

Effect of Health Education Intervention on Utilisation of Healthcare Services among Federal Colleges of Education Students in North-West, Nigeria

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Abstract

Cultural and social factors such as traditional beliefs, stigma, gender norms, and social influence are widely recognised as powerful determinants of healthcare-seeking behaviour, particularly in settings where biomedical care competes with traditional and spiritual alternatives. This quasi-experimental study examined the effect of a health education intervention on healthcare services utilisation among students in Federal Colleges of Education in North-West Nigeria, with particular attention to cultural and social factors. A pre-test/post-test design was employed. Using multi-stage sampling, 200 participants were recruited, with 100 assigned to the experimental group at Federal College of Education, Zaria, and 100 to the control group at Federal College of Education, Kano. Data were collected via a validated, researcher-developed questionnaire rated on a four-point modified Likert scale (Cronbach's $\alpha = 0.752$) and analysed using descriptive statistics, paired-sample t-tests, and independent-sample t-tests at a 0.05 significance level. Results showed a significant improvement in healthcare service utilisation attributable to cultural and social factors in the experimental group, with mean scores rising from 2.49 to 3.46 (mean difference = 0.97; $t = 35.78$; $p = 0.000$). The experimental group also recorded significantly higher utilisation scores than the control group after the intervention (mean difference = 1.04; $t = 44.27$; $p = 0.000$). Both null hypotheses were rejected. The study concluded that the health education intervention had its most substantial effect in addressing cultural and social barriers to healthcare utilisation. Culturally sensitive health education, delivered in collaboration with community and religious leaders, is recommended to sustain these gains.

Keywords: Health education, intervention, healthcare services colleges of education Students

Introduction

Healthcare services refer to the totality of preventive, promotive, curative, and rehabilitative actions provided by trained personnel and institutions with the aim of maintaining or restoring the physical, mental, and social well-being of individuals and populations (World Health Organisation [WHO], 2025). Healthcare services utilisation, on the other hand, describes the actual use of these services by individuals when a perceived or actual health need arises, and it is commonly assessed through indicators such as outpatient visits, hospital admissions, antenatal attendance, and uptake of preventive care (Andersen & Newman, 1973). Utilisation is not automatic; it is shaped by a web of predisposing, enabling, and need-related factors that determine whether a person with a health problem actually seeks formal care. Among these, cultural beliefs and social influences occupy a central place, particularly in societies where traditional worldviews about illness causation and care-seeking coexist with modern biomedical systems. Globally, healthcare services utilisation remains a major public health concern, with the WHO and World Bank (2025) reporting that the global Universal Health Coverage Service Coverage Index rose from only 54 points in 2000 to 71 points in 2023, yet an estimated 4.6 billion people worldwide still lack access to essential health services. The same report indicates that 2.1 billion people experienced financial hardship from out-of-pocket health spending in 2022, including 1.6 billion pushed into or further into poverty (WHO & World Bank, 2025). These figures show that even though service coverage has improved over two decades, progress has stagnated since the adoption of the Sustainable Development Goals in 2015, and at current rates, the global coverage index will only reach 74 points by 2030 (World Bank, 2025). In Africa, the burden of low healthcare utilisation is compounded by cultural and social factors that influence whether people seek orthodox care or rely on alternative options. Comparative studies across

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African countries show that traditional and herbal medicine remain a first point of call for a substantial proportion of the population, especially in West Africa, where socio-cultural beliefs about disease causation often compete with biomedical explanations (James et al., 2018). Health insurance coverage across sub-Saharan Africa also remains low, leaving most service utilisation dependent on out-of-pocket payment, a situation that disproportionately discourages care-seeking among populations whose social norms already favour self-medication or consultation with traditional healers before hospital attendance. In Nigeria specifically, the indicators are troubling. The minister of health disclosed that Nigeria's per capita health expenditure was only about \$43 in 2024, an amount considered grossly inadequate for the country's population and disease burden, while out-of-pocket spending accounts for about 70–75% of total health expenditure (Centre for Journalism Innovation and Development [CJID], 2025). The 2023 Nigeria Demographic and Health Survey reported a maternal mortality ratio of 512 deaths per 100,000 live births and an under-five mortality rate of 110 per 1,000 live births, with Nigeria accounting for about 14% of global maternal deaths despite representing only 2.6% of the world's population (allAfrica, 2025). Fewer than 10–12% of Nigerians are covered by health insurance (Commonwealth Fund, 2026), meaning that cultural attitudes toward formal healthcare, alongside cost, strongly shape whether citizens utilise available services. Among students specifically, utilisation patterns mirror and sometimes worsen the national picture. A cross-sectional study at a private Nigerian university found that although 87.4% of students reported ever utilising campus healthcare services, the majority (66.9%) held a negative perception of the services, and only 43.4% used them occasionally rather than regularly (Orok et al., 2024). Similarly, a study at Gombe State University found that satisfaction varied widely across specific services, with notable dissatisfaction recorded for conditions such as eye problems despite higher satisfaction with services like antenatal care (Bello et al., 2024). These findings suggest that beyond logistics, students' decisions to use or avoid available health services are filtered through personal beliefs, peer influence, and family-instilled cultural orientations toward illness and care-seeking.

Cultural factors include indigenous beliefs about disease causation, preference for traditional or spiritual healing, religious interpretations of illness, and entrenched gender norms that may restrict young women's autonomy in seeking care (Isiaq & Abdullahi, 2025). Social factors include peer group attitudes, family expectations, stigma associated with certain conditions (such as reproductive health and mental health issues), and the influence of significant others on health decisions. In the predominantly Hausa-Fulani and Islamic socio-cultural context of North-West Nigeria, such factors are particularly salient, as care-seeking behaviour is frequently mediated by communal and religious considerations rather than by individual decision alone (Adamu et al., 2025). Given these dynamics, there is a clear need for a deliberate health education intervention that addresses misconceptions, challenges unhelpful cultural narratives, and builds social support for appropriate healthcare-seeking behaviour among students. Health education is widely recognised as a cost-effective strategy for improving knowledge, reshaping attitudes, and ultimately increasing the appropriate utilisation of available healthcare services (Jia et al., 2025). Without such structured interventions, cultural and social barriers are likely to persist unchallenged, leaving students vulnerable to preventable morbidity and poor health outcomes that could otherwise be averted through timely service utilisation. Previous studies have examined cultural and social influences on healthcare utilisation in various populations, including adolescents, migrants, and university students, largely through the lens of the Andersen Behavioural Model, which explicitly recognises predisposing socio-cultural characteristics as determinants of health service use (Krzyż et al., 2023). Nigerian studies on adolescent girls in the South-East found that predisposing demographic and social-structural factors significantly shaped health service usage (Azfredrick, 2016), while studies among nursing and undergraduate students elsewhere in Nigeria identified socio-cultural beliefs as recurring barriers to formal healthcare utilisation (Wankasi et al., 2024). However, comparatively few studies have specifically evaluated whether health education intervention can shift the cultural and social determinants of utilisation among students in Federal Colleges of Education, particularly within the unique socio-religious context of North-West Nigeria. Despite the documented influence of cultural and social factors on healthcare utilisation generally, the researcher observes a dearth of empirical, intervention-based evidence specifically targeting students in Federal Colleges of Education in North-West Nigeria. Most existing Nigerian studies focus on university students in southern or central Nigeria, or on the general adult population, leaving a gap regarding how deeply rooted cultural beliefs and social pressures within this specific zone and institutional category affect healthcare-seeking behaviour, and whether a deliberately designed health education programme can produce a measurable change in utilisation patterns. This gap forms the basis for the present study, which

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seeks to determine the effect of a health education intervention on healthcare services utilisation among students in Federal Colleges of Education in North-West Nigeria, with specific attention to cultural and social factors.

Purpose of the Study

This study assessed:

1. The effect of health education intervention on utilisation of healthcare services among the Federal Colleges of Education students in North-West Nigeria after the intervention, based on cultural and social factors.
2. The difference between the control and experimental groups in the level of utilisation of healthcare services after health education intervention among Federal Colleges of Education students in North-West Nigeria, based on cultural and social factors.

Research Questions

The following research questions were raised to guide the study:

1. What is the effect of health education intervention on utilisation of healthcare services among the Federal Colleges of Education students in North-West Nigeria, after the intervention, based on cultural and social factors?
2. What is the difference between the control and experimental groups in the level of utilisation of healthcare services after health education intervention among Federal Colleges of Education students in North-West Nigeria, based on cultural and social factors?

Hypotheses

The following hypotheses were postulated for the study:

1. There is no significant effect of cultural and social factors on health education intervention on utilisation of healthcare services among Federal Colleges of Education students in North-West Nigeria after the health education intervention.
2. There is no significant difference between the control and experimental group on utilisation of healthcare services after health education intervention among Federal Colleges of Education students in North-West Nigeria, based on cultural and social factors.

Methodology

This study adopted a quasi-experimental research design involving pre-test and post-test measurements across two non-randomly assigned groups: an experimental group and a control group. The design was selected because it enables the establishment of cause-and-effect relationships between the health education intervention and healthcare services utilisation, while accommodating the practical constraints that precluded random assignment of participants. All participants in both groups were assessed at baseline using a standardised questionnaire, and again following the intervention period, thereby allowing the researchers to evaluate changes attributable to the programme. The study population comprised sixty-seven thousand, six hundred and seventy-nine (67,679) students enrolled across six Federal Colleges of Education in Northwest Nigeria, as documented by the National Commission for Federal Colleges of Education (NCCE, 2024). These institutions were drawn from Kaduna, Kano, Katsina, Sokoto, and Zamfara States. A multi-stage sampling procedure was employed. In the first stage, simple random sampling using the fishbowl technique was applied to select two states from among the five states hosting Federal Colleges of Education in Northwest Nigeria, yielding Kaduna and Kano States. In the second stage, one Federal College of Education was selected from each of the two chosen states using the same fishbowl approach, yielding the Federal College of Education, Zaria (Kaduna State) and the Federal College of Education, Kano (Kano State). In the third stage, simple random sampling was used to assign the two selected colleges into experimental and control groups, with Federal College of Education, Zaria, designated as the experimental group and Federal College of Education, Kano, as the control group. In the final stage, non-probability sampling was used to recruit 100 participants from each institution, giving a total sample size of 200 participants. This arrangement reflects a non-equivalent control group design, widely employed in quasi-experimental studies where full randomisation is operationally infeasible. The inclusion criteria required participants to be NCE students of Federal Colleges of Education in Northwest Nigeria who were willing to participate in the intervention and follow-up assessments. Students who were absent from school at the time of data collection were excluded from the study. Informed written consent was obtained from all

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participants before their inclusion, and ethical protocols were adhered to throughout the study process. The instrument for data collection was a researcher-developed questionnaire comprising a demographic section and a fifteen-item section measuring cultural and social factors in healthcare services utilisation. Responses were rated on a four-point modified Likert scale: Always (4), Often (3), Sometimes (2), and Never (1), with a mean aggregate score of 2.50 and above set as the threshold for a positive response. The questionnaire was validated by five subject-matter experts from the Department of Human Kinetics and Health Education and the College of Medical Sciences, Ahmadu Bello University, Zaria, whose inputs were incorporated before a pilot study conducted among 50 students at the Federal College of Education, Katsina, an institution sharing similar characteristics with the sampled colleges but excluded from the main study. Reliability was established through Cronbach's Alpha, yielding a coefficient of 0.752, which is considered adequate for internal consistency. The health education intervention was administered over six to eight weeks, with sessions held weekly at the Federal College of Education, Zaria, guided by a researcher-developed manual that sequenced topics relevant to cultural, social, and behavioural factors (traditional beliefs, stigma, social norms, and gender dynamics) and healthcare utilisation. Facilitator-led group discussions, case studies, and interactive sharing of personal experiences formed the core pedagogical methods, with group presentations and feedback sessions serving as evaluation tools. Data collection was conducted in three phases: a pre-intervention assessment administered concurrently to both groups, an intervention phase in which only the experimental group received the programme, and a post-intervention assessment administered to both groups one week after the conclusion of the intervention. Descriptive statistics of frequency and percentage were used to analyse the demographic characteristics of the respondents. Mean and standard deviation were used to answer the research questions, while the paired-sample t-test and independent-sample t-test were used to test the hypotheses at a 0.05 level of significance.

Presentation of Results

Research Question One: What is the effect of health education intervention on utilisation of healthcare services among the Federal Colleges of Education students in North-West Nigeria, after the intervention, based on cultural and social factors?

Table 1: Mean Scores of Responses on Utilisation of Healthcare Services Before and After the Health Education Intervention, Based on Cultural and Social Factors

Group	N	Mean	Std. Dev.	Mean Difference
Pretest	100	2.49	0.78	0.97
Post-test	100	3.46	0.69	

(Decision Mean = 2.50)

The result shows that the post-test mean score (Mean = 3.46, SD = 0.69) was higher than the pre-test mean score (Mean = 2.49, SD = 0.78), with a mean difference of 0.97. When compared to the decision mean of 2.50, the pre-test score was slightly below the benchmark, indicating that students initially underutilised healthcare services due to cultural and social barriers. However, the substantially higher post-test mean implies that the health education intervention had a strong positive effect on utilisation of healthcare services among the students across cultural and social factors in North West Nigeria.

Research Question Two: What is the difference between the control and experimental groups in the level of utilisation of healthcare services after health education intervention among Federal Colleges of Education students in North-West Nigeria, based on cultural and social factors?

Table 2: Mean Scores of Responses on the Difference Between Control and Experimental Groups in Utilisation of Healthcare Services After the Intervention, Based on Cultural and Social Factors

Group	N	Mean	Std. Dev.	Mean Difference
Control	100	2.42	0.64	1.04
Experimental	100	3.46	0.69	

(Decision Mean = 2.50)

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The result indicated that the experimental group (Mean = 3.46) had a higher level of utilisation of healthcare services compared to the control group (Mean = 2.42) after the health education intervention, with a mean difference of 1.04. Since both groups' mean scores were compared against the decision mean of 2.50, the experimental group's score was well above the benchmark, indicating effective utilisation of healthcare services, while the control group's score remained below the decision mean. This revealed that the health education intervention had the most substantial positive effect on improving healthcare service utilisation among students in the experimental group across cultural and social factors, compared to their counterparts in the control group.

Hypothesis One: There is no significant effect of cultural and social factors on health education intervention on utilisation of healthcare services among Federal Colleges of Education students in North-West Nigeria after the health education intervention.

Table 3: Paired-Sample t-test of Pretest and Post-test Scores on Utilisation of Healthcare Services, Based on Cultural and Social Factors

Group	N	Mean	Std. Dev.	Mean Diff.	df	t-value	p-value
Pretest	100	2.49	0.78	0.97	99	35.78	0.000
Post-test	100	3.46	0.69				

Table 3 revealed the results of a paired sample t-test conducted to determine whether there was a significant effect of cultural and social factors on health education intervention on utilisation of healthcare services among Federal Colleges of Education students in North West, Nigeria, after the intervention. The pretest mean score was 2.49, while the post-test mean score increased to 3.46, indicating an improvement in healthcare service utilisation following the intervention. The mean difference between the pretest and post-test scores was 0.97. The calculated t-value was 35.78 with 99 degrees of freedom, and the associated p-value was 0.000, which was less than the significance level of 0.05. This result led to the rejection of the hypothesis, which stated that there was no significant effect of cultural and social factors on health education intervention on utilisation of healthcare services. This implied that the health education intervention had a statistically significant positive effect on healthcare service utilisation based on cultural and social factors. The marked improvement in post-test scores affirmed that the intervention successfully enhanced students' utilisation of healthcare services, considering cultural and social factors.

Hypothesis Two: There is no significant difference between the control and experimental group on utilisation of healthcare services after health education intervention among Federal Colleges of Education students in North-West Nigeria, based on cultural and social factors.

Table 4: Independent-Sample t-test on the Difference Between Control and Experimental Groups, Based on Cultural and Social Factors

Group	N	Mean	Std. Dev.	Mean Diff.	df	t-value	p-value
Control	100	2.42	0.64	1.04	198	44.27	0.000
Experimental	100	3.46	0.69				

Table 4 showed the results of an independent t-test conducted to determine whether there was a significant difference in healthcare service utilisation between the experimental and control groups based on cultural and social factors after the health education intervention. The table indicated that the mean score of the experimental group was 3.46, while the control group recorded a lower mean score of 2.42, with a mean difference of 1.04. The calculated t-value was 44.27 with 198 degrees of freedom, and the p-value was 0.000. Since the p-value was less than the alpha level of 0.05, the result was statistically significant. The higher mean score of the experimental group affirmed that the health education intervention had a positive effect in enhancing their utilisation of healthcare services compared to the control group, which did not receive the intervention. Therefore, the hypothesis which stated that there was no significant difference between experimental and control groups on utilisation of healthcare services based on cultural and social factors was rejected. This

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implied that there was a significant difference between the experimental and control groups in their utilisation of healthcare services after the intervention.

Discussion of Findings

The finding that cultural and social factors significantly moderated the effect of the health education intervention on healthcare service utilisation ($t = 35.78, p = 0.000$) aligns with substantial prior research. Adebayo, Oladimeji, and Adepoju (2020) found that students from rural backgrounds were less likely to adopt new healthcare behaviours owing to entrenched traditional beliefs, indicating that cultural factors significantly moderate intervention effectiveness. Eze, Aniebue, and Uche (2019) demonstrated that cultural norms, such as gender roles discouraging women from seeking care without male permission, significantly affected intervention efficacy, while Bakare, Ogundele, and Adekunle (2020) found that religious and cultural norms significantly influenced the acceptance and effectiveness of health education interventions, particularly regarding sexual health services. The significant difference observed between the experimental and control groups ($t = 44.27, p = 0.000$) based on cultural and social factors is corroborated by Adebayo, Akinyemi, and Cadmus (2016), who found that whilst an experimental group showed significant improvements in clinic visits, socio-cultural beliefs continued to negatively influence healthcare-seeking behaviour, creating differential outcomes between groups. Oluwatoyin (2018) similarly demonstrated that cultural beliefs, such as a preference for traditional medicine, affected intervention outcomes differently between experimental and control groups, while Oluyemi, Adekunle, and Bamidele (2018) revealed that social factors such as peer influence and stigma around certain illnesses hindered full adherence to medical advice, creating significant differences between treatment groups. That the largest mean difference across the wider study was recorded for cultural and social factors suggests that structured, culturally responsive health education may be especially effective at addressing barriers rooted in belief and social norm, rather than in structural or economic constraint.

Conclusion

Based on the findings of the study, the following conclusions were made:

1. Before the health education intervention, cultural and social factors constrained the utilisation of healthcare services among Federal College of Education students in North-West Nigeria.
2. The health education intervention significantly enhanced the utilisation of healthcare services with respect to cultural and social factors, with students in the experimental group demonstrating markedly greater improvement than those in the control group.

Recommendations

Based on the conclusions, the study recommended the following:

1. School health workers should design and deliver culturally sensitive health education programmes that address traditional beliefs, religious values, and social stigma through community engagement and collaboration with cultural and religious leaders.
2. School management should institutionalise culturally adapted health education by training staff, developing context-specific educational materials in local languages, and incorporating cultural competence into all health promotion activities, with policymakers mandating the replication of such programmes across all colleges of education.

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