

IMPACT OF NUTRITION EDUCATION ON KNOWLEDGE OF CHILDHOOD OBESITY AMONG PRIMARY SCHOOL TEACHERS IN RURAL BAYELSA COMMUNITY

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Abstracts

Childhood obesity has become one of the most prevalent chronic health problems affecting young people globally, posing serious health risks for affected children that can lead to long-term health complications. The study examined the impact of Basic Nutrition Education Package on knowledge of predisposing factors, health implications and prevention of childhood obesity among primary school teachers in rural Bayelsa community. The pretest-posttest non-equivalent control group quasi-experimental design was used for this study. The population of study comprised all the teachers in both public and private primary schools in Amassoma community in Bayelsa State. Since the population was manageable, the whole population of 86 teachers were used as sample for the study. Respondents were randomly selected and assigned into two groups (experimental group and control group) for the study. The instrument used for collection of data was a self-developed, and validated questionnaire. The content and face validity of the instrument was determined by three professional public health educators. The reliability coefficient of the instrument was 0.87 and established through the test-retest reliability method. Data was collected from the respondents through a three-step process. The pre-test and post-test scores of both the experimental and control groups were analyzed using inferential statistics of Analysis of Covariance through the Statistical Package for the Social Sciences version 30. Multiple Classification Analysis was also carried out to determine the direction of impact of the Basic Nutrition Education Package on the group. The findings revealed that, the Basic Nutrition Education Package had significant impact on knowledge of predisposing, health implications and preventive measures of childhood obesity among the participants. Based on the findings, it was recommended that, the school health programme in the State Ministry of Education be reinforced and made viable to routinely carry out school health education enlightenment programmes that are focused on nutrition literacy, childhood nutritional problems including obesity.

Keywords: Childhood-obesity, food, malnutrition, nutrition, nutrients

Introduction

Obesity among children is a complex public health problem of global significance. Its increasing prevalence in Nigeria is giving the health care system of the nation a serious concern. The prevalence of childhood obesity has been rising at an alarming rate, posing serious health risks for affected children that can lead to long-term health complications (Alanazi, 2023). It poses substantial danger to the physical, emotional, and social well-being of children, including the onset of chronic non-communicable diseases such as type 2 diabetes, hypertension, and other cardiovascular diseases that are associated with high blood cholesterol (World Health Organization, 2022). Childhood obesity is described as a body mass index (BMI) that is higher than the 95th percentile for children of the same age and sex in children below 5 years (Centers for Disease Control and Prevention, 2022). The World Health Organization (WHO) defines childhood obesity as an abnormal or excessive fat accumulation that may impair health. It is a condition in which percentage body fats (PBF) is increased to a

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level that may impair the health and well-being of the child. Childhood obesity is a weight-for-height that is greater than 3 standard deviations above the WHO Child Growth Standards median. Obesity is a condition in which a child is overweight significantly for his or her age and height. It results from an energy imbalance where caloric intake exceeds energy expenditure. The term overweight can sometimes be used interchangeably with childhood obesity, although the term overweight can also refer to a different BMI category. According to Langford et al., (2015), overweight is often used because it is less stigmatizing.

In 2024, over 35 million children under five years were overweight globally (Alanazi, 2023). He further added that, in Africa, the number of overweight children under 5 years has risen by nearly 12.1% since 2000. According to Okunogbe et al., (2022), in US, the prevalence of childhood obesity in 2020 was 12.7%. globally, studies have revealed that, more than 155 million children or 1 in 10 school-aged children are obese. In many developing countries as revealed in studies, childhood obesity is prevalent among those with high socioeconomic levels in urban or metropolitan areas (Abdul-talib et al., 2010). The impact of obesity on the economy of a nation is a crucial aspect that requires significant attention. Agu et al., (2017), further warned that, if nothing is done, the global cost of overweight and obesity are predicted to reach US\$3 million per year by 2030.

Childhood obesity is associated with an increased risk of numerous health issues, including insulin resistance, dyslipidemia, high blood pressure, heart problems, and orthopedic problems, and can lead to psychological challenges such as low self-esteem, mood swings and depression (Daniels et al., 2022). Obesity is usually self-diagnosable, through measurement of the individual's weight and height and calculating the body mass index (BMI). Individuals with obesity may experience common symptoms like overweight, abdominal obesity, binge eating, sedentary lifestyle and shortness of breath. Obesity can influence the quality of living such as sleeping. Management of childhood obesity may include diet modifications, improving the entire family's diet and physical exercise. As affirmed by Oparaocha, (2018), the prevalence of childhood obesity is attributable to a complex interplay of genetic, lifestyle, dietary habits, energy expenditure and other metabolic factors. According to Pulgaron (2013), obesity is a multi-factorial health condition that can also occur as a result of influences from obesogenic environments and psycho-social factors. According to Oduwole et al., (2015), population and settings where structural factors are limiting the availability of healthy sustainable food at affordable prices may experience an increased prevalence of childhood obesity. In rural communities where basic health care services are rarely available, changes in dietary patterns, reduced physical activity, and limited awareness of healthy lifestyle choices may contribute to the rising rates of childhood obesity (Fadare, et al., 2019).

There are several predisposing factors of childhood obesity, Dietary Habits and Nutrition. Poor dietary habits are some of the primary contributors to childhood obesity. The traditional diets are often high in carbohydrates and fats, with staple foods such as yam, cassava, and plantain frequently consumed in large portions (Marsigliante et al., 2022). The increasing availability of processed foods, sugary beverages, and snacks high in salt, sugar, and fat has further worsened dietary quality among children (Ajayi et al., 2018). Studies have shown that frequent consumption of energy-dense foods, combined with low intake of fruits and vegetables, significantly contributes to excessive weight gain in children (Sahoo et al., 2015). Physical inactivity is a critical factor contributing to childhood obesity. According to Wang and Lim (2012), the modern lifestyle, characterized by increased screen time, such as television viewing, video gaming, and smartphone usage, has replaced outdoor play and physical activities, contributing to a sedentary lifestyle among children. Socioeconomic status (SES) is a significant factor that determines of childhood obesity, influencing access to healthy foods, healthcare, and recreational opportunities. In rural communities, many families face economic challenges that limit their ability to provide balanced and nutritious meals. Low-

income families often rely on inexpensive, calorie-dense foods, contributing to an increased risk of obesity in children (Kelishad et al., 2007).

Cultural beliefs and environmental factors can significantly influence dietary habits and lifestyles that can lead to increased body weight. In some Nigerian cultures, a larger body size is associated with health, wealth, and prosperity, leading to the normalization of overweight and obesity (Ekezie et al., (2020). These cultural perceptions can hinder efforts to promote healthy body weight, as parents and community members may not view obesity as a problem. The local food environment in Amassoma, characterized by numerous street vendors selling high-calorie snacks and sugary drinks, further contributes to unhealthy eating habits among children.

Nutrition education is a combination of learning experiences structured to teach individuals or groups the basic principles of balanced diet, the significances of various nutrients, patterns of healthy choice of food and the place of dietary and physical exercise in the holistic well-being and health (Krishnaswamy, & Dudeja, 2020). According to Selamat et al., (2025), it incorporates educational strategies, with environmental supports, designed to encourage informed decisions about the choice of food and other nutrition-related behaviours that could be promote sustainable state of well-being that enables the individual live a productive life in the community. Nutrition education programmes could be delivered in various platforms involving several activities at the individual, community, institutional and policy levels with a focus on looking at food security, food literacy and food sustainability (Pallan, & Adad, 2023).

By exposing teachers to nutrition education programme within the school environment, their knowledge on childhood nutritional problem including childhood obesity will improve, thereby enabling them to play that pivotal role in shaping children's behaviours and attitudes toward health and nutrition (Onyiriuka et al., 2013). Nutritional education programmes can position the teacher as a potential change agent with basic nutritional knowledge to address the menace of childhood obesity by influencing children's eating habits, physical activity levels and overall health literacy (Reyes et al., 2019). Their awareness and attitudes towards obesity and its predisposing factors can shape their teaching practices and interactions with students.

The prevalence of childhood obesity in Nigeria has been rising, particularly in urban areas. Factors such as changes in dietary patterns, cultural, environmental factors, reduced physical activity, and increased sedentary lifestyles contribute to this trend (Odeyinka et al., 2016). Bayelsa state, particularly the Southern Ijaw Local Government Area, has experienced significant changes in life and dietary patterns, contributing to the increased rates of childhood obesity. The situation in Amassoma community where the study was carried out became so pronounced and worrisome, since the establishment of the Niger Delta University, in 2002. While rural communities might traditionally have lower rates of obesity due to more physically demanding lifestyles and traditional diets, but with the penetration of different types of processed fast foods and diverse categories of eateries that sell junk foods to the public and sedentary behaviours that occasioned a conventional university environment, the dynamics of the normal lifestyle including the food choices of the people have been altered.

According to Owoseyi, (2017), there is limited research on childhood obesity in rural Nigerian communities, including Bayelsa State and Amassoma community in particular. National survey results showed that Bayelsa has the highest under five overweight prevalence rates compared to other states of Nigeria (Owoseyi, 2017). According to the survey report, Bayelsa State has 2.9 percent prevalent rate, followed by Nasarawa and Taraba States with 2.4 percent each. In Amassoma, Southern Ijaw Local Government in Bayelsa State, the prevalence of childhood obesity appears to be increasing (Ogoun, et al., 2022). With the significant role played by teachers as mentioned above, it becomes pertinent to ascertain the knowledge of primary school teachers regarding the predisposing factors, health implications and

preventive measures of childhood obesity. There is also a limited information on their understanding on the factors that contribute to childhood obesity (Agu et al., 2017). Therefore, this study investigated the impact of nutrition education programme on knowledge of predisposing factors, health implications and prevention of childhood obesity among primary school teachers in Amassoma Bayelsa State. The study was carried out to examine the impact of nutrition education programme on knowledge of predisposing factors, health implications and prevention of childhood obesity among primary school teachers in rural Bayelsa community.

Hypotheses

Three hypotheses were postulated to guide the study, which were tested at 0.05 level of significance and they include

1. There is no significant impact of basic nutrition education package (BNEP) on knowledge of predisposing factors of childhood obesity among primary school teachers in a rural Bayelsa community.
2. There is no significant impact of basic nutrition education package (BNEP) on knowledge of health implications of childhood obesity among primary school teachers in a rural Bayelsa community.
3. There is no significant impact of basic nutrition education package (BNEP) on knowledge of preventive measures of childhood obesity among primary school teachers in a rural Bayelsa community

Methodology

The pretest-posttest non-equivalent control group quasi-experimental design was used for this study. This design provides the opportunity for the comparison of two groups, one exposed to the intervention protocol (experimental group) and another not exposed (control group) to determine the impact of the intervention. The interventional protocol designed for the study is described as the Basic Nutrition Education Package (BNEP). The population of study comprised all the teachers in both public and private primary school in Amassoma community in Bayelsa state, which according to the Local Government Authority, was 86 teachers as at February 2025. The participation both private and public primary school teachers was aimed at making the result of the study more inclusive. Amassoma as a rural community was selected for this study because of the pronounced change in lifestyle and behaviours including eating habit of the people that resulted from the establishment of the Niger Delta University. Amassoma is the hub of the Wilberforce Island and the host community of the Niger Delta University. Since the population was manageable, the whole population was used as sample for the study. For convenience, the respondents were randomly assigned into two groups for the study, in accordance with the 2 streams of primary school teachers created for Amassoma community by the State Universal Basic Education board for capacity building training in Southern Ijaw Local Educational Authority. These 2 streams were created in line with the existing political wards within the community, ward 1(stream-1) and ward 2 (stream-2). A written letter of permission was obtained from the Education Secretary of Southern Ijaw Local Education Authority and the study participants (primary school teachers) also gave their consent before the study was carried out. Stream 1 had 40 primary school teachers and was assigned as the control group while stream 2 had 46 primary school teachers and was assigned as the experimental group

The instrument used for the collection of data for the study was a self-developed, and validated questionnaire titled, "Knowledge of Predisposing factors, Health Implications, and Prevention of Childhood Obesity Questionnaire (KPHPCOQ)". The questionnaire had sections A and B. Section A was for respondents' demographic data while section B was to elicit the knowledge of respondents on predisposing factors, health implications and

preventive measures of childhood obesity. The content and face validity of the instrument was determined by three experts in the field of public health education. The reliability coefficient of the instrument was established through the test-retest reliability method. The instrument was administered twice to 20 primary school teachers of Reverend Proctor Memorial Primary School, in Kaiama community in Kolokoma/Opokuma LGA with an interval of two weeks. The data obtained were analyzed using Pearson Product Moment Correlation and a reliability coefficient of 0.87 was established which was considered appropriate for the instrument to be used for the study. A lesson guide was also developed and used for the study in line with the content of the Basic Nutrition Education Package (BNEP). The Basic Nutrition Education Package (BNEP) had a content ranging from meaning of nutrition, types of nutrients, malnutrition, nutritional disorders, obesity, childhood obesity, risk factors of childhood obesity, health and socio-economic implications of childhood obesity, preventive measures of childhood obesity, role of teachers in managing childhood obesity. Mode of delivery of the lessons were direct instruction, discussion, demonstration and brainstorming. Specific objectives were set, and evaluation was conducted at the end of lesson session.

Data were collected from the respondents through a three-step process. Step one was carried out before the intervention protocol (pretest), step two was the administration of the intervention protocol (BNEP), while step three was done after the intervention package (post-test). Before the intervention protocol (Basic Nutrition Education Package (BNEP) was administered in day 1 of the training, baseline data were collected from the two groups through the administration of the questionnaire that formed the pre-test scores. The experimental group (Stream 2 teachers) was taught with the lesson guide on basic nutrition for 3 weeks and in the fourth week, revision and evaluation were carried out in line with the specific objectives. As structured in the study, the control group (Stream 1 teachers) was given no treatment. Each lesson session lasted for 30 minutes and were scheduled after the normal training hours of the State Universal Basic Education Board capacity building training programme designed for primary school teachers in Southern Ijaw Local Education Authority, Bayelsa State. The researchers were assisted by four trained research assistants who were facilitators of the capacity building programme.

These four trained research assistants taught the respondents the content of the basic nutrition education package (BNEP) for the three weeks with two handling each center. The same instrument (questionnaire) used to obtain the baseline data was administered again to both the experimental and control group at the end of the four weeks, after the revision and evaluation to obtain the post-test scores. The pre-test and post-test scores of both the experimental and control groups were analyzed using inferential statistics of Analysis of Covariance (ANCOVA) through the (Statistical Package for the Social Sciences) SPSS version 30, to test the null hypotheses set at 0.05 level of significance using pretest as covariance. Multiple Classification Analysis (MCA) was also carried out to determine the direction of impact of the basic nutrition education package (BNEP) on the groups, including the proportion of the variance as highlighted by the intervention package.

Results

Analysis of Demographic Data

Table 1. Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Female	52	60.5
Male	34	39.5
Total	86	100

Table 1 showed gender distribution of respondents. The data revealed that majority of participants were females 52 representing 60.5% of respondents, while males 34 representing 39.5% of respondents.

Table 2: Distribution of respondent in streams

Streams	Frequency	Percentage (%)
Stream 1	40	46.5
Stream 2	46	53.5
Total	86	100

The data in table 2 revealed that, majority of respondents 46 (53.5%) were assigned to stream 2 (experimental group), while 40 (46.5%) were assigned to stream 1 (control group).

Analysis of Hypotheses

Hypothesis One: There is no significant impact of basic nutrition education package (BNEP) on knowledge of predisposing factors of childhood obesity among primary school teachers in a rural Bayelsa community.

Table 3a Summary of ANCOVA analysis on impact of Basic Nutrition Education Package (BNEP) on knowledge of predisposing factors of childhood obesity among primary school teachers (N=86)

Source	Sum of square	Df	Mean square	F	Sig.
Covariates	1.043	1	1.043	0.69	.037
Treatment	2332.415	1	2332.415	116.132	.005
Explained	2441.012	2	2543.101	58.531	.006
Residual	3261.083	84	29.151		
Total	5,702.095	86			

The ANCOVA analysis in table 3a showed that, there was significant knowledge of predisposing of childhood obesity among primary school teachers after the basic nutrition education package (BNEP) as the p-value was less than 0.05 (p-value < 0.05). Since a significant difference was observed (p-value < 0.05), the null hypothesis was rejected, hence there is significant impact of basic nutrition education package (BNEP) on knowledge of predisposing factors of childhood obesity among primary school teachers in a rural Bayelsa community. To ascertain the direction of the impact, a multiple classification analysis was carried out and presented as table 3b below, which gave the mean scores of both groups as experimental group = 89.79 and control group=53.38. Since the mean score of the experimental group is greater than the control group, it means that the experimental group had better knowledge than the control group of predisposing factors of childhood obesity after exposure to the basic nutrition education package (BNEP). The researchers then concluded that, the Basic Nutrition Education Package (BNEP) had significant impact on knowledge of predisposing of childhood obesity among primary school teachers in a rural Bayelsa community.

Table 3b: Multiple classification analysis (MCA) showing the direction of impact between the experimental and control groups

Variable +category	N	Unadjusted variation	Eta	Adjusted for independent covariates deviation	Mean value	Beta
grand mean=74.52						
Groups						
Experimental group		4.15		2.18	89.79	
Control group		-4.78		-4.76	53.38	
			.53			.52

Multiple R-squared	.516
Multiple R	.475

Hypothesis Two: There is no significant impact of basic nutrition education package (BNEP) on knowledge of health implications of childhood obesity among primary school teachers in a rural Bayelsa community.

Table 4a: Summary of ANCOVA analysis on impact of basic nutrition education package (BNEP) on knowledge of health implications of childhood obesity among primary school teachers (N=86)

Source	Sum of square	Df	Mean square	F	Sig.
Covariates	11.164	1	11.164	1.548	.008
Treatment	306.140	1	306.140	14.643	.038
Explained	349.451	2	345.497	11.074	.046
Residual	1,536.217	84	25.431		
Total	1,885.668	86			

The ANCOVA analysis in table 4a revealed a significant impact of basic nutrition education package (BNEP) on knowledge of health implications of childhood obesity among primary school teachers as the p-values was less than 0.05(p-value < 0.05). Since a significant difference was recorded (p-value < 0.05), the null hypothesis was rejected, hence, there was significant impact of basic nutrition education package (BNEP) on knowledge of health implications of childhood obesity among primary school teachers in a rural Bayelsa community. To establish the direction of the difference, a multiple classification analysis (MCA) was carried out and presented as table 4b below, indicating the mean scores of both groups, as experimental group = 46.85 and control group=29.79. Since the mean score of the experimental group is greater than the control group, it means that the experimental group had better knowledge of health implications of childhood obesity, after the Basic Nutrition Education Package (BNEP). The researchers then concluded that, the Basic Nutrition Education Package (BNEP) had significant impact on knowledge of health implications of childhood obesity among primary school teachers in a rural Bayelsa community.

Table 4b: Multiple classification analysis (MCA) showing the direction of impact between the experimental and control groups

Variable +category grand mean=34.52	N	Unadjusted variation	Eta squared	Adjusted for independent covariates deviation	Mean value	Beta
Groups						
Experimental group		1.39		1.57	46.85	
Control group		-4.46		-4.45	29.79	
			.19			.15
Multiple R-squared						.113
Multiple R						.275

Hypothesis Three: There is no significant impact of basic nutrition education package (BNEP) on knowledge of preventive measures of childhood obesity among primary school teachers in a rural Bayelsa community.

Table 5a: Summary of ANCOVA analysis on impact of Basic Nutrition Education Package (BNEP) on knowledge of preventive measures of childhood obesity among primary school teachers (N=86)

Source	Sum of square	Df	Mean square	F	Sig.
Covariates	1.052	1	1.052	0.72	.044
Treatment	2456.216	1	2641.005	121.213	.024
Explained	2652.014	2	2543.101	49.553	.014
Residual	4143.091	84	29.151		
Total	6,795.105	86			

The ANCOVA analysis in table 5a showed that, there was significant impact of Basic Nutrition education Package (BNEP) on knowledge of preventive measures of childhood obesity among primary school teachers as the p-value was less than 0.05 (p-value < 0.05). Since a significant impact was observed (p-value < 0.05), the null hypothesis was rejected, hence there is significant impact of basic nutrition education package (BNEP) on knowledge of preventive measures of childhood obesity among primary school teachers in a rural Bayelsa community. To ascertain the direction of the impact, a multiple classification analysis (MCA) was carried out and presented below in table 5b which gave the mean scores of both groups as experimental group = 78.64 and control group = 41.22. Since the mean score of the experimental group is greater than the control group, the researchers concluded that the experimental group had better knowledge than the control group of preventive measures of childhood obesity.

Table 5b: Multiple classification analysis (MCA) showing the direction of impact between the experimental and control groups

Variable +category	N	Unadjusted variation	Eta	Adjusted for independent covariates deviation	Mean value	Beta
grand mean=74.52						
Groups						
Experimental group	3.45			3.09	78.64	
Control group	-3.89			-5.67	41.22	
			.53			.52
Multiple R-squared						.516
Multiple R						.475

Discussion

This study was carried out to examine the impact of Basic Nutrition Education Package (BNEP) on knowledge of predisposing factors, health implications and prevention of childhood obesity among primary school teachers in rural Bayelsa community. The findings revealed that, the Basic Nutrition Education Package (BNEP) had significant impact on knowledge of predisposing of childhood obesity among primary school teachers in a rural Bayelsa community. Since the mean score of the experimental group is greater than the control group, it means that the experimental group had better knowledge than the control group of predisposing factors of childhood obesity after exposure to the basic nutrition education package (BNEP), as shown in tables 3a and b. This finding affirms the fact that nutrition education programmes are also designed for the nutritional benefits of the teachers, who are the role models and coaches to the students and learners and have the responsibility to infuse in them the expected nutritional literacy that could bring about healthy food choices that promote good health status. This finding was not surprising and was expected because, according to Ajayi et al., (2018), by exposing teachers to nutrition education programme

within the school environment, their knowledge on childhood nutritional problem will be improved, thereby enabling them to play that pivotal role in shaping children's behaviours and attitudes toward health and nutrition. This finding is in agreement with the findings of Onyiriuka et al., (2013), who also observed a significant improvement in knowledge on teachers' perception and knowledge of childhood obesity in Benin City, Nigeria. This finding is further supported by the finding of Ekezie, et al., (2020), who equally affirmed a significant influence in their study on parental status and knowledge of childhood obesity among teachers in Nigeria. However, the findings of Agu et al., (2017), contradicted this finding. They concluded in their study on nutrition education and knowledge of childhood obesity among primary school teachers in Enugu State, that nutrition education can impact on knowledge of childhood obesity among primary school teachers.

The findings also revealed that the Basic Nutrition Education Package (BNEP) had significant impact on knowledge of health implications of childhood obesity among primary school teachers in a rural Bayelsa community as shown in table 4a and b. Since the mean score of the experimental group is greater than the control group, it implies that, experimental group had better knowledge of health implications of childhood obesity, after exposure to the Basic Nutrition Education Package (BNEP). This finding was not surprising and was expected considering the fact that, nutrition education is designed to arm individuals with knowledge and skills to make informed decisions and take responsible action concerning their nutritional status and other aspects of wellbeing. The above finding is in agreement with the study findings of Agu et al., (2017), who affirmed that exposing teachers to nutrition education programme within the school environment, their knowledge on childhood nutritional problem including childhood obesity will improve, thereby enabling them to play that pivotal role in shaping children's behaviours and attitudes toward health and nutrition. Moreover, this finding is not in agreement with Reyes & Hodge, (2019), who reported no significant influence on their study on teachers' knowledge and attitudes towards childhood obesity; implications for school base interventions.

The result in tables 5a and b revealed that, the Basic Nutrition Education Package (BNEP) had significant impact on knowledge of preventive measures of childhood obesity among primary school teachers in a rural Bayelsa community. Since the mean score of the experimental group is greater than the control group, it means that the experimental group had better knowledge than the control group of preventive measures of childhood obesity after exposure to the Basic Nutrition Education Package (BNEP), as shown in tables 5a and b. This finding affirms the fact that nutrition education programmes implemented within the school environment could create a significant behaviour change among individuals that have the potential to prevent both staff and students from becoming obese, diabetic, and developing cardiovascular diseases, and negative emotional issues by educating them on healthy dieting, emphasizing the consumption foods that are low in fats, fruits and vegetables (Wang & Lim, 2012). This finding was expected and not surprising because, by exposing teachers to scheduled nutrition education programme, they would have the potentials to provide students with foundational knowledge on nutrition, physical activity, and healthy lifestyles that are structured to promote good health and reducing the prevalence of childhood obesity (Slusser et al., 2021). This finding is in agreement with the findings is in consonant with Selamat et al., (2025), who also recorded a significant influence nutrition education programme on knowledge of prevention and management of childhood obesity in their study on effects of a nutrition education intervention on knowledge and attitude among overweight and obese primary schoolchildren. Marsigliante et al., (2022) also give credence to this finding, by affirming a significant influence in their study on efficacy of school-based intervention programme in reducing overweight. However, the finding of Pallan & Adad, (2023); Abdul-talib et al., (2010), were in variance with this finding as they observed in their separate studies that nutrition education has no significant on knowledge of prevention of childhood obesity

among primary school students. This disagreement might be attributed to the fact that, their studies were done among primary school children which is different from the population of the current study.

Conclusion

From the study findings it was concluded that, the Basic Nutrition Education Package (BNEP) had significant impact on knowledge of predisposing, health implications and preventive measures of childhood obesity among primary school teachers in a rural Bayelsa community. This simply implies that, the knowledge of predisposing factors, health implications and preventive measures of childhood obesity could be greatly improved if individuals are well informed through a well-structured nutrition education programme.

Recommendations

Based on the conclusion above the following measures were recommended:

1. The school health programme in the State Ministry of Education be reinforced and made viable to routinely carry out school health education enlightenment programmes that are focused on nutrition literacy, childhood nutritional problems including obesity.
2. The social mobilization unit of the Primary Health Care Department in the Unified Local Government system should regularly carry out school out-reach programmes that are centered on improving and sustaining teachers' and learners' knowledge of childhood nutritional problems and how to management them within and outside the school environment.
3. Donor agencies such as UNICEF can also collaborate with the state ministry of education to train primary school teachers on basic nutrition, with special focus on childhood nutrition including malnutrition and obesity

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