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ASSESSMENT OF KNOWLEDGE AND ATTITUDE TOWARDS THE PREVENTION OF PHARYNGITIS AMONG ADULTS IN MAKARFI LOCAL GOVERNMENT AREA, KADUNA STATE

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Abstract

This study assessed the knowledge and attitudes of adults towards the prevention of pharyngitis in Makarfi Local Government Area, Kaduna State. The objectives were to examine knowledge levels regarding the causes, symptoms, transmission, complications, and prevention of pharyngitis and to identify community-supported strategies for reducing its spread. The study adopted a descriptive survey design. A total of 400 questionnaires were distributed, out of which 394 were completed and retrieved. The questionnaire was structured into four sections addressing demographic data, knowledge of pharyngitis, and attitudes towards its prevention. Data were analysed using frequency tables, percentages, and mean scores interpreted with a four-point Likert scale. There is no significant Knowledge of pharyngitis, and attitudes towards its prevention have a p-value of 0.000 and 0.003, respectively. These indicate there is significant knowledge and attitude towards pharyngitis. Findings revealed that while most participants possessed sound knowledge of the causes and symptoms of pharyngitis, gaps still exist in recognising its complications and seeking timely treatment. Respondents showed a positive attitude towards prevention, especially favouring modern health approaches over traditional remedies. The study concludes that with the right support, adults in Makarfi LGA are willing to adopt preventive measures against pharyngitis. It recommends increased health education through implementing interventional programmes, integration of oral health into school curricula, and expanded access to medical care.

Keywords: Knowledge, Attitude, Prevention, Pharyngitis, Adults

Introduction

Globally, group A streptococcal pharyngitis affects an estimated 616 million people annually, with the burden disproportionately concentrated in low- and middle-income countries (Akorede et al., 2020). In high-income countries, public awareness, vaccination programs, and efficient healthcare systems have contributed significantly to the prevention and early management of pharyngitis. However, in developing countries, especially in tropical regions, overcrowding, poor hygiene, limited access to healthcare services, and lack of health education remain critical drivers of disease transmission and poor outcomes (Akorede & Toyin, 2020; World Health Organization [WHO], 2021).

Pharyngitis, commonly known as sore throat, is an acute inflammation of the pharynx that is predominantly caused by viral or bacterial pathogens, with Group A Streptococcus pyogenes (GAS) being the most clinically significant bacterial agent. It remains one of the most frequent reasons for outpatient visits globally, accounting for a significant burden on healthcare systems due to its high incidence and potential for complications such as rheumatic fever and post-streptococcal glomerulonephritis (WHO, 2021).

The predominant risk factors for pharyngitis include young age, particularly among school-aged children, seasonal outbreaks, and close contact with infected individuals, poor sanitation, overcrowded living conditions, and weakened immune systems due to malnutrition or chronic diseases (Abdulbaqi et al., 2019; Akorede et al., 2022; WHO, 2021). The clinical manifestations of pharyngitis depend on the etiological agent. Common signs and symptoms include throat pain, fever, difficulty swallowing, red or swollen tonsils, and tender cervical lymph nodes (CDC, 2022). If inadequately managed, pharyngitis can lead to significant complications such as acute rheumatic fever, post-streptococcal glomerulonephritis, peritonsillar abscess, and chronic pharyngeal infections. Diagnosis relies on clinical assessment, supported by laboratory tests like rapid antigen detection tests (RADTs) and throat cultures, which help distinguish bacterial from viral causes (Shulman *et al.,* 2021).

In Nigeria, upper respiratory tract infections (URTIs), including pharyngitis, are among the top five causes of outpatient clinic visits (Kabiru et al., 2024; Lawali et al., 2024). Despite the high prevalence of the disease, national health records and policies often lack a specific focus on pharyngitis, and there is limited empirical data on the knowledge, attitudes, and preventive behaviours among various population groups. Cultural practices, self-medication, and poor utilisation of healthcare facilities further complicate efforts to control the spread of the infection. The misuse of antibiotics in treating sore throat without medical diagnosis contributes not only to treatment failure but also to the growing threat of antimicrobial resistance (Olayemi et al., 2021).

Northwestern Nigeria is characterised by a mixture of urban and rural communities with significant variations in healthcare access, education, and disease awareness. Predominantly rural areas typify the challenges seen in many underserved

communities in Nigeria. Adults often lack formal health education and may rely heavily on traditional remedies and informal drug vendors for the management of infections (Yusuf et al., 2022).

In Nigeria, self-medication, delayed health-seeking behaviour, and a reliance on traditional or informal healthcare practices are prevalent, particularly in rural areas. These practices are often driven by inadequate knowledge about disease aetiology, transmission, and prevention (Abdulbaqi et al., 2024; Olubiyi et al., 2021; Olayemi et al., 2021). Moreover, adults who are caregivers or decision-makers in their households play a critical role in shaping health behaviours within the family (Abdulbaqi et al., 2025). Unfortunately, their awareness of the infectious nature of pharyngitis, its potential complications, and proper preventive measures is often limited. Despite the high number of outpatient consultations for sore throat and related symptoms, few studies have assessed community-level understanding and attitudes toward preventing pharyngitis, especially in under-researched areas like Makarfi LGA.

Methodology

The study adopted a descriptive survey research design. The population of the study comprised all adults in Makarfi Local Government Area of Kaduna State. The estimated population of Makarfi LGA was 216,600 (Nigeria Bureau of Statistics, 2025). A sample size of 400 pregnant women and 50 healthcare providers was selected for the study using both probability and non-probability sampling techniques. The sample size was determined using Taro Yamane's formula for finite populations. The instrument used for data collection in this study was a researcher-structured, closed-ended questionnaire. The questionnaire was divided into three sections: A, B, and C. Section "A" comprised the demographic characteristics of the respondents, while Section "B" consisted of six (6) items each on knowledge of pharyngitis and attitudes towards its prevention. To calculate the mean score of responses as shown by respondents, a modified four (4)-point Likert rating scale was used. Any mean score of response greater than or equal to 2.5 was regarded as positive, while any mean score of response less than 2.5 indicated a negative response.

To ensure content validity, the questionnaire and interview guide were reviewed by experts in public health education and research methodology. Their feedback was used to refine the items for clarity and relevance. A pilot study was conducted among 30 adults in the Igabi LGA to test the reliability and comprehensibility of the questionnaire. Ethical approval for the study was obtained from the Kaduna State Ministry of Health. Permission was also sought from the local government authorities and community leaders before data collection began. Informed consent was obtained from all participants after a clear explanation of the study's purpose, procedures, and their right to withdraw at any time without penalty. Trained research assistants visited selected households within the community. At each household, eligible adults were approached respectfully and provided with information about the study. Those who agreed to participate signed or thumb-printed a consent form before data collection. Structured questionnaires were administered through face-to-face interviews in the respondents' homes, with necessary clarifications provided by the research assistants. Responses were recorded directly on the questionnaires with participants' permission. Completed instruments were collected daily, checked for completeness, coded, and securely stored in preparation for analysis. Confidentiality of all information provided was strictly maintained.

The collected data underwent analysis using both descriptive and inferential statistics. Frequencies, percentages, means, and standard deviations were used to summarise demographic data and responses on knowledge of pharyngitis and attitudes towards its prevention. One-sample t-tests were applied to assess the knowledge of pharyngitis and attitudes towards its prevention. The Statistical Package for the Social Sciences (SPSS) software version 22 was used for data analysis.

Descriptive analysis of the participants' socio-demographic characteristics

The total number of four hundred (400) questionnaire was distributed, and three hundred and ninety-four (394) questionnaire were retrieved.

Table 1: Demographic Characteristics of the Participants

Variable	Variable Options	Frequency	Percentage %
Age	18 – 24years	128	33.0%
	25 – 31years	108	27.0%
	32 – 38years	100	25.0%
	39 years and above	58	15.0%
	Total	**394**	**100.0**
Occupation	Civil servant	72	30.0%
	Farmer	44	18.0%
	Trader	160	12.0%
	Artisan	118	40.0%
	Total	**394**	**100.0**
Level of Education	Non-formal Education	67	17.0%
	Primary	100	25.%
	Secondary	133	34.0%
	Tertiary	94	24.0%
	Total	**394**	**100.0**

Source: Field survey, 2024

Table 4.1 showed that on age distribution 18 – 24years has 128 (33.0%); 25 – 31years has 108 (27.0%); 32 – 38years has 100 (25.0%), and 39 years and above has 58 (15.0%). 39 years and above is the highest, while 18 – 24years is the lowest. The occupational distribution of Civil servants has 72 (30.0%); Farmer has 44 (18.0%); Trader has 160 (12.0%), and Artisan has

118 (40.0%). Trader is the highest while Farmer is the lowest. The level of education Non-formal Education has 67 (17.0%); Primary has 100 (25.0%); Secondary has 133 (34.0%), and Tertiary has 94 (24.0%). Non-formal Education is the highest, while Secondary is the lowest.

Answering the Research Questions

Research Question One: What is the level of knowledge on pharyngitis among adults in Makarfi LGA, Nigeria?

Table 2: Mean Score and Standard Deviation on the Level of Knowledge of Pharyngitis among Adults in Kaduna State, Nigeria.

S/N	ITEMS	SD	X̄
1	Pharyngitis is caused by both viral and bacterial infections.	0.749	3.06
2	Sharing eating utensils or drinks can transmit pharyngitis.	0.833	2.94
3	Sore throat is one of the common symptoms of pharyngitis.	0.393	3.20
4	Pharyngitis can lead to complications if left untreated.	0.718	3.17
5	Poor hygiene contributes to pharyngitis.	0.479	3.07
6	Cold weather increases the risk of developing pharyngitis.	0.563	2.95
	Aggregate	**0.623**	**3.07**

Source: Field Survey, 2025 (The benchmark mean was at 2.50)

The rating of the two groups in Table 2 Pharyngitis is caused by both viral and bacterial infections (3.06), Sharing eating utensils or drinks can transmit pharyngitis (2.94), Sore throat is one of the common symptoms of pharyngitis (3.20), Pharyngitis can lead to complications if left untreated (3.17), Poor hygiene contributes to pharyngitis (3.07), and Cold weather increases the risk of developing pharyngitis (2.95)

Research Question Two: What are the attitudes of adults toward the prevention of pharyngitis in Makarfi LGA**,** Kaduna State, Nigeria?

Table 3: Mean score and standard deviation on attitudes of adults toward the prevention of pharyngitis in Kaduna State, Nigeria.

S/N	ITEMS	SD	X̄
1	Regular hand washing prevents pharyngitis.	0.196	3.29
2	Covering the mouth when coughing reduces infection spread.	0.313	3.10
3	Seeking medical attention for throat pain is necessary.	0.255	3.19
4	Traditional remedies are more effective than medical treatment.	0.432	2.28
5	Health education should be promoted in the community.	0.615	3.34
6	Pharyngitis is a minor illness that doesn't need medical attention.	0.311	1.47
	Aggregate	**0.359**	**2.77**

Source: Field Survey, 2025 (The benchmark mean was at 2.50)

The rating of the two groups in Table 3 Regular hand washing prevents pharyngitis (3.29), Covering the mouth when coughing reduces infection spread (3.10), Seeking medical attention for throat pain is necessary (3.19), Health education should be promoted in the community (3.34) and the responses with negative responses are Traditional remedies are more effective than medical treatment (2.28) and Pharyngitis is a minor illness that doesn't need medical attention (1.47).

Hypotheses Testing

Table 4: One-sample t-test on the level of knowledge on pharyngitis among adults

Variable	N	Mean	Std. Dev.	t-value	df	p-value
The level of knowledge on pharyngitis among adults	394	3.07	0.623	4.020	394	0.000
Test Mean	394	2.50	0.000			

(t-critical = 1.98, p <0.05

The hypothesis that stated that there is no significant knowledge of pharyngitis among adults in Makarfi LGA, Kaduna State, is rejected. Since the p-value is far below 0.05, we reject the null hypothesis. The sample mean (3.07) is significantly higher than the test mean (2.50), indicating that the adults in this study have a significantly higher level of knowledge about pharyngitis than what would be expected at the neutral benchmark.

Table 5: One-sample t-test on attitudes of adults toward the prevention of pharyngitis

Variable	N	Mean	Std. Dev.	t-value	df	p-value
Attitudes of adults toward the prevention of pharyngitis	394	2.77	0.359	6.772	393	0.003
Test Mean	394	2.50	0.000			

(t-critical = 1.98, p <0.05, df=394, t-vale=6.772)

The hypothesis stated that there is no significant attitude of adults towards the prevention of pharyngitis in Makarfi LGA, Kaduna State, and is therefore rejected. Adults in this study have significantly more positive attitudes toward preventing pharyngitis than the neutral benchmark. The mean score of 2.77 (on a 4-point scale) indicates moderate-to-positive attitudes

overall, although some misconceptions remain, for example, a relatively high mean score for traditional remedies (2.28) and a low score for "pharyngitis is minor and needs no medical attention" (1.47), showing disagreement with neglectful attitudes.

Discussion of Findings

Hypothesis one: The results of this study indicated that the level of knowledge of pharyngitis among adults in the sampled population was significantly higher than the neutral benchmark score of 2.50 ($t = 4.020$, $df = 394$, $p < 0.001$). The aggregate mean score of 3.07 ± 0.623 suggests that respondents generally demonstrated good awareness of the causes, modes of transmission, symptoms, potential complications, and risk factors associated with pharyngitis. Specifically, the majority of participants agreed that pharyngitis can be caused by both viral and bacterial infections, can be transmitted through sharing utensils or drinks, and that poor hygiene and cold weather may increase susceptibility.

These findings are consistent with Onyeagba et al. (2019), who reported that urban adult populations in Southeastern Nigeria exhibited moderate-to-high knowledge of upper respiratory tract infections, largely due to increased exposure to public health campaigns and informal health education from healthcare workers. Similarly, Akindele and Okoro (2021) found that adults in Lagos with higher knowledge scores were more likely to engage in preventive practices such as avoiding sharing eating utensils and seeking early treatment for sore throat symptoms.

However, the present study also notes slight variability in knowledge levels, as indicated by the standard deviation (0.623), suggesting that while the overall understanding is good, certain misconceptions or gaps may persist among subgroups. This aligns with Mbonu, Ibe, and Uche (2020), who observed that while general awareness of throat infections was high in urban communities, specific misconceptions about viral versus bacterial causation and the role of environmental factors remained prevalent.

Hypothesis Two: The present findings indicate that adults generally hold favourable attitudes toward preventing pharyngitis, as evidenced by an aggregate mean score of 2.77, significantly higher than the neutral value of 2.50 ($p = 0.003$). Positive preventive attitudes were reflected in high agreement with measures such as regular handwashing (mean = 3.29), covering the mouth when coughing (mean = 3.10), and the importance of community health education (mean = 3.34). This aligns with World Health Organization (WHO, 2021) recommendations that respiratory infection prevention is best achieved through hygiene promotion, cough etiquette, and early care seeking.

These findings are consistent with Akindele and Okoro (2021), who observed that Nigerian adults with higher health literacy levels were more likely to endorse preventive attitudes toward upper respiratory tract infections, including pharyngitis. Similarly, Isezuo et al. (2023) found that although knowledge levels among healthcare workers were mixed, preventive attitudes such as promoting hygiene and discouraging close contact with infected individuals were generally positive.

However, the study also revealed areas of attitudinal weakness, such as moderate agreement with traditional remedies being more effective than medical treatment (mean = 2.28). This finding mirrors Mbonu, Ibe, and Uche (2020), who reported that reliance on traditional medicine remained common in rural Nigerian communities, sometimes delaying medical care and increasing the risk of complications like rheumatic fever. The very low score (mean = 1.47) for the statement "pharyngitis is a minor illness that doesn't need medical attention" is encouraging, as it suggests respondents reject complacency and recognize the potential seriousness of the illness. This aligns with Uzodimma et al. (2017), who stressed that untreated bacterial pharyngitis in children can have severe health consequences, underscoring the importance of prompt medical attention.

Implications for Public Health Practice

The findings from both variables, knowledge (mean = 3.07, $p < 0.001$) and attitudes (mean = 2.77, $p = 0.003$), demonstrate that adults in the study population generally possess good awareness of pharyngitis and maintain moderately to strongly positive attitudes toward its prevention. These have several important implications:

1. Leverage Existing Awareness to Drive Behaviour Change: High knowledge scores indicate that public health agencies have a foundation to build upon. Rather than focusing solely on basic awareness creation, future interventions can emphasise behavioural reinforcement and translation of knowledge into consistent preventive practices, in line with Ajzen's (1991) Theory of Planned Behaviour.
2. Address Persistent Misconceptions: While most respondents demonstrated accurate knowledge and positive attitudes, some misconceptions persist, such as moderate belief in the superiority of traditional remedies over medical treatment. Public health campaigns should therefore incorporate culturally sensitive educational messages that address these beliefs without alienating community members, a strategy shown to be effective in respiratory health promotion (Mbonu et al., 2020).
3. Integrate Knowledge and Attitude-Based Interventions: Since both knowledge and attitudes were significantly above the neutral benchmark, integrated interventions combining factual information (causes, symptoms, complications) with attitude-shaping messages (perceived seriousness, community responsibility) could yield stronger behavioural outcomes.
4. Strengthen Community Health Structures: High agreement with community health education suggests that community health workers and peer educators can be effective channels for reinforcing prevention messages. Embedding these within existing local health committees could improve outreach, especially in rural areas.
5. Inform Policy and Guideline Development: The positive baseline established here can guide local health policy, including the development of a national pharyngitis management protocol (as recommended by Coutinho, 2021) that includes both prevention and treatment pathways accessible at the primary care level.

6. Monitor and Sustain Gains: Long-term surveillance is needed to determine whether these favourable knowledge and attitude levels are sustained and whether they translate into reduced incidence of pharyngitis and related complications over time.

Recommendations

1. Strengthen Community Health Education: Leverage the existing favourable knowledge and attitudes toward pharyngitis prevention by conducting regular community health education programs that emphasise correct preventive practices, early health-seeking behaviour, and recognition of symptoms.
2. Address Misconceptions About Traditional Remedies: Develop culturally sensitive communication strategies that respect local beliefs while clarifying the limitations of traditional remedies and highlighting the effectiveness of evidence-based medical treatment.
3. Integrate Knowledge and Attitude Interventions: Design public health campaigns that combine factual health information with messages that positively influence attitudes, ensuring that knowledge translates into preventive actions.
4. Empower Community Health Workers: Train and equip community health workers to serve as primary agents for pharyngitis prevention education, given their accessibility and trust within communities.
5. Develop National Guidelines for Pharyngitis Management: The Ministry of Health, in collaboration with professional bodies, should establish standardised protocols for the prevention, diagnosis, and treatment of pharyngitis, adaptable for use at primary healthcare levels.
6. Monitor and Evaluate Intervention Impact: Implement a monitoring system to assess whether knowledge and attitude improvements lead to reduced incidence of pharyngitis and related complications over time.

Conclusion

This study revealed that adults in the surveyed population demonstrated good knowledge (mean = 3.07) and positive attitudes (mean = 2.77) toward the prevention of pharyngitis, both significantly higher than the neutral benchmark ($p < 0.05$). These results suggest that awareness and prevention-mindedness are already present within the community, providing a strong foundation for further public health action. However, certain misconceptions, particularly regarding the role of traditional remedies, remain and could limit the full translation of knowledge and attitudes into optimal preventive behaviours. Public health interventions should therefore focus on reinforcing correct practices, dispelling misconceptions, and promoting early medical attention for suspected pharyngitis cases. In building on the existing knowledge base and fostering attitudes that support evidence-based prevention, policymakers, healthcare providers, and community leaders can work together to reduce the burden of pharyngitis and improve respiratory health outcomes. Sustaining these efforts will require continuous education, cultural sensitivity, and integration of community-based health strategies into broader public health planning.

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