



(RESEARCH ARTICLE)



Effect of health education intervention on preventive health practices among Christian rural women in Delta State

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Abstract

The study determined the effect of health education intervention on preventive health practices among Christian rural women in Delta State, Nigeria. Six research questions were raised and answered. Six hypotheses formulated and tested at 0.05 level of significance. Quasi-experimental design was adopted for the study. The population of this study consists of 2,718, 145 women in all the 25 Local Government Areas of Delta State. The sample of the study consist of 120 Christian women from six rural communities in six Local Government Area of Delta State. The sample size was drawn from the entire population using a multi-stage sampling technique. Preventive Health Practices Multiple Choice Test (PHPMCT) was used for data collection. Three experts validated the instruments and the reliability was carried out using the test-retest method. The reliability coefficient of 0.850 was obtained for the instrument. To collect data for the study the Health Education Intervention and the control groups were given pre-test using the Preventive Health Practices Multiple Choice Test (PHPMCT). After six weeks of health education intervention, the Preventive Health Practices Multiple Choice Test (PHPMCT) was re-administered to all the participants in both groups. Data were analysed using mean scores and standard deviation scores while the t-test and analysis of Covariance (ANCOVA) were used to test the hypotheses at alpha level of 0.05 significance. The findings of the study include. there was no significant difference in the pre- test experimental and pre-test control groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria; there was significant difference in the post-test and pre-test experimental groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria.; there was significant difference in the post-test experimental and post-test control groups on preventive health practices scores of health education intervention among Christian rural women. Based on the findings it was recommended that Health workers should offer health education and preventive guidance to individuals during the check-up and screening process and emphasize the importance of early detection and healthy lifestyle choices.

Keywords: Health education intervention; Preventive health practices Christian; Rural Women

1. Introduction

The world has witness improvement of health growth in the twentieth century. The objective has involved a global view of the promotion of health and prevention of disease. A focus on Rural Community Health was central to this approach. Women constitute a major part of our society, due to various socio-cultural factors women are active participants in the society. All poor women have difficulty obtaining needed health services due to their inability to pay for services. Health Education is a preventive measure in reducing morbidity and mortality due to spread of diseases. It is one strategy for implementing health promotion and disease prevention programme. Health education interventions have been shown to be effective in improving health knowledge and practices among various populations. These interventions can take various forms, including community health workshops, educational materials, training sessions, and the use of local media. For rural women, especially those in religious communities, integrating health education into their existing social

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structures, such as church groups, can be particularly effective. Churches and religious leaders often hold significant influence in rural communities, making them valuable partners in health promotion efforts (World Health Organization, 2013). One of the ultimate goal of Health Education Interventions is to enhance preventive health practices.

Preventive health practices are actions meant to safeguard, uphold, or maintain health and wellbeing while also assisting in the prevention of illness, disability, or death (Lui, Ren & Gao, 2016). Preventive health practices include the use of approved proactive health screenings, counselling, and maintenance in order to avoid future sickness from and treatment. In the long term, preventive healthcare practices lower healthcare costs for both patients and insurance providers while also improving patient outcomes (Genetic Alliance, 2019). One of the primary benefits of preventive health practices is the early detection and management of diseases. Regular health screenings and check-ups can identify potential health issues before they become severe. For instance, early detection of hypertension and diabetes can lead to timely interventions that prevent complications such as heart disease and kidney failure.

A study by Smith et al. (2022) found that routine screenings significantly reduced the incidence of late-stage cancer diagnoses, thereby improving survival rates and reducing treatment costs. Preventive health practices also have significant economic benefits. By reducing the incidence of diseases and their associated complications, these practices can lower healthcare costs for individuals and health systems. A report by the Institute for Health Metrics and Evaluation (2022) emphasized that investments in preventive health can lead to substantial savings by decreasing the need for costly treatments and hospitalizations. Preventive health practices contribute to increased life expectancy and improved quality of life. When individuals engage in healthy behaviors and undergo regular health screenings, they are more likely to enjoy longer, healthier lives. The Global Burden of Disease Study (2022) highlighted that countries with robust preventive health programs have higher life expectancies and better health outcomes compared to those with less emphasis on prevention. These advantages typically persuade healthcare insurance companies to pay for health precautions. Preventive health practices concentrate on disease, damage, and patient illness that are avoidable yet can be detected early (Target, 2022). Aside from regularly advised healthy diet and exercise, physicians use other preventative health measures. By using early screenings, warning signs for many health conditions can be detected and the conditions prevented or their impact reduced if they are found early. Lack of preventive health practises are considered threats to the progress and well-being of rural women. Preventive health practices, such as regular medical check-ups, vaccination, proper hygiene, nutrition, and family planning, are essential for maintaining good health and preventing diseases.

Despite the importance of these practices, many rural women in Delta State are not adequately informed or equipped to adopt them. This gap in knowledge and practice can lead to increased vulnerability to health issues such as maternal and child mortality, infectious diseases, and malnutrition. The rationale for this study, according to Criminal Intelligent Agency (CIA), cited by Uju (2014), viewed Nigeria literacy rate at 61.3%, it recorded 72.1% male literacy rate and 50.4/% female literacy rate, extremely low literacy rate are focused in Sub-Sahara Africa. The literacy challenge is more pronounced in rural communities, according to National Bureau of Statistics (2019), the literacy rate among females is relatively low as compared to males. Based on this low preventive health practices has remained a major problem in Nigeria including Delta State among Christian rural women, resulting in high disease burden and increases in maternal mortality; the belief that improving the application of preventive health practices will have positive consequences on women's and children's wellbeing in rural areas; and the belief that the only way to address the problem is through Health Education Intervention.

Health education intervention refers to organized efforts to inform and educate individuals or communities about health-related topics to improve their health behaviors and outcomes. These interventions are designed to increase awareness, impart knowledge, and promote attitudes and practices that can lead to healthier lifestyles and the prevention of diseases. Health education interventions can be implemented through various methods and are often tailored to meet the specific needs of the target population (Nutbeam, 2000). Health education interventions have been shown to be effective in improving health knowledge and practices among various populations. These interventions can take various forms, including community health workshops, educational materials, training sessions, and the use of local media. For rural women, especially those in religious communities, integrating health education into their existing social structures, such as church groups, can be particularly effective (Schillinger et al as cited by Hou 2014). Churches and religious leaders often hold significant influence in rural communities, making them valuable partners in health promotion efforts. The focus of this study is to evaluate the impact of health education interventions on the preventive health practices of Christian rural women in Delta State.

1.1. Statement of the Problem

Rural women play a major role in supporting their households and communities generally, in providing food, generating income and improving rural livelihoods and overall well-being. The rural dwellers in Nigeria especially women in Delta State have many health-related problems that militate against their successful contributions towards the development of the State and the country at large. The problems could be seen in the areas of economic, social, cultural and political levels, which could be eradicated or minimized through Health Education Intervention. People with a low level of Health Literacy tend to have poor health and a high incidence of chronic diseases. In addition, their level of application of preventive health practises is low and incurs more medical costs. People with poor Health Literacy are less likely to understand health information and follow instructions than those with good health literacy. Some studies have found that Health Literacy among women is at a low level (Liu et al 2020). Studies have also indicated that the most critical method for increasing Health Literacy and reducing health related problems is through Health Education. Poor health information can prevent rural women from making effective choices and without information, people have no choices of their own.

Lack of required and positive health information can be damaging to rural women, their family and the entire society. In addition, low Health Literacy level may also contribute to socio-economic disadvantages that may prevent the rural women from fully engaging themselves productively in the society, and achieving their life goals. Women who live in rural areas potentially have lower health literacy. The question which this study seeks to find answer to this; will the effect of Health Education Intervention produce positive effect on Health Literacy and Preventive Health practices of Christian rural women in Delta State?

1.2. Research Questions

The following research questions were guided in this study

- What is the difference in the pre-test experimental group and the pre-test control group on Preventive Health Practices scores of Health Education Intervention among Christian rural women in Delta State of Nigeria?
- What is the difference in the post-test and pre-test experimental groups on Preventive Health Practices scores of Health Education among Christian rural women in Delta State of Nigeria?
- What is the difference in the post-test experimental and post-test control groups on Preventive Health Practices scores of Health Education among Christian rural women in Delta State of Nigeria?

1.2.1. Hypotheses

The following hypotheses were formulated to guide this study.

- There will be no significant difference in the pre-test experimental and pre-test control groups on preventive health practice scores of Health Education Intervention among Christian rural women in Delta State of Nigeria.
- There will be no significant difference in the post-test and pre-test experimental groups on preventive health practice scores of Health Education Intervention among Christian rural women in Delta State of Nigeria.
- There will be no significant difference in the post-test experimental and post-test control groups on preventive health practice scores of Health Education Interventions among Christian rural women in Delta State of Nigeria

1.2.2. The Purpose of the Study

- assess the difference in the pre-test experimental and pre-test control groups on Preventive health practices scores of Health Education Intervention among Christian rural women in Delta State of Nigeria.
- assess the difference in the post-test and pre-test experimental groups on Preventive health practices scores of Health Education Intervention among Christian rural women in Delta State of Nigeria.
- assess the difference in the post-test experimental and post-test control groups on Preventive health practices scores of Health Education Intervention among Christian rural women in Delta State of Nigeria.

1.2.3. Significance of the Study

This study will be beneficial to policy makers who will address women's low social status and ensure that girls have access to education, which will include information on Health Literacy, such policy measures can help improve their own health and that of their families, and contribute to societal development. It will be beneficial to nurses and other health care professionals in providing patient/community centered care that will aid the development of nurse based interventions for health literacy optimization.

2. Research Method

The research design that was adopted for this study is the Quasi-Experimental Design involving a pre-test, post-test and control group. The population of study consist of 2,718,145 women in all 25 local Government Areas of Delta State, according to 2006 National Population Census figures. However, since it will be difficult to obtain the exact population of rural Christian women due to a lack of reliable records of the actual number of Christian women in Delta State, the total estimated population for this study was 1,200 rural Christian women.

The sample size for the study will consist of 120 rural Christian women from six rural communities in six local government areas of Delta State. This represents 10% of the estimated population for this study. The sample size was drawn from the entire population using a multi-stage sampling technique. At the first stage, six local government areas, which represent 25% of all the local government areas in each of the three senatorial districts in Delta State, was selected using a stratified random sampling technique. The stratification was based on senatorial districts (Delta North, Central, and South). Two local government areas from each senatorial district—Ukwuani, Ika South, Ethiope East, Ughelli North, Isoko North, and Patani Local Government Areas—was sampled.

At the second stage, one rural community was selected from each of the selected local government areas using random sampling techniques, making it six rural communities that was selected for this study. At the third stage, two churches was selected from each of the selected rural communities, making 12 churches for the study. The church was sampled using the purposive sampling method. Purposive sampling techniques was used because the researcher needs churches that meet certain criteria. The criteria include: (1) a church that has a similar denomination in all the sampled wards; and (2) a church that has an organised women's group. At the final stage, one group of women in their intact form was sampled from each church assigned to the experimental and control groups.

Preventive Health Practices Multiple Choice Test Questions (PHPMCTQ) was used to collect data for the study. The Preventive Health Practices Multiple Choice Test was used to collect pre-intervention and post intervention data. The instrument consisted of 20 multiple choice test items with option A-D on Preventive Health Practices Multiple Choice Test (PHPMCT). Three experts validated the Preventive Health Practices Multiple Choice Test (PHPMCT). Two from the Department of Health and Safety Education, Delta State University Abraka, and the third expert is from the Measurement and Evaluation Department. The experts were asked to confirm the face and content validities of the instruments. All the suggestions and corrections made by the reviewers were effected in the research instruments. The reliability of the instruments was carried out using the test-retest method. The instrument administered to twenty-five (25) women from five rural communities in Edo State. After a period of two weeks of administration, the same set of items were re-administered to the same twenty-five (25) rural Christian women from five rural communities in Edo State, and the data collected from two the separate administrations of the instrument were used to compute the reliability of the instruments. The reliability test was estimated using Pearson Product Moment Correlation Coefficient (r). This gave a correlation coefficient $r = .850$, $p < .05$ was obtained for the entire items in Preventive Health Practices Multiple Choice Test (PHPMCT). This reliability index was considered high enough for the study and so the instrument is highly reliable. The data were analysed using Descriptive Statistics. The responses to the research questions were analysed using mean scores and standard deviation scores while the research hypotheses were tested using t-test. All hypotheses were tested at 0.05 alpha levels of significance.

3. Presentation of Results

3.1. Research Question 1

What is the difference in the pre-test experimental and pre-test control group on preventive health practices score of health education intervention among Christian rural women in Delta State Nigeria?

Table 1 Descriptive statistics of the pre-test experimental and pre-test control group on preventive health practices scores of health education intervention among Christian rural women

Group	N	Mean	SD	Mean difference
Pre-test Experimental Group	70	10.89	3.84	0.17
Pre-test Control Group	50	11.06	2.55	

Table 1, show the mean of the pre-test experimental group of 10.89 ± 3.84 , while the pre-test control group had a mean of 11.06 ± 2.55 and a mean difference of 0.17. This revealed a very weak preventive health practices scores of health education intervention among Christian rural women when exposed to pre-test experimental and pre-test control group.

3.2. Research Question 2

What is the difference in the post-test and pre-test experimental group on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria?

Table 2 Descriptive statistics of post-test and pre-test experimental group on preventive health practices scores of health education intervention among Christian rural women

Group	N	Mean	SD	Mean difference
Pre-test Experimental Group	70	15.21	3.67	4.33
Pre-test Experimental Group	70	10.89	3.84	

Table 2, Indicate the mean of post-test experimental group was 15.21 ± 3.67 while the mean score for the pre-test experimental group of 10.89 ± 3.84 and a mean difference of 4.33 This shows a positive preventive health practices scores of health education intervention among Christian rural women when exposed to post-test and pre-test experimental groups.

3.3. Research Question 3

What is the difference in the post-test experimental and post –test control group on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria?

Table 3 Descriptive statistics of post-test experimental and post–test control group on preventive health practices scores of health education intervention among Christian rural women

Group	N	Mean	SD	Mean difference
Pre-test Experimental Group	70	15.21	3.67	8.26
Pre-test Control Group	50	6.92	1.47	

Table 3, shows the mean of the Post-test experimental group of 15.21 ± 3.67 , while the mean of Post-test control group was 6.92 and the standard deviation of 1.47 and the mean difference of 8.29. This shows a positive difference in the post-test experimental and post–test control group on preventive health practices scores of health education intervention among Christian rural women.

3.4. Testing of Hypotheses one

3.4.1. Hypothesis 1

There is no significant difference in the pre- test experimental and pre-test control groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria.

Table 4 Independent t-test analysis of pre- test experimental and pre-test control groups on preventive health practices scores of health education intervention among Christian rural women

Group	N	Mean	SD	df	t	Sig. {2 tailed}
Pre-test Experimental Group	70	10.89	3.84	118	0.280	0.780
Pre-test Control Group	50	11.06	2.55			

The result in table 4, revealed the t-value of 0.280 and a p-value of 0.780. Testing the null hypothesis at an alpha level of 0.05, the p-value of 0.780 was greater than the alpha level of 0.05. However, the null hypothesis was accepted. This shows that there was no significant difference in the pre-test experimental and pre-test control groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria.

3.4.2. Hypothesis 2

There is no significant difference in the post-test experimental and pre-test experimental groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria.

Table 5 Independent t-test analysis of post-test and pre-test experimental groups on preventive health practices scores of health education intervention among Christian rural women

Group	N	Mean	SD	df	t	Sig. {2 tailed}
Pre-test Experimental Group	70	15.21	3.67	69	8.967	0.000
Pre-test Experimental Group	70	10.89	3.84			

The result in table 5, shows the t-value of 8.967 and a p-value of 0.000. Testing the null hypothesis at an alpha level of 0.05, the p-value of 0.000 was less than the alpha level of 0.05. Therefore, the null hypothesis was rejected. This shows that there was significant difference in the post-test and pre-test experimental groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria.

3.4.3. Hypothesis 3

There is no significant difference in the post-test experimental and post-test control groups on preventive health practices scores of health education intervention among Christian rural women in Delta State Nigeria.

Table 6 Independent t-test analysis of post-test experimental and post-test control groups on preventive health practices scores of health education intervention among Christian rural women

Group	N	Mean	SD	df	t	Sig. {2 tailed}
Pre-test Experimental Group	70	15.21	3.667	118	15.14	0.000
Pre-test Control Group	50	6.92	1.469			

The result in table 6, shows the t-value of 15.14 and a p-value of 0.000. Testing the null hypothesis at an alpha level of 0.05, the p-value of 0.000 was less than the alpha level of 0.05. Hence, the null hypothesis was rejected. This revealed that there was significant difference in the post-test experimental and post-test control groups on preventive health practices scores of health education intervention among Christian rural women.

4. Discussion of Results

The findings of this study were discussed under the following subheading.

4.1. Pre-Test Experimental and Pre-Test Control Groups On Preventive Health Literacy Scores of Health Education Intervention Among Christian Rural Women in Delta State Nigeria.

The finding from hypothesis 1, revealed that there was no significant difference in the Pre-Test Experimental and Pre-Test Control Groups On Preventive Health Literacy Scores of Health Education Intervention Among Christian Rural Women in Delta State Nigeria. The lack of exposure to such interventions may have contributed to the expected outcome. Consequently, the findings of this study underline the significance of implementing effective health education programs specifically targeting rural women. By providing them with access to accurate and relevant information, these interventions can empower rural women and enable them to make informed choices about their health and well-being. This finding is also consistent with Owusu-Addo, et al., (2014) who stated that the main goal of Health Education Interventions is to change people's behaviour so that they choose to engage in healthy behaviours. The finding also agreed with Shapu, et al., (2021) who stated that Health Education Interventions provide knowledge that results in

behavioural changes, enhanced awareness and knowledge, skills, beliefs, attitudes, and values. This finding point to the fact that without health education and health literacy, individuals may not have the necessary knowledge and understanding to make informed decisions about their health.

4.2. Post-Test and Pre-Test Experimental Groups On Preventive Health Literacy Scores Of Health Education Intervention Among Christian Rural Women In Delta State Nigeria.

The finding from hypothesis 2, shows that there was significant difference in the post-test and pre-test experimental groups on preventive health literacy scores of health education intervention among Christian rural women in Delta State Nigeria. The significant difference observed in the preventive health literacy scores between the post-test and pre-test experimental groups provides evidence for the effectiveness of the health education intervention. The health education intervention may have employed effective educational materials that effectively conveyed key information about preventive measures. These materials may have resonated with the experimental group, resulting in improved health literacy scores during the posttest. This finding of this study align with Bailey, et al., (2016) which indicated the positive impact of health education interventions on health literacy outcomes. The findings shows that improvement of preventive health literacy through health education intervention, Christian rural women are likely to have a better understanding of health-related information, make informed decisions, and engage in preventive health behaviors.

4.3. Post-test Experimental and Post-test Control Groups on Preventive Health Literacy Scores of Health Education Intervention Among Christian Rural Women in Delta State Nigeria.

The finding from hypothesis 3, revealed that there was a significant difference in the post-test experimental and post-test control groups on Preventive Health Practices scores of Health Education Intervention on Health literacy among rural women in Delta State of Nigeria. The possible reason for the finding of a significant difference in the post experimental and post control groups on Preventive Health Practices scores of Health Education Intervention on Health literacy among rural women in Delta State of Nigeria could be attributed to various factors. Firstly, it is important to consider the impact of the health education intervention itself. The intervention may have provided the experimental group with valuable information and resources on preventive health practices that the control group did not receive. This could have led to a higher level of health literacy and subsequent adoption of preventive health practices among the experimental group. Additionally, in rural setting Rural areas often face unique challenges in accessing healthcare services and health information. The health education intervention may have addressed specific barriers and provided tailored information that resonated with the rural women in the experimental group. This could have contributed to the observed difference in health literacy and preventive health practices between the two groups. This finding is consistent with that of Jansen et al (2018) who determined the effect of educational intervention on Health Literacy and its impact on health-promoting behaviours of the health ambassadors in the health and treatment centres of the health network in Kazeroon and found that direct significant correlation of health literacy with all the dimensions of health-promoting behavior questionnaire before and after the intervention. The findings of this study shows that health education intervention may have addressed specific barriers and provided tailored information that resonated with the rural women in the experimental group. This could have contributed to the observed difference in health literacy and preventive health practices between the two groups.

5. Conclusion

The health education intervention had a significant positive impact on the preventive health practices of Christian rural women in Delta State. The intervention increased their knowledge, behavior, and attitudes towards preventive measures, indicating the effectiveness of health education in promoting healthier lifestyles and reducing the burden of preventable diseases. The findings of this study underscore the importance of incorporating health education interventions into public health programs to enhance preventive health practices among rural women.

Recommendations

Based on the conclusion, the following recommendations were made

- Health workers should offer health education and preventive guidance to individuals during the check-up and screening process. Emphasize the importance of early detection and healthy lifestyle choices.
- Non-governmental organization should collaborate with local healthcare providers and community health workers to reinforce the messages and knowledge gained through the intervention. These professionals can provide additional support and guidance to women seeking healthcare services.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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