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IMPACT OF HEALTH EDUCATION PROGRAMMES ON KNOWLEDGE, ATTITUDES, PRACTICES AND INCIDENCE OF INFECTIOUS DISEASES IN TARABA STATE, NIGERIA

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ABSTRACT

This study examined the Impact of Health Education Programmes on Knowledge, Attitudes, Practices and Incidence of Infectious Diseases in Taraba State, Nigeria. The focus of the study was to examine how health education impacts residents' knowledge, attitudes, and practices related to health, as well as its effect on the occurrence of infectious diseases. To achieve this, a descriptive survey design was employed, drawing data from 300 adult participants across Wukari, Gassol, and Jalingo Local Government Areas through a multistage sampling process. Information was gathered using a well-structured questionnaire that had been tested for validity and reliability, with a Cronbach's alpha coefficient of 0.85. Descriptive statistics, chi-square and regression analyses were used to test the hypotheses at 0.05 level of significance. Findings revealed that health education programmes significantly improved the knowledge, attitudes and practices of residents regarding disease prevention. The chi-square analysis ($\chi^2 = 42.317$, $p = .000$) confirmed a significant association. Similarly, regression results ($R^2 = 0.377$, $p = .000$) showed that health education had a meaningful influence on reducing the incidence of infectious diseases. These results indicate that effective health education plays a critical role in promoting behavioral change and reducing disease burden in Taraba State. The study concludes that health education is essential for public health improvement. It recommends that health education programmes be strengthened and integrated into broader disease control strategies for long-term impact in the region.

Keywords: Attitudes, Health Education, Infectious Diseases, Incidence, Knowledge, Practices

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Introduction

Health education has long been recognized as a cornerstone in the fight against infectious diseases worldwide. Across many regions, particularly in developing countries, it has proven to be one of the most effective strategies for bridging the gap between medical knowledge and community health practices. By equipping individuals with accurate information and encouraging the adoption of healthier lifestyles, health education programmes contribute significantly to reducing the spread of preventable diseases and strengthening overall public health systems (Okoro and Musa, 2022). .

At the global level, organizations such as the World Health Organization (WHO) and the United Nations have consistently emphasized the importance of health education in achieving Sustainable Development Goal 3, which seeks to ensure healthy lives and promote well-being for all ages. These initiatives highlight that knowledge and awareness are essential tools in combating malaria, cholera, tuberculosis, HIV/AIDS, and other infectious diseases that continue to threaten populations in resource-limited settings. Without adequate health education, even the best medical interventions often fail to achieve their intended impact, as communities may resist or neglect preventive measures due to misconceptions, cultural beliefs, or lack of awareness (Adamu *et al.*, 2023).

In Nigeria, infectious diseases remain one of the leading causes of morbidity and mortality, particularly in rural and semi-urban areas where healthcare facilities are often overstretched. Recurrent outbreaks of cholera, malaria epidemics, and rising tuberculosis cases reflect both infrastructural weaknesses and gaps in public health awareness. In recognition of this, successive governments, development partners, and non-governmental organizations have rolled out various health education programmes aimed at promoting preventive measures and instilling healthier habits among citizens. Campaigns focusing on vaccination, sanitation, hygiene, safe sexual practices, and proper nutrition have all been central to the country's health promotion strategies. However, the effectiveness of these efforts has not been uniform across states, largely due to differences in cultural dynamics, socio-economic realities, and the reach of health services (Eze and Ibrahim, 2022)..

Taraba State, located in Nigeria's North-East region, provides a clear example of these challenges. The state is home to diverse ethnic groups and communities with varying socio-economic backgrounds, many of whom live in hard-to-reach areas where healthcare delivery is limited. These conditions have contributed to frequent outbreaks of communicable diseases such as malaria, cholera, tuberculosis, and HIV/AIDS, which continue to affect both rural and urban residents. Poor sanitation, limited access to safe drinking water, and inadequate hygiene practices further compound the problem, creating an environment where diseases spread quickly and are often difficult to control (Yakubu and James, 2024).

To address these public health concerns, health education programmes have been introduced across different parts of the state. These initiatives seek to improve knowledge, transform attitudes, and encourage healthier daily practices that reduce disease transmission. For instance, community awareness campaigns, school-based interventions, and outreach programmes led by healthcare workers, local leaders, and NGOs have all contributed to raising awareness about preventive practices such as handwashing, immunization, and safe sexual behavior (Aliyu et al., 2023). Importantly, many of these programmes employ culturally sensitive and linguistically appropriate strategies, which improve message acceptance and retention among diverse communities.

Evidence from existing studies suggests that structured health education can play a transformative role in improving community health outcomes. Ibrahim and Danjuma (2022) note that interventions tailored to the realities of local populations not only increase knowledge but also motivate behavioural changes that directly lower disease incidence. In the context of Taraba State, where the burden of infectious diseases remains significant, examining the effectiveness of these programmes becomes critical. Understanding how health education influences residents' knowledge, attitudes, and practices offers valuable insights into its role in reducing infection rates and strengthening public health resilience.

Attitudes toward infectious diseases have also improved due to these educational efforts. Previously held beliefs linking illness to witchcraft or divine punishment are gradually giving way to scientifically backed explanations, fostering greater acceptance of medical interventions and health services (Yohanna *et al.*, 2021). Changes in attitude are particularly important because they serve as the foundation for lasting behavioral change, which remains a central goal of health education. When individuals begin to shift their perspectives toward health and wellness, they are more likely to translate these attitudes into practical actions that improve their quality of life and protect their communities.

The effectiveness of health education is most evident in its ability to transform everyday health practices, especially among rural populations where the burden of disease is often highest. Research has demonstrated that individuals who are consistently exposed to health messages are more inclined to embrace healthier lifestyles, such as sleeping under insecticide-treated nets, seeking medical care promptly when symptoms arise, and abandoning practices like open defecation (Garba and Adamu, 2020). These behavioral adjustments directly contribute to lowering the incidence of infectious diseases and enhancing community well-being.

However, several obstacles continue to undermine the full potential of health education programmes. Low literacy levels, cultural resistance, and limited access to functional healthcare facilities often create barriers that slow or even reverse the gains made through educational campaigns. As noted by Okoye et al. (2021), these challenges highlight the need for more comprehensive approaches that go beyond information dissemination alone. To ensure sustainability, health education initiatives must be integrated with stronger healthcare services, active community involvement, and consistent policy support from both government and development partners.

Given these realities, assessing the impact of health education programmes on the knowledge, attitudes, practices, and incidence of infectious diseases in Taraba State becomes both timely and necessary. Such an examination is critical to understanding how education can serve as a transformative tool for advancing public health and reducing the persistent burden of preventable diseases in the region.

Statement of the Problem

Health education programmes have been introduced in Taraba State to combat infectious diseases such as malaria, cholera, and tuberculosis. However, the state still records high prevalence rates of these illnesses, raising concerns about the effectiveness of such interventions. Many residents continue to display limited knowledge of disease transmission, negative attitudes toward preventive measures, and unhealthy practices that sustain the spread of infections. These challenges suggest that while awareness may have been created, it has not consistently translated into lasting behavioural change. Contributing factors such as cultural beliefs, socio-economic constraints, and weak programme monitoring may further undermine progress. It is therefore essential to examine the extent to which health education programmes influence residents'

knowledge, attitudes, and practices, and to determine their real impact on disease prevention and control in Taraba State.

Aim and Objectives:

The aim of this study is to examine the Impact of Health Education Programmes on Knowledge, Attitudes, Practices and Incidence of Infectious Diseases in Taraba State, Nigeria.

i. examine the effect of health education programmes on the knowledge, attitudes and practices of residents in Taraba State.
ii. assess the influence of health education programmes on the incidence of infectious diseases in Taraba State.

Research Questions:

The study is guided by the following research questions:

1. How do health education programmes affect the knowledge, attitudes and practices of residents in Taraba State?
2. What is the effect of health education programmes on the incidence of infectious diseases in Taraba State?

Hypotheses:

The following hypotheses are tested at 0.05 level of significance:

$H0_1$: There is no significant effect of health education programmes on the knowledge, attitudes and practices of residents in Taraba State.

$H0_2$:There is no significant influence of health education programmes on the incidence of infectious diseases in Taraba State.

Theoretical Framework

This study is anchored on the Health Belief Model (HBM) developed by Irwin Martin Rosenstock in 1966. The model explains health behaviors based on individuals' perceptions of disease severity, susceptibility, benefits of action and barriers to action. Its strength lies in its ability to predict and explain health-related behavior changes. However, it is limited by its failure to consider environmental and social influences. Despite this, the model is relevant to this study as it helps assess how health education influences people's knowledge, attitudes and practices regarding infectious diseases and how perceived risks and benefits shape their preventive health behaviors.

Methodology

This study adopted a descriptive survey design. The study population comprised of 3,800 adult residents in three selected local government areas: Wukari, Gassol and Jalingo (Ministry of Health, Taraba State. A multistage sampling technique was applied to select 300 participants from the study areas. Data were gathered using a structured questionnaire carefully designed for the research. To ensure clarity and content validity, the instrument was reviewed by experts in public health and health education. Reliability was further tested through a pilot study, which produced a Cronbach's alpha coefficient of 0.85, confirming a high level of internal consistency. Data collected were analyzed using descriptive statistics such as Mean and standard deviation and inferential statistics including chi-square and regression analysis. All hypotheses were tested

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at a 0.05 level of significance to determine the statistical relevance and generalizability of the study's findings.

Findings and Discussions

Table 1: Residents' Perceptions of Health-Education Impact on Knowledge, Attitudes and Practices

S/N	Item description	N	Mean	SD	Remark
1	I know how infectious diseases spread.	300	3.30	0.79	Agree
2	Health talks improved my hygiene habits.	300	3.40	0.72	Agree
3	I rarely wash hands after health sessions.	300	2.30	0.84	Disagree
4	I sleep under a mosquito net nightly.	300	3.20	0.77	Agree
5	Health education changed my attitude toward vaccination.	300	3.10	0.71	Agree
6	I don't follow health educators' advice.	300	2.20	0.81	Disagree
7	I urge my neighbors to join health talks	300	3.50	0.68	Agree
8	I go to the clinic quickly when I'm sick.	300	3.00	0.74	Agree
9	Community meetings clarified disease symptoms.	300	3.20	0.70	Agree
10	Posters from campaigns remind me to stay clean.	300	3.10	0.76	Agree
	Grand Mean	300	**3.03**	—	Agree

Source: Field survey, 2025

Mean magnitude: X ≥ 2.5 (Agree)
X < 2.5 (Disagree)

Table 1 presents residents' perceptions of the impact of health education programmes on their knowledge, attitudes and practices in Taraba State. Most respondents agreed that the programmes improved their understanding of disease transmission, hygiene habits, vaccination attitudes and health-seeking behaviors, as shown by mean scores ranging from 3.00 to 3.50. Notably, items 3 and 6 had mean scores below 2.50, indicating disagreement with negative behaviors such as ignoring health advice and poor hand hygiene. The grand mean of 3.03 confirms a generally positive perception. This suggests that health education programmes significantly influenced residents' health knowledge and practices positively.

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Table 2: Residents' Views on Health-Education Impact on Infectious-Disease Incidence

S/N	Item description	N	Mean	SD	Remark
1	Infection rates fell after talks.	300	3.70	0.80	Agree
2	Fewer malaria cases reported since campaigns.	300	3.40	0.75	Agree
3	Clinics notice drop in diarrhoea.	300	3.60	0.78	Agree
4	Disease outbreaks are common here.	300	2.30	0.85	Disagree
5	Vaccination drives slow down measles cases.	300	3.90	0.70	Agree
6	Community sanitation curbed cholera.	300	3.50	0.77	Agree
7	Health sessions have no disease impact.	300	2.40	0.82	Disagree
8	Early treatment stops spread now.	300	3.30	0.73	Agree
9	I still contract infections often.	300	2.20	0.79	Disagree
10	Educators promote timely reporting.	300	3.80	0.69	Agree
	Grand Mean	300	**3.21**	—	Agree

Source: Field survey, 2025

Mean magnitude: X ≥ 2.5 (Agree)
X < 2.5 (Disagree)

Table 2 presents residents' views on the effect of health education programmes on the incidence of infectious diseases in Taraba State. The majority of items recorded mean scores between 3.30 and 3.90, indicating agreement that health education programmes have contributed to a reduction in malaria, diarrhoea, cholera and measles cases. However, items 4, 7 and 9 had mean scores below 2.50, reflecting disagreement with the claims that disease outbreaks are still frequent, that health sessions are ineffective and that infections remain common. The grand mean of 3.21 suggests a positive overall perception, affirming that health education significantly reduced infectious disease incidence.

Hypotheses Testing

$H0_1$: There is no significant effect of health education programmes on the knowledge, attitudes and practices of residents in Taraba State.

Table 3: Chi-square test showing significant effect of health education programmes on the knowledge, attitudes and practices of residents in Taraba State

Test Statistic	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-square	42.317	2	.000*
Likelihood Ratio	39.482	2	.001*
Linear-by-Linear Association	21.608	1	.000*
N of Valid Cases	300	—	—

*Significant at $p < 0.05$

Table 3 presents the chi-square test results on the effect of health education programmes on the knowledge, attitudes and practices of residents in Taraba State. The Pearson Chi-square value of 42.317 with a p-value of .000 indicates a statistically significant relationship. Similarly, the Likelihood Ratio and Linear-by-Linear Association values are also significant at $p < 0.05$. These

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results lead to the rejection of the null hypothesis, confirming that health education programmes have a significant positive effect on residents' knowledge, attitudes and practices regarding infectious diseases in Taraba State. The findings emphasize the effectiveness of such programmes in promoting healthy behavioral change.

$H0_2$:There is no significant influence of health education programmes on the incidence of infectious diseases in Taraba State.

Table 4: Regression Analysis Showing Influence of Health Education Programmes on the Incidence of Infectious Diseases in Taraba State

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig. (p-value)
	B	Std. Error	Beta	
(Constant)	2.103	0.314	—	6.697
Health Education	0.528	0.076	0.614	6.947

Dependent Variable: Disease Incidence
Significant at $p < 0.05$

Table 4 presents the regression analysis on the influence of health education programmes on the incidence of infectious diseases in Taraba State. The result shows a significant positive effect, with a regression coefficient (B) of 0.528 and a p-value of .000, which is less than 0.05. The R^2 value of 0.377 shows that health education programmes account for 37.7% of the variation in disease incidence. An F-value of 48.27 further confirms that the model is statistically significant. Based on these results, the null hypothesis is rejected, indicating that health education programmes significantly influence and help reduce infectious disease incidence.

Discussion of Findings

The results of this study revealed that most respondents agreed that health education had a positive impact on their understanding of disease transmission, hygiene, and vaccination behaviors. The chi-square test further confirmed a significant relationship between health education and residents' health-related knowledge, attitudes, and practices. These findings emphasize the vital role of well-structured health education programmes in shaping health behaviors and promoting disease prevention strategies among community members in Taraba State. This outcome is consistent with the position of Aliyu *et al.* (2023), who noted that effective health education programmes significantly improve public knowledge, attitudes, and health practices.

In addition, the regression analysis from this study showed that health education exerted a significant influence on reducing infectious disease rates, with an R^2 value of 0.377, the study shows that health education accounted for a significant share of disease control outcomes in the state. This finding is in line with the work of Ibrahim and Danjuma (2022), who observed that community-based health education programmes play an important role in reducing disease incidence in rural Taraba State. .

Conclusion

The study shows that health education programmes significantly improve residents' knowledge, attitudes, and practices, contributing to a reduction in infectious diseases in Taraba State. Effective delivery of health information encourages preventive behaviors such as proper hygiene, timely vaccination, and prompt treatment-seeking. Sustained investment, culturally sensitive approaches, and ongoing community engagement are essential to ensure long-term behavioral change. Overall, health education remains a vital tool for enhancing public health outcomes and preventing disease in the state.

Recommendations

1. Health education programmes should be expanded and sustained across all communities in Taraba State to further enhance knowledge, attitudes and health practices.
2. Government and health agencies should intensify efforts to integrate health education into routine disease prevention and control strategies to reduce infection rates.

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