primary education, teachers function as pivotal facilitators in shaping healthy lifestyle choices among young learners, particularly concerning dietary habits. Given the significant number of hours children spend in school environments and the authoritative influence teachers exert in shaping young minds, the depth of teachers' nutritional knowledge directly affects the promotion of vitality in children (Adewumi & Olayemi, 2017). Here, vitality transcends mere physical robustness; it encapsulates sustained cognitive acuity, psychological resilience, and effective social functioning elements that are all closely interlinked with sound nutritional practices.

Optimal nutrition is foundational for children's development. It enhances immune strength, supports cellular and neural development, aids learning processes, and sustains overall health and productivity (Onabanjo & Oguntona, 2019). Conversely, nutritional deficiencies particularly in formative years—can result in irreversible growth retardation (stunting), learning disabilities, weakened immunity, and increased susceptibility to infections, which in turn contribute to irregular school attendance and diminished academic outcomes (WHO, 2020). Empirical evidence suggests that undernourished children often experience chronic fatigue, reduced classroom engagement, and heightened incidences of behavioral disturbances, thereby reinforcing the necessity for educators to recognize and respond proactively to the nutritional needs of their pupils (Olumakaiye, 2016).

Beyond their academic responsibilities, primary school teachers serve as daily exemplars of behavior and health consciousness. Their ability to champion nutrition education and promote healthy eating both informally through modeling and formally through structured lessons is contingent on their own understanding and perceptions of nutritional science (Obasohan & Okojie, 2018). In countries like Nigeria and similar low- to middle-income contexts, the paradox of coexisting undernutrition and increasing rates of childhood obesity and diet-related non-communicable diseases intensifies the demand on educational institutions to impart sound dietary values early in life (Idowu et al., 2021).

Research into the nutritional competence of teachers has revealed varied levels of awareness. While many educators possess rudimentary knowledge—such as the classification of food groups and the acknowledged importance of breakfast—critical gaps remain, particularly concerning micronutrient requirements, food synergy, and the long-term effects of inadequate diets (Yusuf &Adamu, 2019). Akinyemi and Ikuomola (2020) further identified that teacher training programs often marginalize nutrition-related content, thereby failing to prepare educators for this integral role. Moreover, a recent study by Nwachukwu and Eze (2023) highlighted a pronounced divide between urban and rural educators, with urban teachers demonstrating superior comprehension of how diet influences academic performance and vitality. This disparity suggests that access to professional development and educational

resources is unevenly distributed, underscoring the need for equitable, location-sensitive interventions.

Despite the growing recognition of the teacher's role in nutritional advocacy, several obstacles hinder effective implementation. These include inadequate pre-service and in-service training, limited availability of instructional materials, and weak partnerships between schools and healthcare services, such as those involved in school feeding initiatives (Oluwafemi & Oladele, 2022). Furthermore, nutrition education within current curricula often remains overly theoretical, lacking practical application and cultural relevance, thus limiting its impact on real-world dietary behaviors.

The broader implications of good nutrition extend well beyond childhood. Diets rich in plant-based foods such as fruits, vegetables, legumes, whole grains, and healthy fats are known to reduce the risk of chronic conditions like cardiovascular disease, type 2 diabetes, and obesity. Scientific research supports that high-fiber foods enhance digestive health and reduce cancer risks (Slavin, 2013), while omega-3 fatty acids—abundant in fish, nuts, and flaxseeds—possess anti-inflammatory properties that improve cardiac function and mental clarity (Mozaffarian & Wu, 2012). Additionally, antioxidants found in colorful fruits and vegetables help neutralize free radicals, thereby minimizing oxidative stress and cell damage, which are often precursors to long-term illnesses (Pham-Huy et al., 2008). These benefits further solidify the argument that nutrition education should not be sidelined but rather integrated as a core component of holistic child development.

Teachers, therefore, are not merely conveyors of academic content but are also stewards of student well-being. Their competency in nutrition significantly shapes the environments in which children learn, grow, and thrive. Regular evaluations of their knowledge base, coupled with sustained, evidence-based training interventions, can transform classrooms into powerful ecosystems of health promotion. This approach positions primary education not only as a platform for intellectual enrichment but also as a crucial driver of national health and social development.

Fundamentally, nutrition sustains vitality by providing the body with essential macro- and micronutrients required for energy metabolism, cognitive function, emotional regulation, and disease prevention. A nutritionally adequate diet—featuring a balance of carbohydrates, proteins, fats, vitamins, and minerals—fuels bodily processes, supports immunity, and enhances mental health and longevity. However, persistent barriers such as poverty, inadequate nutritional literacy, seasonal food scarcity, environmental degradation, and climate-induced disruptions continue to undermine dietary quality in many regions. These challenges often result in erratic or uninformed eating behaviors that compromise both immediate well-being and long-term vitality, particularly among vulnerable populations. Therefore, it is essential to implement strategies that empower communities and, especially, teachers to comprehend and convey the significance of nutrition in sustaining vitality throughout life stages.

Statement of the Problem

The nutritional well-being of school-aged children is a foundational pillar of their holistic development, directly influencing their academic success, physical growth, emotional resilience, and overall vitality. At the primary school level, where foundational habits and lifelong learning patterns are formed, teachers serve not only as facilitators of academic content but also as key influencers in shaping children's health-related behaviors. Their day-to-day interactions with pupils place them in a strategic position to promote positive dietary practices. However, a growing body of concern highlights a significant gap: many primary school teachers may not possess sufficient knowledge of core nutritional concepts or understand how nutrition enhances vitality-related outcomes such as cognitive focus, immune strength, energy regulation, and emotional well-being.In countries like Nigeria and across many low- and middle-income settings, the dual burden of undernutrition and the rising tide of diet-related non-communicable diseases (NCDs) among children further complicates the landscape. Despite this growing public health challenge, nutrition education is still marginally represented, or altogether absent, in pre-service and in-service teacher training curricula. Where nutrition content is included, it is often fragmented, theoretical, and rarely reinforced through practical, context-specific applications. Consequently, many teachers are not adequately prepared to recognize signs of malnutrition, embed nutrition themes into their daily lessons, or contribute meaningfully to school-wide health initiatives such as school feeding programs or garden-based learning.

Moreover, the lack of robust, up-to-date empirical data assessing teachers' current level of nutrition knowledge, particularly regarding its implications for children's vitality, presents a critical blind spot in policy and curriculum development. Without this data, it becomes difficult for education authorities, health advocates, and curriculum planners to craft targeted, evidence-based interventions that strengthen teachers' competencies in this domain. A comprehensive assessment of teachers' understanding is therefore not only timely but essential. Such assessments can uncover knowledge gaps, inform the design of professional development programs, and ultimately empower educators to act as catalysts for improved nutritional outcomes and enhanced vitality in the school setting.

Purpose of the Study

The general purpose of the study is determine the level of knowledge of primary school teachers regarding the role of nutrition in promoting vitality among pupils. Specifically, the study aimed to:

1. Find out the extent to which primary school teachers understand the relationship between nutrition and physical vitality in children.
2. Find out the level of knowledge among teachers about the impact of nutrition on cognitive performance and learning in primary school pupils.
3. The extent to which teachers integrate nutrition education into classroom instruction and school activities.

Research Questions

The following research questions were raised to guide the study.

1. To what extent do primary school teachers understand the relationship between nutrition and physical vitality in children?
2. What is the level of knowledge among teachers about the impact of nutrition on cognitive performance and learning in primary school pupils?
3. To what extent do teachers integrate nutrition education into classroom instruction and school activities?

Research Hypothesis

The following null hypothesis was formulated and tested in the study at 0.05 alpha level of significance.

$H0_1$. There is no significant difference in the mean opinions of public and private primary school teachers on the level of knowledge of teachers regarding the role of nutrition in promoting vitality among pupils.

Methodology

The study adopted a descriptive survey design. The population for the study comprised all primary school teachers in public and private primary school in Asaba metropolis. Asaba is the capital city of Delta State, it also doubles as the headquarters of Oshimili South Local Government Area of Delta State. The metropolis houses some public and many private primary schools that admit children of school age with varied socioeconomic background which influences the type of food children go to school with. The sample size for the study comprised 300 teachers selected from 10 public and 10 private primary schools. The purposive sampling technique was adopted for the selection of the schools to ensure inclusiveness and flexibility. Due to the unequal staff strength of the various schools, the stratified sampling technique was used to derive the 300 participants. In this wise, from schools with more staff, more teachers were selected. The convenience (accidental) sampling technique was used for the selection of the respondents. The teachers were first approached and informed about the study and the need for them to participate. Those who accepted to participate were selected while those who chose not to participate were ignored. In this way, the 300 participants were selected. In all, 150 teachers each from public and private schools were selected.

The instrument for data collection was a structured questionnaire developed by the researcher. It was a 32-item four-point rating scale instrument titled: Teachers' Level of Knowledge on Nutrition and Vitality among Pupils Questionnaire (TLKNVPQ). The instrument was divided into two parts of A and B. Part A made provisions for respondents' biodata while Part B provided statements that elicited responses from the respondents on the issues raised in the research questions. The items were labeled and weighted, Strongly Agree

(SA=4), Agree (A=3), Disagree (D=2), and Strongly Disagree (SA=1). The instrument was validated by two experts who scrutinized the instrument for face, content and construct validity. The reliability of the instrument was established through a trial test which adopted the split-half method. An internal consistency value of 0.83 was attained after the two results from the split half test was subjected to relationship test with the use of Pearson Product Moment Correlation Coefficient (r). The research, with the support of two guided research assistant, administered 300 copies of the instrument to the respondents while 283(94%) were returned. Data collected from the field were analyzed with the use of descriptive statistics of mean scores and standard deviation. Based on the four-point rating scale, a criterion mean of 2.50 was set. Thus, any mean value that ranged from 2.50 and above was treated as agreement or high extent while any mean value that ranged below 2.50 was treated as disagreement or low extent. The hypothesis was tested with t-test statistical tool.

Results

Research Question One: To what extent do primary school teachers understand the relationship between nutrition and physical vitality in children?

Table 1: Mean and Standard Deviation Distribution of Respondents (Public Primary School Teachers) Rating on Extent Do Primary School Teachers Understand of the Relationship between Nutrition and Physical Vitality in Children

S/N		VHE	HE	LE	VLE	X	SD	Decision
	As a teacher, I have understanding/knowledge:							
1	the basic food groups and their roles in children's health	31	23	46	44	2.28	1.12	LE
2	that balanced nutrition contributes to children's physical energy and vitality.	43	37	28	36	2.60	1.16	HE
3	that malnutrition can lead to fatigue in children	29	38	31	46	2.35	1.13	LE
4	that malnutrition can lead to poor concentration in children	33	27	39	45	2.33	1.15	LE
5	that the vitality of a child depends on what he/she eats	41	47	21	35	2.65	1.14	HE
6	that excessive intake of sugary foods affects children's physical alertness	23	26	37	58	2.10	1.11	LE
7	that the growth of a child depends on the food type they eat	49	38	25	32	2.72	1.16	HE
8	that micronutrients (e.g., iron, calcium, vitamin A) promote child development and vitality	33	35	28	48	2.37	1.17	LE
9	that Poor dietary habits can lead to frequent illness	51	49	13	31	2.83	1.13	HE

10	that healthy eating habits foster vitality in children	41	47	33	23	2.74	1.04	HE
11	that healthy eating/nutrition rich food have nothing to do with child's vitality	23	17	39	65	1.99	1.10	LE
	Grand Mean/Standard Deviation					**2.45**	**1.12**	**LE**

Results in Table 1 revealed that respondents (teachers from public primary schools) agreed to a high extent with items 2(2.60), 5(2.65), 7(2.72), 9(2.83), and 10(2.74), with mean scores significantly higher than 2.50 the criterion mean for determination of a mean score as high or low extent, as they ranged between 2.60 and 2.83. On the other hand, respondents agreed to a low extent with items 1(2.28), 3(2.35), 4(2.33), 6(2.10), 8(2.37) and 11(1.99) with mean scores significantly less than 2.50 benchmark as they ranged between 1.99 and 2.37. The result revealed the grand mean as 2.45 with a grand standard deviation of 1.12. The results indicate that primary school teachers in public schools have some levels of understanding/knowledge that balanced nutrition contributes to children's physical energy and vitality, that malnutrition can lead to fatigue in children, that the vitality of a child depends on what he/she eat, that the growth of a child depends to a large extent on the food type they eat, that poor dietary habits can lead to frequent illness, and that healthy eating habits foster vitality in children. The results in the same table also revealed that, teachers in public primary schools do not have adequate knowledge and awareness about basic food groups and their roles in children's health, do not understand that malnutrition can lead to poor concentration in children, that excessive intake of sugary foods affects children's physical alertness, that micronutrients (e.g., iron, calcium, vitamin A) promote child development and vitality, and believe that healthy eating/nutrition rich food have nothing to do with child's vitality.

Table 2: Mean and Standard Deviation Distribution of Respondents (Private Primary School Teachers) Rating on Extent Do Primary School Teachers Understand of the Relationship between Nutrition and Physical Vitality in Children

S/N		VHE	HE	LE	VLE	X	SD	Decision
	As a teacher, I have understanding/knowledge:							
1	the basic food groups and their roles in children's health	29	25	44	41	2.30	1.11	LE
2	that balanced nutrition contributes to children's physical energy and vitality.	40	39	26	34	2.61	1.15	HE
3	that malnutrition can lead to fatigue in children	27	38	31	43	2.35	1.12	LE
4	that malnutrition can lead to poor concentration in children	35	23	36	45	2.35	1.18	LE
5	that the vitality of a child depends on							

	what he/she eats	39	43	21	36	2.61	1.15	HE
6	that excessive intake of sugary foods affects children's physical alertness	23	24	37	55	2.11	1.11	LE
7	that the growth of a child depends on the food type they eat	46	37	24	32	2.70	1.16	HE
8	that micronutrients (e.g., iron, calcium, vitamin A) promote child development and vitality	31	33	28	47	2.35	1.17	LE
9	that Poor dietary habits can lead to frequent illness	48	49	13	29	2.83	1.12	HE
10	that healthy eating habits foster vitality in children	38	42	33	26	2.66	1.07	HE
11	that healthy eating/nutrition rich food have nothing to do with child's vitality	22	17	39	61	2.00	1.10	LE
	Grand Mean/Standard Deviation					**2.44**	**1.13**	**LE**

Results in Table 2 revealed that respondents (teachers in private primary schools) agreed to a high extent with items 2(2.61), 5(2.61), 7(2.70), 9(2.83), and 10(2.66), with mean scores significantly higher than 2.50 the criterion mean for determination of a mean score as high or low extent, as they ranged between 2.61 and 2.83. On the other hand, respondents agreed to a low extent with items 1(2.30), 3(2.35), 4(2.35), 6(2.11), 8(2.35) and 11(2.00) with mean scores significantly less than 2.50 benchmark as they ranged between 2.00 and 2.35. The result revealed the grand mean as 2.44 with a grand standard deviation of 1.13. The results indicate that primary school teachers in private schools, just like their counterparts in the public schools, have some levels of understanding/knowledge that balanced nutrition contributes to children's physical energy and vitality, that malnutrition can lead to fatigue in children, that the vitality of a child depends on what he/she eat, that the growth of a child depends to a large extent on the food type they eat, that poor dietary habits can lead to frequent illness, and that healthy eating habits foster vitality in children. The results in the same table also revealed that, teachers in public primary schools do not have adequate knowledge and awareness about basic food groups and their roles in children's health, do not understand that malnutrition can lead to poor concentration in children, that excessive intake of sugary foods affects children's physical alertness, that micronutrients (e.g., iron, calcium, vitamin A) promote child development and vitality, and believe that healthy eating/nutrition rich food have nothing to do with child's vitality.

Research Question Two: What is the level of knowledge among teachers about the impact of nutrition on cognitive performance and learning in primary school pupils?

Table 3: Mean and Standard Deviation Distribution of Respondents (Public Primary School Teachers) Rating on the Level of Knowledge among Teachers about the Impact of Nutrition on Cognitive Performance and Learning in Primary School Pupils

S/N		SA	A	D	SD	X	SD	Decision
	As a primary schoolteacher, I have the knowledge that:							
12	Good nutrition enhances pupils' concentration	43	38	31	32	2.64	1.13	Agree
13	Pupils pay better attention when they eat good food	36	51	27	30	2.65	1.07	Agree
14	Malnutrition seldom lead to poor academic performance in school-aged children	39	41	46	18	2.70	1.00	Agree
15	iron deficiency can cause fatigue and reduce learning ability in children.	23	21	47	53	2.10	1.07	Disagree
16	Breakfast consumption before school improves memory and learning outcomes in pupils.	20	25	38	61	2.03	1.08	Disagree
17	Undernourished meals make pupils to perform poorly in academic activities	23	31	36	54	2.16	1.10	Disagree
18	undernutrition on a primary school pupil affects memorization skills	41	49	35	19	2.78	1.01	Agree
19	undernutrition on a primary school pupil affects class participation	47	45	32	20	2.83	1.04	Agree
20	undernutrition on a primary school pupil affects school attendance	22	25	47	50	2.13	1.06	Disagree
21	Nutrition actually has nothing to do with the academic performance of pupils	58	21	41	24	2.78	1.15	Agree
	Grand Mean/Standard Deviation					**2.48**	**1.07**	**Disagree**

Results in Table 3 revealed that respondents (Teachers in public primary schools) agreed with items 12(2.64), 13(2.65), 14(2.70), 18(2.78), 19(2.83), and 21(2.78). The mean scores for these items range between 2.64 and 2.83, values that are significantly higher than 2.50 the criterion mean. The results also revealed that, the respondents disagree with items 15(2.10), 16(2.03), 17(2.16), and 20(2.13) with mean scores significantly less than 2.50 criterion mean. The grand mean for the results is 2.48 and is significantly less than 2.50 the criterion mean. The grand standard deviation is 1.07. The results indicate that teachers in public primary schools have the knowledge that good nutrition enhances pupils' concentration, and fosters better pupils'attention to lessons, and that malnutrition can lead to poor academic performance in school-aged children, affects memorization skills, and class participation. The results also showed that teachers agree that nutrition actually has nothing serious to do with the academic performance of pupils.

Table 4: Mean and Standard Deviation Distribution of Respondents (Private Primary School Teachers) Rating on the Level of Knowledge among Teachers about the Impact of Nutrition on Cognitive Performance and Learning in Primary School Pupils

S/N		SA	A	D	SD	X	SD	Decision
	As a primary schoolteacher, I have the knowledge that:							
12	Good nutrition enhances pupils' concentration	41	37	29	32	2.63	1.14	Agree
13	Pupils pay better attention when they eat good food	33	49	27	30	2.61	1.07	Agree
14	Malnutrition seldom lead to poor academic performance in school-aged children	37	41	43	18	2.70	1.00	Agree
15	iron deficiency can cause fatigue and reduce learning ability in children.	20	24	46	49	2.11	1.05	Disagree
16	Breakfast consumption before school improves memory and learning outcomes in pupils.	59	20	35	25	2.81	1.17	Disagree
17	Undernourished meals make pupils to perform poorly in academic activities	21	52	35	31	2.45	1.00	Disagree
18	undernutrition on a primary school pupil affects memorization skills	39	38	35	27	2.64	1.09	Agree
19	undernutrition on a primary school pupil affects class participation	51	32	29	27	2.77	1.14	Agree
20	undernutrition on a primary school pupil affects school attendance	50	25	42	22	2.74	1.11	Agree
21	Nutrition actually has nothing to do with the academic performance of pupils	22	21	41	55	2.07	1.09	Disagree
	Grand Mean/Standard Deviation					**2.55**	**1.08**	**Agree**

Results in Table 4 revealed that respondents (Teachers in public primary schools) agreed with items 12(2.63), 13(2.61), 14(2.70), 16(2.81), 18(2.64), 19(2.83), 19(2.77), and 20(2.74). The mean scores for these items range between 2.61 and 2.83, values that are significantly higher than 2.50 the criterion mean. The results also revealed that, the respondents disagree with items 15(2.11), 17(2.45), and 21(2.07) with mean scores significantly less than 2.50 criterion mean. The grand mean for the results is 2.55 and is significantly higher] than 2.50 the criterion mean. The grand standard deviation is 1.08. The results indicate that teachers in privateprimary schools have the knowledge that good nutrition enhances pupils' concentration, fosters better attention that malnutrition can lead to poor academic performance in school-aged children, that breakfast consumption before school improves memory and learning outcomes in pupils, undernutrition on a primary school pupil affects

memorization skills, class participation, and school attendance. It also revealed that primary school teachers in private schools do not agree that iron deficiency can cause fatigue and reduce learning ability in children, and that undernutrition meals make pupils to perform poorly in academic activities, and disagree that nutrition actually has nothing to do with the academic performance of pupils.

Research Question Three: To what extent do teachers integrate nutrition education into classroom instruction and school activities?

Table 5: Mean and Standard Deviation Distribution of Respondents (Public Primary School Teachers) Rating on the Extent Teachers Integrate Nutrition Education into Classroom Instruction and School Activities

S/N		VHE	HE	LE	VLE	X	SD	Decision
	As a primary schoolteacher:							
22	I include nutrition-related topics in my lesson plans regularly.	23	31	45	45	2.22	1.06	LE
23	I use classroom discussions to teach pupils healthy eating habits.	37	43	36	28	2.62	1.07	HE
24	I integrate nutrition education across different subjects	31	31	38	44	2.34	1.13	LE
25	I use visual aids (charts, food models, posters) to teach nutrition concepts.	33	27	39	45	2.33	1.15	LE
26	I organize or encourage classroom activities that promote healthy food choices	41	47	21	35	2.65	1.14	HE
27	I participate in school-wide nutrition awareness programs (e.g., World Food Day, Nutrition Week).	26	23	40	55	2.14	1.12	LE
28	I collaborate with other teachers or staff to organize health and nutrition-related events.	25	32	49	38	2.31	1.05	LE
29	I involve parents in promoting healthy eating through school activities or newsletters.	28	35	33	48	2.30	1.13	LE
30	I support the school meal program by encouraging students to eat nutritious food.	31	49	13	51	2.42	1.18	LE
31	I seldom invite health professionals or nutritionists to talk to students about healthy living	41	47	33	23	2.74	1.04	HE
32	There is no active school meal programme in our school	65	39	17	23	3.01	1.10	HE
	Grand Mean/Standard Deviation					**2.46**	**1.10**	**LE**

Results in Table 5 revealed that respondents (Teachers in public primary schools) agreed with items 23(2.62), 26(2.65), 31(2.74), and 32(3.01) with mean scores significantly higher than 2.50 criterion mean as the mean scores range between 2.62 and 3.01. The results further revealed that respondents disagreed with items 22(2.22), 24(2.34), 25(2.33), 27(2.14), 28(2.31), 29(2.30), and 30(2.42). The mean scores for the items range between 2.14 and 2.42, values that are significantly less than 2.50 the criterion mean. The grand mean for the results is 2.46 with a grand standard deviation of 1.10. The results indicate that primary school teachers in public schools use classroom discussions to teach pupils healthy eating habits, organize or encourage classroom activities that promote healthy food choices,seldom invite health professionals or nutritionists to talk to pupils about healthy living, and do not have ideas about active school meal programme inschool. The results further revealed that teachers in public primary schools Do not regularly include nutrition-related topics in lesson plans, nutrition education is not integrate across different subjects, seldom use visual aids (charts, food models, posters) to teach nutrition concepts, seldom participate in school-wide nutrition awareness programmes such as World Food Day and Nutrition Week, do not collaborate with other teachers or staff to organize health and nutrition-related events, do not involve parents in promoting healthy eating through school activities or newsletters, and do not really encouraging students to eat nutritious food.

Table 6: Mean and Standard Deviation Distribution of Respondents (Private Primary School Teachers) Rating on the Extent Teachers Integrate Nutrition Education into Classroom Instruction and School Activities

S/N		VHE	HE	LE	VLE	x	SD	Decision
	As a primary school teacher:							
22	I include nutrition-related topics in my lesson plans regularly.	21	33	44	41	2.24	1.04	LE
23	I use classroom discussions to teach pupils healthy eating habits.	35	41	39	24	2.63	1.04	HE
24	I integrate nutrition education across different subjects	27	31	37	44	2.29	1.11	LE
25	I use visual aids (charts, food models, posters) to teach nutrition concepts.	32	27	37	43	2.35	1.15	LE
26	I organize or encourage classroom activities that promote healthy food choices	41	42	22	34	2.65	1.15	HE
27	I participate in school-wide nutrition awareness programs (e.g., World Food Day, Nutrition Week).	26	23	39	51	2.17	1.12	LE
28	I collaborate with other teachers or staff to organize health and nutrition-related events.	23	31	47	38	2.28	1.04	LE
29	I involve parents in promoting healthy eating through school	26	35	30	48	2.28	1.13	LE

	activities or newsletters.							
30	I support the school meal program by encouraging students to eat nutritious food.	33	42	19	45	2.45	1.17	LE
31	I seldom invite health professionals or nutritionists to talk to students about healthy living	38	44	33	24	2.69	1.06	HE
	There is no active school meal programme in our school	49	40	31	19	2.86	1.05	HE
	Grand Mean/Standard Deviation					2.44	1.09	LE

Results in Table 6 revealed that respondents (Teachers in private primary schools) agreed with items 23(2.63), 26(2.65), 31(2.69), and 32(2.86) with mean scores significantly higher than 2.50 criterion mean as the mean scores range between 2.63 and 2.86. The results further revealed that respondents disagreed with items 22(2.24), 24(2.29), 25(2.35), 27(2.17), 28(2.28), 29(2.28), and 30(2.45). The mean scores for the items range between 2.17 and 2.45, values that are significantly less than 2.50 the criterion mean. The grand mean for the results is 2.44 with a grand standard deviation of 1.09. The results indicate that primary school teachers in private schools, like their counterparts in public schools,use classroom discussions to teach pupils healthy eating habits, organize or encourage classroom activities that promote healthy food choices, seldom invite health professionals or nutritionists to talk to pupils about healthy living, and do not have ideas about active school meal programme inschool. The results further revealed that teachers in public primary schools Do not regularly include nutrition-related topics in lesson plans, nutrition education is not integrate across different subjects, seldom use visual aids (charts, food models, posters) to teach nutrition concepts, seldom participate in school-wide nutrition awareness programmes such as World Food Day and Nutrition Week, do not collaborate with other teachers or staff to organize health and nutrition-related events, do not involve parents in promoting healthy eating through school activities or newsletters, and do not really encouraging students to eat nutritious food.

Hypothesis One: There is no significant difference in the mean opinions of public and private primary school teachers on the level of knowledge of teachers regarding the role of nutrition in promoting vitality among pupils.

Table 7: Two Tail Tests of the Differences in Teachers of Public and PrivatePrimary Schools Rating on the Level of Knowledge of Teachers Regarding the Role of Nutrition in Promoting Vitality among Pupils

Category	$\sum f$	x	SD	Standard error	DF	t-cal	t-cri	Decision
Public Pry. Sch.		26.96	2.45	0.51	1.004	51.83	0.051	1.92	Accepted
Private Pry. Sch.		26.87	2.44	0.49				

Table 7 shows that the sum of frequencies for Public and private school teachers are26.96 and 26.87 respectively. The grand mean scores for both categories are 2.45 and 2.44 respectively. It shows the standard deviations of 0.51 and 0.49 respectively with a standard error of 1.004. A degree of freedom of 51.83 and calculated value of 0.051 is established. However, it shows the critical value as 1.92. The rule guiding the test of hypothesis using t-test states that; where the calculated value is higher than the critical value the hypothesis should be rejected but where the calculated value is less than the critical value, the hypothesis should be accepted. From the figures in the table, the calculated value of 0.051is significantly less than the critical value of 1.92. By virtue of the established rule guiding the test, the null hypothesis is accepted. It implies that the mean responses of primary school teacher in both public and private schools do not significantly differ.

Discussion of Findings

Findings in the study revealed that primary school teachers in public and privateprimary schoolshave some levels of understanding/knowledge that balanced nutrition contributes to children's physical energy and vitality that the vitality of a child depends on what he/she eats, that the growth of a child depends to a large extent on the food types they eat, and that healthy eating habits foster vitality in children. The findings also revealed that poor diet results in malnutrition which can lead to fatigue in children, and that poor dietary habits can lead to frequent illness. These findings align with the findings Onabanjo and Oguntona (2019) who found out that food nutrients enhance immune strength, supports cellular and neural development, aids learning processes, and sustains overall health and productivity. Further findings from the study revealed that, teachers in public and private primary schools do not have adequate knowledge and awareness about basic food groups and their roles in children's health, do not understand that malnutrition can lead to poor concentration in children, that excessive intake of sugary foods affects children's physical alertness, that micronutrients (e.g., iron, calcium, vitamin A) promote child development and vitality. They also have the perception that healthy eating/nutrition rich food have nothing to do with child's vitality but that it is a function of nature. These findings complement the findings of are at variance with the empirical evidence of Olumakaiye (2016) who found out that undernourished children often experience chronic fatigue, reduced classroom engagement, and heightened incidences of behavioral disturbances, thereby reinforcing the necessity for educators to recognize and respond proactively to the nutritional needs of pupils.

More findings from the study revealed that teachers in public primary schools have the knowledge that good nutrition enhances pupils' concentration, and fosters better pupils' attention to lessons and that malnutrition seldom leads to poor academic performance in school-aged children as some children from poor home background excel academically better than some from rich home with good knowledge of food nutrition, even though, it affects memorization skills, and class participation. The findings also showed that teachers in public and private primary schools aligned that nutrition in isolation actually has nothing serious to do with the academic performance of pupils, although, teachers in private schools emphasized that breakfast consumption before school improves memory and learning outcomes in pupils. These findings negate the findings of Yusuf and Adamu (2019) who

unequivocally stated that, teachers have varied levels of awareness and nutritional competence. While many educators possess rudimentary knowledge, such as the classification of food groups and the acknowledged importance of breakfast, critical gaps remain, particularly concerning micronutrient requirements, food synergy, and the long-term effects of inadequate diets which remains a challenge to the system and overall development of children.

Additional findings from the study revealed that primary school teachers in public and private schools seldom use classroom discussions to teach pupils healthy eating habits, organize or encourage classroom activities that promote healthy food choices, seldom invite health professionals or nutritionists to talk to pupils about healthy living, and do not have ideas about active school meal programme inschools. The findings further revealed that teachers in both public and private primary schools do not regularly include nutrition-related topics in lesson plans, nutrition education is not integrate across different subjects, seldom use visual aids (charts, food models, posters) to teach nutrition concepts, seldom participate in school-wide nutrition awareness programmes such as World Food Day and Nutrition Week, do not collaborate with other teachers or staff to organize health and nutrition-related events, do not involve parents in promoting healthy eating through school activities or newsletters, and do not really encouraging students to eat nutritious food as children's meals are solely the responsibility of parents depending on what they have at home. These findings complements with the findings of Akinyemi and Ikuomola (2020) who identified that teacher training programmes often marginalize nutrition-related content, thereby failing to prepare educators for this integral role. It also aligns with the findings of Nwachukwu and Eze (2023) who highlighted a pronounced divide between urban and rural educators, with urban teachers demonstrating superior comprehension of how diet influences academic performance and vitality yet concluded that primary school teachers, due to the nature of training and curriculum of studies they experienced, lack basic attitude and knowledge of nutritional values of food and the necessity of such to the overall development of children at the developing stage.

The test of hypothesis revealed that the hypothesis was accepted because the calculated value of 0.051 was significantly less than the critical value of 1.92; which showed that the mean responses of primary school teacher in both public and private schools on the level of knowledge of teachers on the role of nutrition in pupils' vitality did not significantly differ.

Conclusion

The evaluation of primary school teachers' knowledge regarding the role of nutrition in fostering vitality underscores a crucial nexus between the educational system and child health outcomes. As frontline influencers in the daily lives of young learners, teachers are strategically positioned to shape students' dietary behaviors and health consciousness, both through formal instruction and by modeling positive lifestyle practices. Despite this pivotal role, recent empirical findings suggest that while many educators demonstrate foundational awareness of nutritional principles, significant gaps persist—especially concerning the

nuanced effects of diet on cognitive development, emotional resilience, and the prevention of chronic diseases.

These deficiencies are especially evident in rural and marginalized settings, where barriers such as limited access to ongoing professional development, outdated instructional resources, and insufficient emphasis on nutrition within teacher education programs contribute to a constrained understanding of nutrition science. As a result, the ability of teachers to act as effective health promoters is hindered, particularly at a time when developing nations like Nigeria grapple with the dual burden of undernutrition and the rising prevalence of nutrition-related non-communicable diseases.

To bridge this knowledge gap and harness the full potential of teachers in fostering pupil vitality, it is imperative to institutionalize regular, evidence-informed training on current dietary guidelines and health promotion strategies. Embedding comprehensive nutrition education into both pre-service and in-service teacher training frameworks will enhance instructional capacity and translate into more health-literate school environments. Additionally, strengthening intersectoral partnerships between the education and health ministries, enhancing the reach and quality of school feeding programs, and engaging families and communities in nutrition advocacy can create a more cohesive and sustainable approach.

Empowering teachers with up-to-date nutrition knowledge and practical tools is not merely an educational investment, it is a strategic intervention with far-reaching implications for national development. Improved pupil vitality contributes to better academic performance, reduced absenteeism, and a healthier, more productive future generation, thereby aligning with broader public health and socioeconomic development goals.

Recommendations

Based on the findings from the study, the following recommendations were made.

1. To ensure that future and current teachers understand the foundational role of nutrition in children's physical growth, cognitive development, vitality, and emotional well-being, teacher training institutions should incorporate compulsory courses on nutrition and child health into both pre-service and in-service education programmes.
2. Delta State Ministries of education and school management boards should, as a policy, organize periodic seminars and workshops on nutrition education with the focus on practical applications of food types to ensure balanced diets, and promoting healthy eating behaviors in school settings.
3. Schools should be encouraged to establish partnerships with nutritionists, dietitians, and public health officials to provide expert-led sessions and co-develop learning materials that will make teacher abreast with contemporary nutritional needs of school children.
4. Educational policy-makers should review the primary school curriculum to include structured, age-appropriate nutrition content. This will offer teachers the opportunity to reinforce their knowledge while teaching and also educate pupils on healthy dietary habits.

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