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Original Research Article

A COMPARATIVE WORKFORCE ASSESSMENT IN TERTIARY HEALTHCARE SETTINGS IN NIGERIA ON HEALTH-SEEKING PATTERNS AND SERVICE UTILISATION

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ABSTRACT

Healthcare workers occupy a unique position in the health system—they deliver care, influence patient health behaviours, yet often struggle to prioritise their own well-being. Despite their knowledge and access to services, evidence consistently shows delayed care-seeking, self-treatment, and low utilisation of preventive services among this workforce. This study examined the health-seeking patterns and utilisation of healthcare services among clinical and non-clinical staff in two tertiary healthcare institutions in Nigeria, with the aim of identifying gaps and predictors that shape their healthcare behaviour. A comparative, facility-based cross-sectional design using a concurrent mixed-method approach was implemented among 460 respondents—230 clinical and 230 non-clinical staff. Quantitative data were collected using a pre-tested, semi-structured interviewer-administered questionnaire, while qualitative insights were obtained through key informant interviews. Data analysis included descriptive statistics, chi-square tests for associations, and binary logistic regression to identify predictors of service utilisation ($p<0.05$). Qualitative data were analysed using NVIVO 14. Findings revealed notable differences in age distribution, perceived health status, health behaviours, and health-seeking practices between both groups. Inappropriate health-seeking behaviour was more common among clinical staff (87.4%) than non-clinical staff (80%). Utilisation of healthcare services was generally poor across the workforce, with non-clinical staff (83.9%) slightly more likely to underutilize services than clinical staff (82.2%). Predictors of good utilization among clinical workers included being on regular medication,

appropriate health-seeking behaviour, and access to health insurance. Among non-clinical workers, ever consulting a doctor and having appropriate health-seeking behaviour significantly influenced utilization patterns. Overall, despite reporting good perceived health status, both clinical and non-clinical staff demonstrated poor utilization of formal healthcare services and inconsistent engagement in preventive care. The patterns uncovered underscore a critical need for institutional policies that encourage routine medical check-ups, strengthen occupational health systems, improve access to health insurance, and address cultural norms around self-treatment. Strengthening the health-seeking culture of healthcare workers is essential not only for workforce well-being but also for sustaining quality care delivery within Nigeria's tertiary health system.

Keywords: Health seeking patterns, Clinical and non-clinical workforce, Tertiary institution

1.0 INTRODUCTION

Health-seeking behaviour reflects the actions individuals take when they perceive a health challenge, ranging from preventive practices to decisions about when and where to seek care.(Poortaghi *et al.,* 2015) It encompasses behaviours adopted during actual or potential episodes of illness and includes actions aimed at disease prevention, early diagnosis, treatment, and mitigation of complications.(Adewoye *et al.,* 2019) In many low- and middle-income countries, including Nigeria, individuals often begin with self-treatment or informal care pathways before approaching formal health facilities, a pattern shaped by cultural norms, socioeconomic factors, and health system challenges.(Ellis *et al.,* 2012) Healthcare workers—both clinical and non-clinical—form the backbone of any health system and are expected to model appropriate health behaviours (Osei-Yeboah *et al.,* 2018) Despite their training, access to health information, and proximity to medical services, research shows that healthcare workers frequently delay seeking care, self-prescribe medications, avoid routine check-ups, and underestimate the severity of their symptoms.(Adamu *et al.,* 2018) Long working hours, high patient loads, burnout, perceived stigma, fear of confidentiality breaches, and the desire to appear resilient often hinder their willingness to utilise healthcare services.(Obiebi *et al.,* 2020). These behaviours contribute to preventable morbidity, poor mental health outcomes, and in some instances, sudden deaths resulting from previously undiagnosed conditions.(Obiebi *et al.,* 2020)

Clinical healthcare workers—such as doctors, nurses, pharmacists, laboratory scientists, radiographers, and therapists—often have direct patient contact and extensive medical knowledge, yet paradoxically are more likely to self-diagnose and self-treat.(Schou-Bredal I, Bonsaksen T, Ekeberg O, Skogstad L, 2022)(Bana *et al.,* 2016) Non-clinical healthcare workers—including administrative staff, records officers, porters, human resource personnel, billing officers, and information technology personnel—though not directly involved in clinical care, also face workplace stressors, limited health literacy in some cases, and inconsistent engagement with formal health services.(Schou-Bredal I, Bonsaksen T, Ekeberg O, Skogstad L, 2022)(Adamu *et al.,* 2018) Together, both groups operate in environments known to carry high occupational risks, including infectious exposures, ergonomic hazards, and psychosocial stress.(Obiebi *et al.,* 2020) Patterns of healthcare utilisation among healthcare workers therefore reflect a complex interplay of predisposing factors (e.g., age, gender, beliefs), enabling factors (e.g., income, insurance coverage, workplace policies), and need factors (e.g., perceived severity of illness, chronic disease status).(Brandão *et al.,* 2022) Models such as the Health Belief Model and Andersen's Behavioural Framework highlight how these factors influence whether individuals recognise symptoms, perceive vulnerability, and ultimately decide to seek formal care.(Brandão *et al.,* 2022)(Jones *et al.,* 2015) Understanding these determinants is essential for promoting a healthy and productive workforce, particularly in tertiary health facilities where workloads are high and service demands are intense. The Nigerian health sector continues to experience workforce shortages, increased administrative demands, and rising rates of burnout, all of which heighten the risk of delayed care-seeking among staff. Reports of avoidable illness, poor uptake of routine health screening, and preventable deaths among healthcare workers reinforce the need for systematic investigation into their health-seeking patterns.(Adamu *et al.,* 2018) Yet, existing studies largely focus on clinical staff, with limited comparative evidence on non-clinical workers who also make up a significant portion of the hospital workforce.(Adamu *et al.,* 2018). Healthcare workers—both clinical and non-clinical—play a critical role in ensuring the functioning of the health system, yet paradoxically often struggle to prioritize their own health.(Mohanty *et al.,* 2019) Despite superior knowledge of diseases and unlimited proximity to healthcare resources, many healthcare

workers delay seeking care, rely on self-prescription, avoid routine screenings, and normalize working through illness.(Peleg *et al.,* 2012) Factors such as long working hours, emotional exhaustion, fear of stigma, confidentiality concerns, and a culture that valorizes endurance make formal care-seeking particularly challenging.(Mohanty *et al.,* 2019) These behaviors contribute to preventable morbidity, overlooked chronic conditions, reduced productivity, and avoidable deaths within the health workforce. Clinical healthcare workers, including physicians, nurses, pharmacists, laboratory scientists, and allied health professionals, often possess a strong sense of self-efficacy that drives self-diagnosis and informal consultations.(Fawibe *et al.,* 2017)

Non-clinical healthcare workers—administrators, records officers, porters, human resource staff, information technology personnel, and others—though not directly involved in patient care, face their own stressors, health literacy limitations, and access barriers.(Adamu *et al.,* 2018) Both groups operate in high-demand environments with well-documented occupational risks such as infectious exposures, ergonomic strain, and psychological stress.(Joseph & Joseph, 2016) Theoretical models such as the Health Belief Model and Andersen's Behavioral Framework demonstrate that health-seeking behavior and service utilization result from an interaction of predisposing (e.g., age, gender, beliefs), enabling (e.g., income, insurance, workplace policies), and need factors (e.g., perceived severity, chronic illnesses).(Babitsch *et al.,* 2012) Understanding how these factors operate among healthcare workers is critical for strengthening occupational health systems, reducing preventable morbidity, and ensuring a resilient workforce. Despite being custodians of health, many healthcare workers in Nigeria exhibit poor health-seeking behavior and low utilisation of formal healthcare services, leading to delayed diagnosis of preventable conditions, reduced well-being, and documented cases of sudden, avoidable deaths within the workforce.(Oluwakemi Osigbesan, 2021) Evidence remains limited—particularly comparative evidence on clinical versus non-clinical staff in tertiary facilities—hindering effective policy and occupational health planning. A clearer understanding of how different categories of healthcare workers seek and use health services is essential for designing targeted interventions, improving workforce health, strengthening service delivery, and informing institutional policies that promote routine screening, early care-seeking, and improved access to preventive care. This study therefore examines and compares the health-seeking patterns and healthcare service utilisation among clinical and non-clinical workers in tertiary healthcare

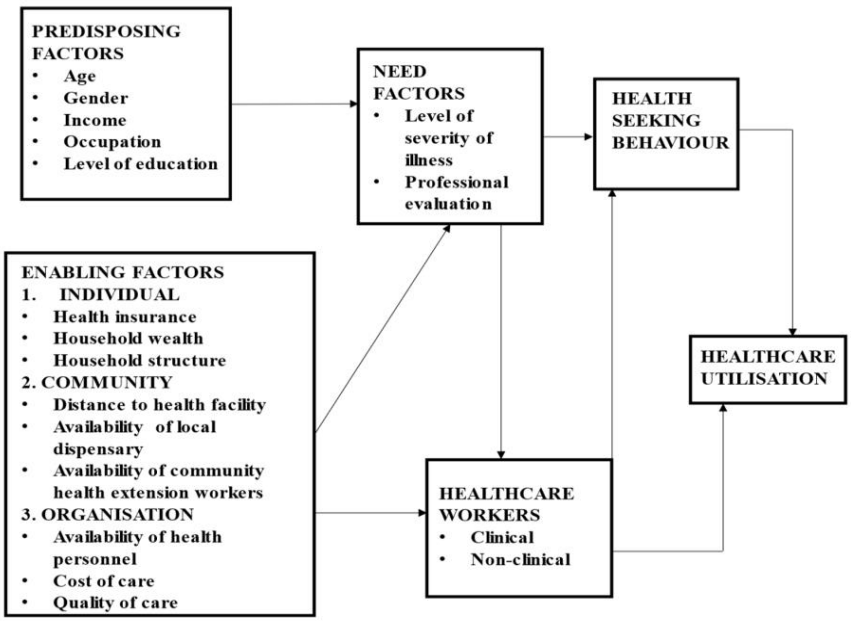

Figure 1: Modified Conceptual Framework of the Health-Seeking Behaviour and Utilisation of Healthcare Services.

By identifying the behavioral trends, barriers, and predictors associated with healthcare utilization across both groups, the study provides evidence to guide policy interventions, strengthen occupational health systems, and promote a culture of preventive healthcare within the workforce.

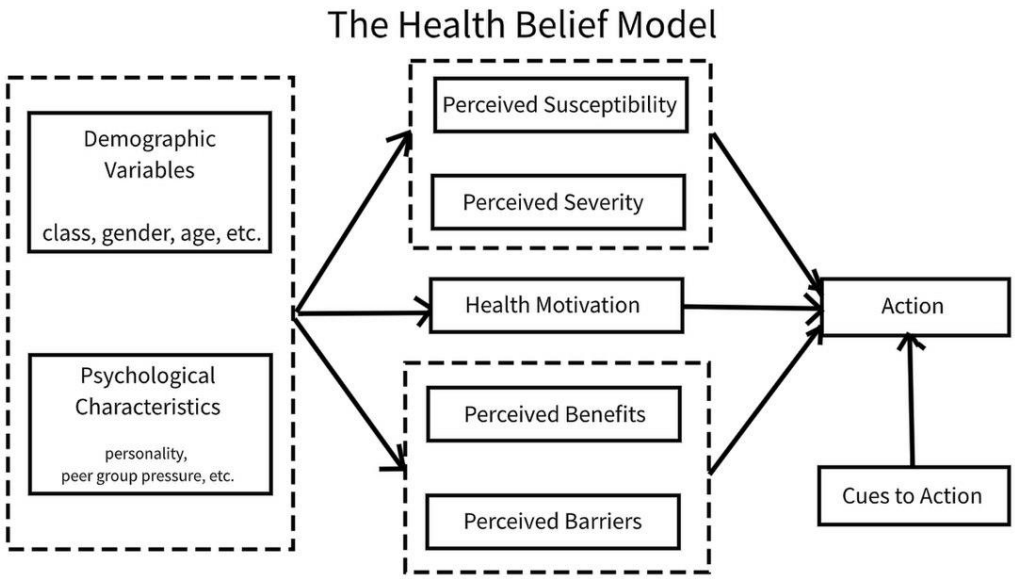

Figure 2: The Health Belief Model[4]

2.0 METHODOLOGY

Study area

The study was conducted in the two tertiary health facilities located in Ondo state. Ondo state is a state in southwestern Nigeria. It was created on February 3, 1976, from the former western state (Ondo province).(Felix Omotosho *et al.,* 2020) Ondo state is bordered by Ekiti state (formerly part of the state) to the North, Kogi state to the North East, Edo state to the East, Delta state to the South East, Ogun state to the South West, Osun state to the North West and the Atlantic Ocean to the South. Ondo state includes Mangrove swamp forest near the Bight of Benin, Tropical Rainforest in the central part and Wooded Savanna on the gentle slopes of the Yoruba hills in the North.[10] The state's capital is Akure, the former capital of the ancient Akure kingdom. Her crop of educated elites has led to it being classified as one of the most educationally advanced states in Nigeria. Nicknamed the 'Sunshine State', Ondo state is the 19th most populated state in the country.(Felix Omotosho *et al.,* 2020) It is also the 25th largest state by landmass, with a current population of 5,372,477.(Felix Omotosho *et al.,* 2020)

The state is predominantly Yoruba, where the Yoruba language is commonly spoken.[10] The state economy is dominated by the petroleum industry, with cocoa production, asphalt mining and activities utilising the state's extensive coastline also serving as major economic factors. Ondo state has eighteen local government areas (LGAs), the major ones being Akoko, Akure, Okitipupa, Ondo, Ilaje, Idanre and Owo. The two tertiary health facilities in the state are public-owned and they are located in Qwo and Ondo towns. The total number of healthcare workers in the state is about 8,805.(Ojajuni OJ, Atanlogun SK, 2013)

The ethnic composition of the Ondo state is largely from the Yoruba subgroups of the Idanre, Akoko, The Edo speaking, Akure, Ikale, Ilaje, Ondo and Owo. Ijaw people. The people are mostly subsistence farmers, fishermen, and traders. The vast majority of the population are Christians, while the minority practices Islam and traditional worship.(Felix Omotosho *et al.,* 2020)

Study sites

The General Hospital, Owo, established in 1989 and owned by the Ondo state government, was taken over by the Federal Government of Nigeria and re-designated as Federal Medical Centre, Owo, in 1993. Federal Medical Centre (FMC) is a Federal Tertiary Hospital that is located in Owo, a city in Ondo state, Southwestern Nigeria. Federal Medical Centre, Owo, a 300-bedded hospital was one of the five pioneer Federal Medical Centres established by the Federal Government of Nigeria in 1993 in line with the government policy to establish Federal Medical Centres in states without federal government owned tertiary hospitals. University of Medical Sciences Teaching Hospital (UNIMEDTH), Ondo was formed following the amalgamation of seven health institutions in Ondo state to form a multi-complex teaching hospital. Those institutions include: Trauma and Surgical Centre, Kidney Care Centre, Mother and Child Hospital, State Specialist Hospital Ondo, State Specialist Hospital Akure, Millennium Eye Centre, and Dental Headquarters Akure. The teaching hospital was established in December 2015, has a 300-bedded capacity and a total staff population of 1,146.(Article & Thinking, 2016)

Study design

This research is a comparative facility-based cross-sectional study. The research utilised a concurrent mixed methods approach, which comprised surveys and key informant interviews.

Study population

Quantitative survey

The study population comprised clinical healthcare workers (doctors, nurses, pharmacists/pharmacy technicians, physiotherapists, laboratory scientists/technicians, and therapists/technologists) and non-clinical healthcare workers (administrative, account, works and services and medical records) in Federal Medical Centre Owo and University of Medical Sciences Teaching Hospital Ondo, Ondo state, Nigeria.

Qualitative survey

For the key informant interview (KII), the study population was drawn from healthcare workers (Head Clinical Services, Director of Administration, Head Nursing Services, ARD president, NANNM president, MAHWUN chair and JOHESU president) who doubled as stakeholders in the selected tertiary health facilities.

Inclusion criteria

1. Male and female employees who have worked for more than six months in the selected facilities. This is because, within six months, they are still under probation and would be required to do certain documentation in order to be stable and well-established in the system.
2. Healthcare workers who are willing to participate in the study.

Exclusion criteria

Part-time staff such as youth corps, interns, and contract staff. This is to eliminate some interfering factors, such as the absence of medical insurance, cost of care, salary issues and job stability.

1. Staff not available during data collection (due to annual leave, maternity leave, study leave, or outside posting) and any members of staff who are ill and unable to come to work.

Sample size determination

The formula for the comparison of proportions of two independent groups was used·(Suresh K.P, 2012)

$$n = \frac{(Z\alpha + Z\beta)^2 [P_1(1-P_1) + P_2(1-P_2)]}{(P_2-P_1)^2}$$

$$n = \frac{(1.96 + 0.84)^2 [0.126(1-0.126) + 0.226(1-0.226)]}{(0.226-0.126)^2}$$

$$n = \frac{(2.8)^2 [(0.126 \times 0.874) + (0.226 \times 0.774)]}{(0.1)^2}$$

$$n = \frac{7.84[(0.110) + (0.175)]}{0.01}$$

$$n = \frac{7.84 \times 0.285}{0.01}$$

n = 223.

The total population of healthcare workers (clinical and non-clinical) in FMC Owo and UNIMEDTH, Ondo state was about 2,397, which is less than 10,000.(Ondo State Ministry of Health, 2024) Hence, a finite correctional formula was applied.

$$Nf = \frac{n}{1 + \frac{n}{N}}$$

Nf = corrected sample size
n = sample size determined when total population is less than 10,000
N = the size of the population from which the sample is to be selected
Nf = 204.

Adjusting for non-response, assuming a non-response rate of 10%, the sample size was adjusted using the formula:

$$nf = \frac{n}{1-NR}$$

nf = 230

This gave an overall sample size of 460 (230 clinical and 230 non-clinical healthcare workers).

Sampling technique

Quantitatively

A Two-stage sampling technique was used for the selection of respondents.

Stage 1: Purposive selection of the two tertiary health facilities in Ondo state (UNIMEDTH ONDO & FMC OWO) was done.

Stage 2: A list comprising updated names of all active clinical and non-clinical staff was obtained from the nominal roll at the administrative office of the hospitals. Proportional allocation to size was calculated for each cadre using the formula below:

1. Number of clinical workers sampled = Population of each clinical cadre / Total Population of clinical workers in each facility × 115. This is as shown in Table 1 below
2. Number of non-clinical workers sampled = Population of each non-clinical cadre / Total population of non-clinical workers in each facility × 115. This is as shown in Table 2 below

Table 1: Number of clinical healthcare workers selected in FMC OWO and UNIMEDTH

CADRES	**FMC OWO**		**UNIMEDTH**	
	No of Staff in FMC Owo	**Number Selected in FMC Owo**	**No of Staff in UNIMEDTH**	**Number Selected in UNIMEDTH**
Doctors	205	33	185	27
Nurses/CHEW	361	57	426	61

Laboratory	74	12	106	15
Physiotherapy	6	1	38	6
Pharmacy	26	4	31	4
Therapist/Technologist	52	8	14	2
TOTAL	724	115	800	115

Table 2: Number of non-clinical healthcare workers selected in FMC OWO and UNIMEDTH

DEPARTMENTS	**FMC OWO**		**UNIMEDTH**	
	Number of Staff in FMC Owo	**Number Selected in FMC Owo**	**Number of Staff in UNIMEDTH**	**Number Selected in UNIMEDTH**
Administrative	271	59	175	60
Account	86	19	15	5
Works and Services	115	25	19	7
Medical records	55	12	125	43
TOTAL	527	115	334	115

Qualitative study

In the investigation of health-seeking behaviour and health services utilisation among clinical and non-clinical health workers in tertiary health facilities in Ondo State; twelve key informant interviews (KIIs) were conducted face-to-face with seven male and five female participants working at the University of Medical Health Sciences (UNIMED), Ondo, and Federal Medical Centre (FMC), Owo, both in Ondo State. These key informants are experts who have adequate knowledge on the research topic as it relates to the health facility.

Six healthcare workers (Head Clinical Services, Director of Administration, Head Nursing Services, ARD president, NANNM president, MAHWUN chair and JOHESU president) were selected by purposive sampling from each health facility, which then made the number of key informant interviews (KII) conducted to be twelve in total.

Quantitative instrument

A semi-structured interviewer-administered questionnaire was used to elicit data from respondents in the English language. The instrument was adapted from a review of available literatures on health-seeking behaviour and utilisation of healthcare services to suit the objectives of this study. The questionnaire was pretested among clinical and non-clinical healthcare workers in similar settings not selected for the study. Ten percent of the estimated sample size was used for the pre-test, and necessary modifications and corrections were made to the questionnaire before its final administration to the main study. This helped to address the appropriateness of wordings of the questionnaire, resources needed to carry out the data collection exercise, feasibility of the designed instruments for data collection and analysis. The reliability coefficient of the scaled questions on health seeking behaviour was 85% more than the expected minimum of 70%.

The validity of the instrument was determined by face and content validity criteria. The face validity was obtained by giving the instrument to 5 experts in the field of community health to evaluate its validity. Their judgement was used to modify the tool before using the instrument for field testing. The instrument was then examined by an independent, versatile researcher for content coverage and suitability for the study, following which the instrument was adjudged valid. The content validity of the questionnaire was calculated using a content validity index (CVI). Experts rated each item of the questionnaire on a 4-point scale of relevance (1 not relevant, 2 = somewhat relevant, 3 = quite relevant, 4 = highly relevant). For each item, the cumulative content validity index (I-CVI) was computed by the number of raters

who gave a rating of 3 or 4, divided by the total number of experts. All the experts who gave either a value of three or four for all the items were given an I-CVI that is acceptable. This was in line with Lynn, who posited that when there are five or fewer experts, the I-CVI must be ≥ 0.85.
The questions were used to assess and compare the health-seeking behaviour, patterns of utilisation of healthcare services and the factors associated with the utilisation of healthcare services by healthcare workers in Federal Medical Centre Owo and UNIMEDTH Ondo.

Qualitative instrument
Key informant interview (KII) was conducted for the policymakers and unit heads of the selected health facilities using a key informant interview guide developed from previous literatures on similar subject. The interview guide was pre-tested among healthcare workers in other health facilities that were not used for the study, before actual data collection to ensure the questions are well-defined and presented in a logical manner to aid participant's understanding.
The information gathered included the health facility's policies on taking care of unwell clinical as well as the non-clinical healthcare workers, the assessment of health-seeking behaviour of the entire workforce of the facility, patterns of utilisation of healthcare services and the factors associated with the utilisation of healthcare services by healthcare workers in FMC Owo and UNIMEDTH Ondo.

Data collection methods
Quantitative data collection method
Questionnaires were interviewer-administered and were administered after written informed consent was obtained, and each questionnaire was checked daily for accuracy and completeness. The field supervisor's daily briefing and reviewing of activities was also carried out.
Four research assistants with a minimum educational qualification of Ordinary National Diploma (OND) were trained by the researcher. The purpose of the training was to ensure that the research assistants understand the study objectives and protocol, as well as learn the correct interview techniques. The training was scheduled for two days.

Qualitative data collection method
The research assistants who assisted with qualitative data collection were trained alongside with the research assistants for quantitative data collection. However, more emphasis was placed on how to use the KII guide for this group. The interviews were conducted between 15 and 26 April 2024. An interview lasted about 40 minutes at selected offices/venues and at a convenient time as requested by each participant. All sessions were conducted in English, but participants were given the freedom to express themselves in Yoruba if they felt the need to do so; and all were translated and transcribed accordingly. Each interview consisted of a moderator and a note-taker. All sessions were recorded with Sony audio recorders. This was supplemented by the use of a phone device to ensure the security of the data collected. However, the audio recorded on the phones were deleted after comparison with the audio on the recorders for both clarity and audibility.
Finally, all audio files were transcribed into English by experts in the field, and non-verbal responses noted were collated. All identifiers inadvertently revealed by the interviewees were removed. The supervisor, researcher and analyst oversaw the data preparation process to ensure the trustworthiness of the data and quality control of the interviews and transcripts.
Dependent variables
1. Health-seeking behaviour (Primary)
2. Utilisation of health services (Secondary)

Independent variables
1. Socio-demographic (predisposing) factors such as age, gender, marital status, educational level, occupation, availability of health insurance, years of practice, employment status and religion.
2. Personal and family factors, such as income.

Scoring and classification of variables

The questionnaire had five sections. Section A is the socio-demographic characteristics and did not have any score. Sections B, C, and D had multiple questions where the frequency of responses was computed and some were allocated marks, with each correct response having a maximum of 1 mark and minimum of 0 mark for the incorrect responses, while section E is on the perceived utilisation of healthcare services and was not scored.

Health behaviour of healthcare workers

The assessment of health behaviour of healthcare workers was done with questions adapted from the work of Bahrami Mohammad and Qiqi Zhang. The health behaviour of healthcare workers serves as a covariate for assessing the health-seeking behaviour. The minimum and maximum possible score for the section was 0 and 6 marks respectively, and the assessed score was converted to a percentage by dividing the calculated assessed score by the maximum possible score multiplied by 100. The scoring was then categorised as:

Good health behaviour – 75% and above

Poor health behaviour – less than 75%

Quantitative data analysis

The questionnaires used to obtain quantitative data was sorted and cross-checked for errors and omissions, which was corrected before data coding, entry and analysis using SPSS version 27.0. Frequencies and percentages were used to summarise categorical variables of interest. Appropriate tables and charts were used to present results.

Socio-demographic, individual, community, organisational and need factors relating to health-seeking behaviour and utilisation of healthcare services were analysed using univariate analysis. bivariate analysis using chi-square was used to measure the association between the socio-demographic variables and the dependent variables. The p-value of less than 0.05 was set as the level of significance.

Qualitative data analysis

All audio files were transcribed into English and all identifiers inadvertently revealed by the interviewees were removed, hence the use of 'Clinical 1, Clinical 2....6' as well as 'non-clinical 1, 2...6'. Similarly, names, job titles, places or identifications mentioned in the interviews were coded as 'XXX' in the transcripts. This approach was selected because it provides a systematic method for organising, analysing and presenting qualitative data collected from multiple sources. In the context of the above definitions, a pre-codebook was developed and reviewed by the researcher before it was used to develop themes. I then read the transcripts to become familiar with the data before coding or extracting relevant content. The extracted content was then subject to iterative scrutiny against the themes that had been deductively derived, with constant reference to the research questions. This process yielded eight themes and eight sub-themes. However, due to inconsistency in the data collected, there was a revision of the themes which were labeled and described.[8]

Consequently, a theme was removed, resulting in the identification of nine themes and eight sub-themes as the codes in the qualitative software used for the analysis. Subsequently, the themes underwent further refinement and were structured hierarchically according to the objectives and research questions, and were coded using NVIVO 14 QSR Lumevero (Incorporated) software.

Quality assurance and quality control

In order to ensure quality assurance and control, effort was made to recruit highly experienced research assistants who were trained with the use of the research instrument. In addition, on-field supervision was carried out, as well as debriefing at the end of each day's work to discuss challenges encountered and modalities for overcoming them would be agreed upon. The principal investigator vetted all instruments returned for each day and gave feedbacks as appropriate to the research assistants. Data was sorted and cross-checked for errors and omissions, which was corrected before data coding, entry and analysis using SPSS version 27.0.

Ethical considerations

Ethical approval for this study was obtained from the Ondo State Ministry of Health Ethics Committee as well as the Health Research and Ethics Committees of Federal Medical Centre, Owo and University of Medical Sciences Teaching Hospital, Ondo prior to the commencement of the study. In addition,

Confidentiality of data from respondents

Serial numbers and codes were used to identify respondents and the research assistants who interviewed them. The questionnaires were kept in a safe place accessible to the researcher alone. The respondents were assured that their responses would not be reported individually but as part of an overall study and that they would not face any consequences for the responses provided.

Beneficence to participants

The study is to assess and compare the health-seeking behaviour and utilisation of health services among clinical and non-clinical healthcare workers in the selected tertiary hospitals in Ondo state. Respondents were counselled and guided appropriately on questions concerning other aspects of their health not covered in the study.

Non-maleficence to participants

The study was not invasive and without any harm to respondents since only questionnaires was used.

Freedom to decline or withdraw from study

Participants were informed of their freedom to decline or opt out of the study at any time and were assured that there will not be any consequences for refusing to participate in the study.

Limitations

This study was a cross-sectional study that assessed and compared the health-seeking behaviour and utilisation of healthcare services among clinical and non-clinical healthcare workers and therefore, relied on self-reported questionnaires, which were prone to recall bias. This was reduced by limiting enquiries on health-seeking behaviour and utilisation of healthcare services to three months, careful selection of research questions that provided more information on the study subject, and also ensuring that the research assistants were well trained. Another limitation was the social desirability bias, which was found among healthcare workers who had inappropriate health-seeking behaviour as well as poor utilisation of health services. This was also demonstrated by healthcare workers who had poor health behaviour, a covariate of health-seeking behaviour.

3.0 RESULTS

Table 3: Socio-demographic profile of healthcare workers

Variables	Clinicals N=230 n (%)	Non-clinicals N=230 n (%)	Test statistics	P-Value
Age (years)				
<40 (Young adults)	130 (56.5)	84 (36.5)	χ^2=18.489	**<0.001**
≥40 (Middle aged)	100 (43.5)	146 (63.5)		
Age (Mean±SD)	38.60±8.416	40.96±7.324	t-test= -3.203	**0.001**
Sex				
Male	82 (35.7)	105 (45.7)	χ^2=4.767	**0.029**
Female	148 (64.3)	125 (54.3)		
Marital status				

Single	52 (22.6)	19 (8.3)	χ^2=18.138	**<0.001**
Married	172 (74.8)	204 (88.7)		
Divorced/separated/widowed	6 (2.6)	7 (3.0)		
Religion				
Christianity	217 (94.3)	208 (90.4)	χ^2=2.505	0.113
Islam	13 (5.7)	22 (9.6)		
Ethnicity				
Yoruba	176 (76.5)	205 (89.1)	χ^2=14.021	**0.001**
Igbo	27 (11.7)	9 (3.9)		
Others*	27 (11.7)	16 (7.0)		
Level of education				
Primary	0 (0.0)	9 (3.9)	LR=42.613	**<0.001**
Secondary	0 (0.0)	30 (13.0)		
Tertiary	230 (98.7)	191 (83.0)		
Length of practice (years)				
≤3	50 (21.7)	52 (22.6)	χ^2=0.050	0.822
>3	180 (78.3)	178 (77.4)		
Length of practice (Mean±SD)	10.13±7.285	8.30±6.175	t-test = 2.907	**0.004**
Monthly income (naira)				
≤30000	0 (0.0)	6 (2.6)	Fisher's exact=	**0.030**
>30000	230 (100.0)	224 (97.4)		

**Others in ethnicity include Ebira, Edo, Idoma and Igala ethnic groups*

From Table 3 above, a significant proportion (56.5%) of the clinical healthcare workers were <40 years compared to 36.5% of the non-clinical healthcare workers (p<0.001).

Table 4: Health seeking behaviour among clinical and non-clinical healthcare workers

Variables	Clinicals n (%)	Non-clinicals n (%)	Chi-square	P-Value
Health seeking behaviour (N=460)				
Appropriate	29 (12.6)	46 (20.0)	4.604	**0.032**

Inappropriate	201 (87.4)	184 (80.0)		
Sought healthcare services at last time of illness (N=460)				
Yes	123 (53.5)	134 (58.3)	1.067	0.302
No	107 (46.5)	96 (41.7)		
Type of health facility preferred to visit when ill (N=460)				
Private	54 (23.5)	21 (9.1)	17.349	**<0.001**
Public	176 (76.5)	209 (90.9)		
Action taken during last illness (N=257)				
Visited TBA/faith-based organisation	1 (0.8)	1 (0.7)	0.074	0.964
Consulted pharmacist/patent medicine vendor	9 (7.3)	11 (8.2)		
Visited a health facility	113 (91.9)	122 (91.0)		
Actions taken during last illness while not seeking healthcare (N=203)				
Nothing	11 (10.3)	8 (8.3)	3.405	0.182
Took over-the-counter self-medications	73 (68.2)	76 (79.2)		
Others*	23 (21.5)	12 (12.5)		
Motivation for visiting health facility at last time of illness (N=235)				
Fear of the unknown	55 (48.7)	64 (52.5)	9.049	**0.011**
The severity of illness	42 (37.2)	54 (44.3)		
Type of health facility visited at last time of illness (N=235)				
Private	15 (13.3)	9 (7.4)	2.225	0.136
Public	98 (86.7)	113 (92.6)		

**Others- self relaxation, counsel from colleagues, herbal concoction*

From Table 4 above, a significant proportion (87.4%) of the clinical healthcare workers had inappropriate health seeking behaviour compared to 80.0% among the non-clinical healthcare workers (p=0.032). More (90.9%) of non-clinical healthcare workers preferred to visit public health facility than 76.5% of the clinical healthcare workers (0.001).

Table 5: Utilization of health services among healthcare workers

Variables	Clinicals n (%)	Non-clinicals n (%)	Test statistics	P-Value

Utilisation of health services (N=460)				
Good utilisation	41 (17.8)	37 (16.1)	χ^2=0.247	0.619
Poor utilisation	189 (82.2)	193 (83.9)		
Ever accessed health services (N=460)				
Yes	112 (48.7)	108 (47.0)	χ^2=0.139	0.709
No	118 (51.3)	122 (53.0)		
Mode of accessing health services (N=220)				
Clinic appointment	88 (78.6)	100 (92.6)	χ^2=11.872	**0.003**
Over the phone	8 (7.1)	6 (5.6)		
Home visit	16 (14.3)	2 (1.9)		
Complied with doctor's prescription (N=202)				
Yes	98 (100.0)	102 (98.1)	Fisher's exact=	0.498
No	0 (0.0)	2 (1.9)		
Frequency of accessing check-up (N=124)				
Monthly	12 (19.4)	23 (37.1)	LR=17.326	**0.002**
Quarterly	13 (21.0)	24 (38.7)		
Bi-annually	9 (14.5)	4 (6.5)		
Yearly	24 (38.7)	8 (12.9)		
Cannot recall the last time	4 (6.5)	3 (4.8)		

From Table 5 above, clinic appointment was the mode of consultation among majority (92.6%) of the non-clinical healthcare workers compared to 78.6% of clinical healthcare workers (p=0.003). A significant proportion (38.7%) of the clinical healthcare workers had routine medical check-up yearly compared to 12.9% of non-clinical healthcare workers (p=0.002).

Table 6: Association between health status and health services utilisation by clinical and non-clinical healthcare workers

Variables	**Healthcare services utilisation**			
	Clinical		**Non-clinical**	
	Good N=169 n (%)	**Poor N=151 n (%)**	**Good N=60 n (%)**	**Poor N=260 n (%)**
Perceived current health status				

Excellent	13 (15.5)	71 (84.5)	10 (19.2)	42 (80.8)
Very good	17 (16.3)	87 (83.7)	23 (15.9)	122 (84.1)
Good	10 (26.3)	28 (73.7)	2 (6.9)	27 (93.1)
Fair	1 (25.0)	3 (75.0)	2 (50.0)	2 (50.0)
	LR= 2.299**; p=** 0.513		**LR=** 5.057**; p=** 0.168	
Medical condition requiring routine monitoring				
Yes	13 (41.9)	18 (58.1)	8 (61.5)	5 (38.5)
No	28 (14.1)	171 (85.9)	29 (13.4)	188 (86.6)
	χ^2= 14.217**; p= <0.001**		**Fisher's exact= <0.001**	
On regular medications				
Yes	16 (55.2)	13 (44.8)	12 (57.1)	9 (42.9)
No	25 (12.4)	176 (87.6)	25 (12.0)	184 (88.0)
	χ^2= 31.596**; p= <0.001**		**Fisher's exact= <0.001**	
The last time you felt ill (months)				
≤6	26 (17.8)	120 (82.2)	20 (19.0)	85 (81.0)
>6	15 (17.9)	69 (82.1)	17 (13.6)	108 (86.4)
	χ^2= 0.000**; p=** 0.993		**χ^2=** 1.255**; p=** 0.263	

From Table 6 above, among the clinical healthcare workers, any medical condition that required routine monitoring (p<0.001) and being on regular medications (p<0.001) had statistically significant association with healthcare services utilisation. More (41.9%) of clinical healthcare workers who had a medical condition that required routine monitoring had good health services utilisation than 14.1% clinical healthcare workers who had no medical condition that required routine monitoring. A higher proportion (55.2%) of the clinical healthcare workers who were regular on medications had good health service utilisation compared to 12.4% of those who were not on regular medications. Among the non-clinical healthcare workers, a significant proportion (61.5%) of non-clinical healthcare workers who had a medical condition that required routine monitoring had good health services utilization, compared to 13.4% who had no medical condition that required routine monitoring (p<0.001). More (57.1%) of non-clinical healthcare workers who were regular on medications had good health services utilization than 12.0% of non-clinical respondents who were not on regular medications (p<0.001).

Table 7: Predictors of good healthcare services utilisation among clinical healthcare workers

Variables	**Adjusted 0dds ratio**	**P-value**	**95% Confidence Interval (95% CI)**	
			Lower	**Upper**

Medical condition requiring routine monitoring				
Yes	1.710	0.375	0.523	5.588
No **(Ref)**	1			
On regular medications				
Yes	5.519	**0.003**	1.804	16.885
No **(Ref)**	1			
Health seeking behaviour				
Appropriate	4.869	**0.001**	1.944	12.198
Inappropriate **(Ref)**	1			
Availability of health insurance				
Yes	2.633	0.041	1.042	6.652
No **(Ref)**	1			

In Table 7 above, the predictors of good healthcare services utilization among the clinical healthcare workers were being on regular medications, appropriate health seeking behavior and availability of health insurance. Clinical healthcare workers who were on regular medications are 5.5 times more likely to utilize healthcare services than those who were not on regular medication (AOR=5.519; 95%CI=1.804-16.885). Clinical healthcare workers who had appropriate health seeking behaviour are 4.9 times more likely to utilize healthcare services than their counterpart who had inappropriate health seeking behaviour (AOR=4.869; 95%CI=1.944-12.198). The clinical healthcare workers who reported availability of health insurance are 2.6 times more likely to utilize healthcare services that those who reported non-availability of health insurance (AOR=2.633; 95%CI=1.042-6.652).

Table 8: Predictors of good healthcare services utilization among non-clinical healthcare workers

Variables	**Adjusted odds ratio**	**P-value**	**95% Confidence Interval (95% CI)**	
			Lower	**Upper**
Ever seen a doctor				
Yes	12.929	**0.014**	1.692	98.813
No **(Ref)**	1			
Health seeking behaviour				
Appropriate	3.871	**0.001**	1.745	8.587
Inappropriate **(Ref)**	1			
Availability of health insurance				
Yes	2.115	0.080	0.913	4.898

No **(Ref)**	1

In Table 8 above, the predictors were ever seen a doctor and health seeking behaviour. The non-clinical healthcare workers who had ever seen a doctor are 12.9 times more likely to utilise healthcare services than those who had never seen a doctor (AOR=12.929; 95%CI=1.692-98.813). Non-clinical healthcare workers with appropriate health seeking behaviour are 3.8 times more likely to utilise healthcare services than those with inappropriate health seeking behaviour (AOR=3.871; 95%CI=1.745-8.587).

Result from Qualitative

Understanding of health-seeking behaviour and utilisation

All participants reported what health-seeking behaviour meant to them, when asked about their understanding of it. The clinical participants expressed health-seeking behaviour as the actions individuals take to maintain health and address perceived health issues. Other clinical participants generally expressed health-seeking behaviour as actions taken to maintain physical, social, and mental well-being, including accessing healthcare services when needed. They emphasised readiness to seek medical care, obtain information about health matters, and see a doctor when feeling ill as a form of health-seeking behaviour. A few reported that health-seeking behaviour is focusing on health care workers' behaviour when seeking care themselves or patient behaviour during illness.

Non-clinical participants described health-seeking behaviour as actions taken to seek healthcare when needed. They mentioned the attitudes towards seeking healthcare as accessing help when sick, and the interaction between patients and healthcare providers. Health-seeking behaviour was acknowledged as a two-way prong, encompassing both patient and healthcare workers' behaviour. Non-clinical participants focused on the actions and attitudes of individuals seeking healthcare, both when sick and when trying to optimize their health.

> *"The things that you do to maintain your health*" **Clinical 1**
>
> "*The attitude of people and the things we do when we perceive our health*" **Clinical 2**
>
> "*When he or she wants to access care*" **Clinical 3**
>
> "*Readiness to assess health care service... readiness to see the doctor*" **Clinical 4**
>
> "*How health workers behave or act when they're sick*" **Clinical 6**

> "*What people do when they do have the need*" **Non-clinical 1**
>
> "*The attitude of people to care, to going to the hospital*" **Non-clinical 2**
>
> "*The ways they access the help they need*" **Non-clinical 3**
>
> "*It's a two-way thing, it has to do with patients and the staff*" **Non-clinical 6**

4.0 DISCUSSION

This study assessed and compared the health seeking behaviour and health service utilisation among clinical and non-clinical health workers, and determined the factors associated with the utilisation of healthcare services among healthcare workers in tertiary health facilities in Ondo state, Nigeria. A prompt and appropriate health seeking behaviour can help to avert worsening morbidity and mortality due to the benefit of early diagnosis and appropriate treatment.(Peleg *et al.,* 2012) In this study, the proportion of clinical healthcare workers who had appropriate health seeking behaviour was below that found among non-clinical healthcare workers. This was so, as the proportion of clinical healthcare workers who sought healthcare services, as well as visited health facility the last time they fell ill was lower when compared to the proportion of same among the non-clinical healthcare workers. It was also found

from this study that a significant proportion of non-clinical healthcare workers (79.2%), compared to 68.2% of clinical healthcare workers took over-the counter medications when ill despite having access to healthcare. The slightly higher proportion seen among the non-clinical healthcare workers could be as a result of their limited medical knowledge and exposure. A similar study done in North-Central Nigeria revealed that a higher proportion of doctors (58.6%) engaged in inappropriate health seeking behaviour compared to those (19.5%) who had appropriate health seeking behaviour.(Fawibe *et al.,* 2017) And most of these health seeking were through informal ways. This was also similar to the finding from a study done in Addis-Ababa, East Africa, which revealed that only 35% of healthcare workers had appropriate health-seeking behaviour, and among this proportion, it was irregular and often after long intervals.(Getahun GK, Arega M, Keleb G, Shiferaw A, 2023) Another study in Pakistan reported that majority of clinical healthcare workers (74% nurses, 56% doctors) had inappropriate healthcare seeking behaviour.(Bana *et al.,* 2016) In this study, most healthcare workers delayed seeking healthcare while first observing their symptoms, because they did not consider their illnesses serious enough and instead did initial self-treatment before eventually seeking care at the health facility.(Bana *et al.,* 2016) This was further supported by findings from the key informant interview where almost all healthcare workers acknowledged self-treatment, self-prescription, and informal consultation with colleagues or even visiting the chemist shops, herbalist and missionary homes as the case may be, with claims that some medical conditions require spiritual interventions. A few times, these healthcare workers present late to the hospital when severe complications would have set in; their motivating factor being fear of the unknown and the severity of their illness.(Obiebi *et al.,* 2020)(Adamu *et al.,* 2018) This inappropriate health-seeking behaviour may lead to prolonged duration of illness, during which complications would have set in, as well as worsening the morbidity and mortality among healthcare workers.(Adamu *et al.,* 2018) Majority of the clinical and non-clinical healthcare workers in this study, also prefer the public health facility over the private as they believe the former has a higher number of experienced professionals.

The utilization of health services among clinical and non-clinical healthcare workers in this study was poor. This can be explained by the higher proportion (92.6%) of non-clinical healthcare workers who accessed health services through clinic appointments compared to 78.6% of the clinical healthcare workers; and further supported by the findings from the key informant interview where majority of the healthcare workers rated their utilisation of health services as being poor. The likely reason for the poor health service utilisation reported among the clinical healthcare workers is their over-familiarity with the health facility, knowledge about disease conditions, diagnosis and medical prescriptions.(Adewoye *et al.,* 2019 Fawibe *et al.,* 2017) The poor health service utilisation reported among the non-clinical healthcare workers could be due to their ignorance on matters related to their health.(Adamu *et al.,* 2018) The findings from previous studies done in South-South Nigeria, Ethiopia and Israel also revealed poor healthcare utilisation of 26.2%, 35.3% and 27.5% respectively among the clinical healthcare workers.(Obiebi *et al.,* 2020)(Getahun GK, Arega M, Keleb G, Shiferaw A, 2023)(Peleg *et al.,* 2012) These studies were descriptive and were all done among clinical healthcare workers only. A Pakistan study that was done among clinical healthcare workers also reported poor healthcare utilisation among 39.0% of the respondents.(Bana *et al.,* 2016) This could explain why the level of healthcare utilisation was a little higher in this study.

5.0 CONCLUSION

This study provides information on the health-seeking behaviour and utilisation of healthcare services among clinical and non-clinical healthcare workers in tertiary health facilities in Ondo State, Nigeria.

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Conflict of Interest declaration

The authors declare that there are no conflicts of interest regarding the publication of this manuscript. No financial, professional, or personal relationships influenced the clinical management or the preparation of this manuscript.

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