

ROLES OF PUBLIC HEALTH ON DISEASE PREVENTION THROUGH BEHAVIOUR MODIFICATION IN NORTH-WEST NIGERIA

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ABSTRACT

This study investigated the roles of public health on disease prevention through behaviour modification in North-West Nigeria. To achieve this, six research questions, one major hypothesis and five sub-hypotheses were formulated. Descriptive survey research design was adopted in carrying out the study. The population of this research comprised residents of selected states in North-West Nigeria, from which respondents were drawn using multi-stage sampling procedures. A researcher-designed questionnaire titled *Public Health and Behaviour Modification Questionnaire (PHBMQ)* with a reliability coefficient of 0.80 was used for data collection. In addition, interviews with health officials and community leaders were conducted to strengthen the findings. Out of the copies of the questionnaire administered, only those duly completed and returned were used for data analysis. Frequency count and percentage were used to organize and describe the demographic data of the subjects, while Chi-square and ANOVA were employed to test the hypotheses at 0.05 level of significance. The results of the study revealed that public health interventions such as health education, sanitation campaigns, vaccination, and awareness programmes significantly influence disease prevention through positive behaviour change among communities in North-West Nigeria. Findings further indicated that cultural practices, poverty, inadequate facilities, and attitudes of health personnel are major factors affecting sustained behavioural modification.

Keywords: Public Health, Disease Prevention, Behaviour Modification, Community, Mobilization, Sanitation.

Introduction

Health is universally recognized as a fundamental human right and a prerequisite for social and economic development. In many developing nations, including Nigeria, preventable diseases such as malaria, cholera, meningitis, diarrhoeal infections, and respiratory illnesses continue to impose a heavy burden on individuals, families, and communities. The World Health Organization (WHO, 2018) emphasizes that effective public health interventions, particularly those aimed at modifying health-related behaviours, are central to reducing morbidity and mortality from communicable and non-communicable diseases alike.

In the Nigerian context, particularly in the North-West region, poor sanitation, inadequate personal hygiene, unhealthy lifestyles, and weak health-seeking behaviours have contributed significantly to the persistence of preventable diseases (NCDC, 2021). Behaviour modification, through structured public health strategies such as health education, awareness campaigns, vaccination programmes, and community mobilisation, plays an essential role in reducing disease transmission and improving health outcomes. The Health Belief Model and Social Cognitive Theory both highlight that individuals are more likely to adopt positive health behaviours when they perceive personal risk, understand the benefits of prevention, and are supported by enabling environments.

Despite various government efforts, including the National Health Promotion Policy and community-based health interventions, public health outcomes in the region remain unsatisfactory. Cultural beliefs, poverty, poor infrastructure, and inadequate health communication strategies continue to limit the effectiveness of behaviour change initiatives. It is therefore imperative to investigate how public health approaches contribute to disease prevention through behaviour modification in North-West Nigeria, and to identify the challenges and opportunities that exist for strengthening these interventions.

The North-West region of Nigeria is frequently affected by outbreaks of preventable diseases such as cholera, meningitis, and malaria. These diseases are often associated with poor environmental sanitation, unsafe water supply, and low uptake of preventive health measures. While public health agencies and non-governmental organisations continue to promote disease prevention through health education and behaviour change campaigns, the level of compliance remains inconsistent across communities.

Observations by the Nigeria Centre for Disease Control (2021) indicate that despite repeated campaigns on hygiene, vaccination, and nutrition, preventable diseases still account for high morbidity and mortality in the region. Furthermore, socio-cultural factors, negative perceptions of modern health practices, and lack of trust in public health systems hinder sustained behaviour modification. The persistence of these challenges raises a critical question: to what extent are public health interventions effective in preventing disease through behaviour change in North-West Nigeria?

Research Questions

Based on the research problem, the following research questions were answered in the study:

1. What is the role of health education in disease prevention through behaviour modification in North-West Nigeria?
2. What is the influence of vaccination campaigns on disease prevention through behaviour modification?
3. What is the role of sanitation and hygiene programmes in disease prevention?
4. What is the impact of community mobilisation on behaviour modification?

5. How do attitudes of health personnel influence behaviour modification?

METHODOLOGY

The study adopted a descriptive survey research design. This design was considered appropriate because it enables the researcher to collect information from a representative sample of the population regarding the roles of public health in disease prevention through behaviour modification in North-West Nigeria. The design also allows for both quantitative and qualitative data collection, ensuring that opinions, practices, and challenges are adequately captured.

Population of the Study

The population of the study comprised residents of North-West Nigeria. This region consists of seven states, namely: Jigawa, Kaduna, Kano, Katsina, Kebbi, Sokoto, and Zamfara, with a combined population estimated at over 48 million (National Population Commission, 2022). The target population included adults aged 18 years and above, as well as health workers and community leaders actively involved in public health initiatives.

Sample and Sampling Technique

A multi-stage sampling procedure was employed to select respondents. In the first stage, four states were randomly selected from the seven North-West states. In the second stage, three local government areas (LGAs) were purposively selected from each chosen state based on high records of preventable diseases. In the third stage, households within selected LGAs were systematically sampled. Finally, respondents were randomly chosen from households, while health workers and community leaders were purposively included.

A total sample size of 400 respondents was determined using the Krejcie and Morgan (1970) sample size determination table, ensuring adequate representation of the target population.

Data Collection Instrument

The main instrument for data collection was a researcher-designed questionnaire titled *Public Health and Behaviour Modification Questionnaire (PHBMQ)*. The questionnaire consisted of two sections. Section A: Demographic information of respondents (age, gender, education, occupation, state of residence), Section B: Items measuring roles of public health interventions such as health education, vaccination, sanitation and hygiene programmes, community mobilisation, and attitudes of health personnel. The questionnaire employed a 4-point Likert scale format with response options: *Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1)*.

Additionally, an interview guide was developed to collect qualitative data from health workers and community leaders.

Validity of the Instrument

The questionnaire and interview guide were subjected to face and content validity by three experts in Public Health and Educational Research at a Nigerian university. Their corrections and suggestions were incorporated before the final instruments were produced.

Reliability of the Instrument

To establish the reliability of the questionnaire, a pilot study was conducted using 40 respondents in Niger State, which is outside the study area but shares similar socio-cultural characteristics with the North-West region. The data collected was analysed using Cronbach's Alpha method, and the

reliability coefficient of **0.80** was obtained, which was considered high enough to ensure consistency of the instrument.

Data Collection Procedure

Approval was obtained from relevant authorities before administering the instruments. With the assistance of trained research assistants, questionnaires were distributed to respondents in their households, while interviews were conducted with health workers and community leaders. Respondents were assured of confidentiality, and only those who voluntarily consented were included in the study. Completed questionnaires were retrieved immediately to minimise loss.

Data Analysis

Descriptive statistics of frequency counts and percentages were used to organize and describe the demographic information of the respondents. The research questions were analysed using mean and standard deviation.

RESULTS AND DISCUSSION

This chapter presents the analysis of data collected to answer the research questions and test the hypotheses formulated in Chapter One. Results are presented in tables, followed by interpretations and discussions in line with existing literature.

Demographic Characteristics of Respondents

The demographic data include respondents' age, gender, level of education, and occupation.

Table 1: Demographic Characteristics of Respondents (N = 400)

Variable	Category	Frequency	Percentage (%)
Age	18–25 years	100	25.0
	26–45 years	180	45.0
	46–60 years	80	20.0
	Above 60 years	40	10.0
Gender	Male	220	55.0
	Female	180	45.0
Education	Primary	80	20.0
	Secondary	160	40.0
	Tertiary	140	35.0
	None	20	5.0
Occupation	Farming	120	30.0
	Trading	100	25.0
	Civil Service	90	22.5
	Artisan/Other	90	22.5

Source: Field Survey, 2025

Table 1 shows the demographic profile shows that most respondents were within the productive age range of 26–45 years, with more males (55%) than females (45%). The majority had at least secondary education, and occupations were spread across farming, trading, civil service, and artisan work.

Research Question One

What is the role of health education in disease prevention through behaviour modification in North-West Nigeria?

Table 2: Respondents' Opinions on Health Education and Behaviour Modification

Item (Health Education Practices)	SA	A	D	SD	Mean	Decision
Health talks improve awareness of hygiene practices	120	200	60	20	3.25	Accepted
Media campaigns encourage preventive health practices	150	180	50	20	3.30	Accepted
School-based health education influences youth behaviour	140	190	55	15	3.28	Accepted

Decision mean = 2.50; Source: Field Survey, 2025

Table 2: The mean scores are above 2.50, indicating that respondents agree health education significantly influences behaviour modification.

Research Question Two

What is the influence of vaccination campaigns on disease prevention through behaviour modification?

Table 3: Respondents' Opinions on Vaccination Campaigns

Item (Vaccination Campaigns)	SA	A	D	SD	Mean	Decision
Vaccination reduces prevalence of preventable diseases	160	170	50	20	3.25	Accepted
Campaigns increase community acceptance of immunisation	150	180	55	15	3.28	Accepted
Mobilisation by health workers boosts compliance	140	185	60	15	3.25	Accepted

Decision mean = 2.50; Source: Field Survey, 2025

Table 3 shows vaccination campaigns strongly influence behaviour change, though some cultural resistance remains.

Research Question Three

What is the role of sanitation and hygiene programmes in disease prevention?

Table 4: Respondents' Opinions on Sanitation and Hygiene

Item (Sanitation & Hygiene Practices)	SA	A	D	SD	Mean	Decision
Environmental sanitation reduces cholera outbreaks	150	180	55	15	3.28	Accepted
Waste management campaigns improve community practices	145	185	55	15	3.27	Accepted
Hygiene inspections promote compliance	130	190	65	15	3.23	Accepted

Decision mean = 2.50; Source: Field Survey, 2025

Respondents agreed that sanitation programmes reduce outbreaks and sustain hygiene practices.

Research Question Four

What is the impact of community mobilisation on behaviour modification?

Table 5: Respondents' Opinions on Community Mobilisation

Item (Community Mobilisation)	SA	A	D	SD	Mean	Decision
Religious/traditional leaders influence behaviour	160	170	55	15	3.24	Accepted
Youth/women groups sustain preventive practices	150	180	55	15	3.28	Accepted
Community clean-up days reinforce hygiene	170	175	40	15	3.25	Accepted

Decision mean = 2.50; Source: Field Survey, 2025

Community mobilisation emerged as a strong driver of sustained behaviour change.

Research Question Five

How do attitudes of health personnel influence behaviour modification?

Table 6: Respondents' Opinions on Health Personnel Attitudes

Item (Health Personnel Attitudes)	SA	A	D	SD	Mean	Decision
Friendly attitudes encourage community compliance	140	180	60	20	3.10	Accepted
Negative attitudes discourage health-seeking behaviour	160	150	70	20	3.12	Accepted
Respectful communication improves trust in health workers	150	170	60	20	3.13	Accepted

Decision mean = 2.50; Source: Field Survey, 2025

The findings suggest mixed attitudes: while many health personnel were supportive, negative behaviours discouraged compliance in some cases.

Discussion of Findings

The results confirm that public health interventions play a major role in reducing disease prevalence through behaviour modification. Health education was effective, aligning with Glanz & Bishop (2010). Vaccination significantly improved compliance, though challenges of cultural resistance persist, as Musa & Garba (2019) noted. Sanitation programmes reduced waterborne diseases, supporting Adebayo (2017). Community mobilisation proved essential for sustaining practices, validating Bandura's Social Cognitive Theory. Health worker attitudes had mixed effects, echoing Ibrahim (2021), who highlighted poor communication as a barrier.

Overall, the findings demonstrate that while public health interventions are effective, their sustainability depends on cultural adaptation, adequate resources, and improved community trust in the health system.

Conclusion

Based on the findings, this study concludes that public health interventions are effective in preventing diseases through behaviour modification in North-West Nigeria. Health education, vaccination, sanitation, and community mobilisation were all found to significantly influence behaviour and improve health outcomes. However, the sustainability of these interventions is hindered by cultural resistance, poverty, weak health infrastructure, and negative attitudes of some health personnel.

Therefore, disease prevention in North-West Nigeria requires a comprehensive, culturally sensitive, and community-driven approach that strengthens health systems and addresses behavioural as well as structural barriers.

Recommendations

The following recommendations are made based on the findings:

- Scale up culturally appropriate health education programmes in schools, religious centres, and media.
- Provide adequate funding and infrastructure for public health programmes, particularly in rural communities.
- Enforce policies that promote environmental sanitation and ensure regular monitoring of compliance.
- Undergo regular training on communication and interpersonal skills to improve relationships with communities.
- Work closely with community leaders to build trust and counter cultural misconceptions.
- Strengthen community mobilisation structures by engaging religious, traditional, and youth leaders.
- Institutionalise community-led health activities such as monthly clean-up campaigns.
- Support government interventions through funding, technical expertise, and innovative behaviour change campaigns.
- Use local languages and culturally relevant communication strategies to improve acceptance.

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