

Original Research Article

Healthcare service quality and utilisation patterns among university students: A SERVQUAL-based assessment

Ayodapo O Jegede^{1*}, Romanus M Ihekoronye¹, Olumide E Sorinola¹, Rachel O Titus¹, Omoniyi J Ola-Olorun¹, Adebajji S Ajayi², Wilson O Erhun¹

¹Department of Clinical Pharmacy and Pharmacy Administration, ²Department of Microbiology, Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria

*For correspondence: **Email:** dapojegede@oauife.edu.ng

Sent for review: 21 March 2026

Revised accepted: 16 June 2026

Abstract

Purpose: To examine the perception of Obafemi Awolowo University (OAU) undergraduate students about service quality at the institution's Health Centre and determine if their perception had an effect on their use of healthcare services.

Methods: The study adopted a cross-sectional mixed-methods design. For quantitative determinations, a SERVQUAL-based survey was administered to 1,698 undergraduates. The instrument covered the five core service quality dimensions: tangibles, reliability, responsiveness, assurance, and empathy. A focus group discussion of 14 students was used to obtain qualitative data. Quantitative data were analysed using factor analysis and multiple linear regression; qualitative transcripts were analysed thematically to further explain the survey findings.

Results: The results showed that only 527 (31.1 %) had accessed services within the preceding six months, even though 1148 (67.6 %) of respondents reported being registered with the Health Centre. The perceptions of service quality overall were moderately positive (mean = 3.17 ± 0.95); the results also revealed that expectations consistently exceeded experiences with a negative SERVQUAL gap (-1.19 ± 1.13). Responsiveness showed an inverse relationship with service utilisation, while perceived reliability and empathy were positively associated. A little over half (53.6 %) of the observed variance was accounted for by these underlying factors. The focus group discussion identified unfavourable staff attitudes, long waiting times, and procedural delays as key deterrents to healthcare utilisation.

Conclusion: Student confidence and utilisation of university health services can be increased by improving responsiveness, reliability, and interpersonal aspects of care.

Keywords: Healthcare utilisation, Service quality, SERVQUAL, Student health services, University health centre

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Tropical Journal of Pharmaceutical Research is indexed by Scopus, Chemical Abstracts, Embase, Index Copernicus, EBSCO, African Index Medicus, JournalSeek, Directory of Open Access Journals (DOAJ), African Journal Online, Bioline International, Open-J-Gate and Pharmacy Abstracts

INTRODUCTION

University health services are designed to support students across a broader continuum, including preventive care, chronic disease management, mental health, health education, not just through acute illness. Perceptions of

service quality, accessibility, and trust that often develop (or don't) through direct encounters with care providers often influence the extent to which students actually engage with these services [1,2]. In sub-Saharan Africa, health systems policy rarely translates into practice, resulting in persistent structural deficits: chronically limited

funding, shortages of trained personnel, ageing or inadequate infrastructure, and governance arrangements that frequently struggle to [3]. The gap between what students hope care will look like and what it is constitutes pressure within universities, producing the kind of disengagement and dissatisfaction that, once established, is hard to reverse with inadequate staffing, limited diagnostic capacity, and avoidable delays all compounding the problem [1,4]. Anecdotal reports from students at OAU agree with complaints from other Nigerian campus health systems experiencing similar patterns. This is seen as complaints about inconsistent service delivery and extended waiting times, pointing to the need for structured, evidence-based assessment of service quality [4,5].

The SERVQUAL framework developed by Parasuraman *et al* [6] was adopted by this study to examine these concerns. SERVQUAL, using five dimensions: tangibles, reliability, responsiveness, assurance, and empathy, conceptualises service quality as the discrepancy between users' expectations and their actual service experiences. Tangibles represent the physical aspects of care, equipment, facilities, and the appearance of staff and surroundings. The accurate and consistent delivery of services as promised is what reliability captures. Responsiveness concerns the willingness and prompt response of staff to address patient needs in a timely manner while assurance, on the other hand, reflects the competence, knowledge, and courtesy of providers in inspiring confidence and trust. Empathy denotes the individualisation of care and is achieved when patients feel genuinely attended to. Relatively few studies have used SERVQUAL in university health settings, even fewer in low- and middle-income country contexts, despite the fact that it is widely accepted in hospital and private healthcare contexts [1,6].

Healthcare utilisation describes how individuals and populations engage with, and consume health services, including frequency, types, and volume of health services accessed [7]. Services received encompass all interventions intended to prevent, diagnose, treat, or manage a disease condition or injury, including direct medical services, prescribed medications, laboratory tests, and use of durable medical equipment [8]. The SERVQUAL model is considered an appropriate guide for a structured examination of how perceived service quality influences healthcare utilisation and healthcare-seeking behaviour among university students, as this is supported by extant literature [9,10].

Based on evidence from Obafemi Awolowo University Health Centre, this study assessed OAU students' perceptions of service quality and quantified expectation–perception gaps across the five SERVQUAL dimensions, identified key structural, contextual, and interpersonal factors shaping these perceptions through factor analysis, and examined how perceived service quality predicts healthcare utilisation using regression analysis.

METHODS

Design

A cross-sectional mixed-methods design was adopted for data collection among OAU students. A structured SERVQUAL-based questionnaire constituted the quantitative component and captured perceived and expected service quality across the five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. The lived experiences, perceived barriers, and service delivery concerns of students were explored by a focus group discussion (FGD) constituting the qualitative component of the study. A FGD guide provided direction throughout the process.

Study population and sampling

Participants were drawn from an enrolled population of 35,159 undergraduate students at Obafemi Awolowo University, Ile-Ife [9]. A minimum sample of 1,472 respondents was calculated using the Krejcie and Morgan formula [10]. The statistical robustness of this study is strengthened by the high number of completed questionnaires returned (1,698), which exceeded the calculated sample size. Stratified random sampling ensured proportional representation across the university's thirteen faculties.

Eligibility was restricted to full-time undergraduates of any gender or faculty who were qualified to receive care at the health centre. Part-time, distance learners, and postgraduate students were excluded on the grounds that their patterns of health centre engagement differ materially from those of resident undergraduates.

Ethical statement

Ethical approval was granted by the Research and Ethics Committee of Obafemi Awolowo University (approval no. IPH/OAU/12/2747). All participation was voluntary. Informed consent was secured from every participant prior to

involvement. Anonymity and confidentiality were maintained throughout; data were stored on password-protected systems accessible only to the research team, and results were reported in aggregate form to prevent identification of participants.

Data collection instrument

Data collection was done by using a structured questionnaire adapted from the original SERVQUAL instrument developed by Parasuraman *et al* [6]. The instrument was subjected to two brainstorming sessions of the research team to adapt the framing of the items for easier understanding by respondents. Consensus was reached on all items which ensured face and content validity of the instrument. The resultant draft questionnaire was reviewed by two senior faculty members with expertise in health services research. Their inputs were used to improve content validity of the scales. Each of the five service quality dimensions, tangibles, reliability, responsiveness, assurance, and empathy, was assessed through multiple items rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) administered for both expectation and perception components separately. The questionnaire also included sections on socio-demographic characteristics, prior healthcare utilisation history, and self-reported chronic health conditions.

For each respondent, mean scores were computed within each dimension to yield dimension-specific expectation and perception scores. SERVQUAL gap scores were then derived as the arithmetic difference between perception and expectation means (Gap = Perception – Expectation). An overall perception score was calculated as the mean across the five perception dimensions; the overall gap score was the average of the five individual gap values. All procedures followed standard SERVQUAL conventions and were carried out using IBM SPSS Statistics version 26.

Focus group discussion (Qualitative component)

A focus group discussion was held with the students purposively selected from multiple faculties to contextualise and complement the survey data. The spread of the students was deliberate and was intended to survey a range of academic and experiential perspectives. Fourteen students (eight females and six males) participated and were drawn from seven faculties: Administration (n = 5), Clinical Sciences (n = 1), Environmental Design and

Management (n = 1), Law (n = 1), Pharmacy (n = 2), Science (n = 3) and Technology (n = 1). To preserve anonymity throughout analysis, all participants were assigned unique identifiers (C1–C14).

Before the discussion began, written informed consent was obtained, and the session ran at a neutral location on campus for approximately 40 minutes. Conversation was directed across several areas with a semi-structured guide, including registration processes, service delivery experiences, communication, staff conduct, and suggestions for improvement. The session was moderated by the lead researcher, supported by a trained note-taker; participants' explicit permission was obtained for audio-recording, and transcriptions were produced verbatim for analysis.

Quantitative data collection

Google Forms were used to collect survey data electronically and were shared through institutional email lists and official student social media channels. The responses were fed automatically into a secure database. Periodic reminders were sent to encourage response during the data collection window that spanned four months (March–June). Informed consent was obtained before any respondent could proceed to fill in the survey questions; participation was entirely voluntary.

Data analysis

Descriptive and inferential statistics were used to summarise and analyse quantitative data using SPSS. Descriptive statistics summarised the socio-demographic profile of respondents and their perceptions of service quality. Kruskal–Wallis tests (across age, faculty, and academic levels) and Mann–Whitney U tests (for gender comparisons) were used to test group differences in healthcare utilisation and registration status. Latent structural factors underlying service quality perceptions were identified by Principal Component Analysis (PCA); Bartlett's test of sphericity confirmed that the data were appropriate for factor extraction and sampling adequacy was confirmed by a Kaiser–Meyer–Olkin value of 0.959.

The six-phase framework described by Braun and Clarke guided the thematic analysis of qualitative data [11]. Two researchers independently coded transcripts; discrepancies were resolved through discussion, and consensus was reached.

RESULTS

Demographic characteristics of respondents

A total of 1,698 undergraduate students completed the survey. Female respondents made up 51.1 % of the sample, with males accounting for 48.9 %- a near-equal distribution (Table 1). The majority were aged 20–24 years (57.7 %), followed by the 15–19 age group (26.3 %). Only 1.1 % were aged 30 and above. Participants were from all thirteen of OAU's faculties, with science (15.4 %) contributing as the highest proportion of participants, followed by Arts (13.4 %) and Technology (12.5 %); Dentistry (0.8 %), Clinical Sciences (2.8 %), and Basic Medical Sciences (3.5 %) were the least represented. By academic level, 300-level students (30.0 %) formed the largest group ahead of 200-level (27.1 %) and 400-level (19.3 %); 600-level students made up 0.3 % of the sample.

With respect to engagement with the University Health Centre, 1148 (67.6 %) of respondents reported being registered, while 445 (26.2 %) were not registered, and 98 (5.8 %) had

incomplete registration; 9 (0.5 %) were unsure of their registration status. Despite this relatively high registration rate, most (781, 68.0 %) of those who reported being registered with the Health Centre could not recall their registration number, and only 300 (26.1 %) were able to do so correctly. Slightly over half of registered respondents (650, 56.6 %) had accessed healthcare services at the Health Centre at some point, whereas 489 (42.6 %) had never done so. Recent utilisation was considerably lower, with only 357 (31.1 %) reporting service use within the preceding six months. Most respondents, 1560 (91.9 %), indicated that they did not have a chronic health condition requiring regular care.

Differences in registration and utilisation patterns

Gender differences in engagement with the Health Centre were examined using the Mann–Whitney U test. Female students were significantly more likely to be registered than their male counterparts ($U = 336,399.00$; $z = -2.87$; $p = 0.004$), although the observed effect size was small ($r = 0.07$).

Table 1: Demographic Characteristics of Respondents (N = 1,698)

Variable	Items	Frequency (n)	Percentage (%)
Gender	Female	868	51.1
	Male	830	48.9
Age (years)	15–19	447	26.3
	20–24	979	57.7
	25–29	219	12.9
	30–34	17	1
	35–39	2	0.1
	Missing	34	2
Faculty	Administration	146	8.6
	Agriculture	185	10.9
	Arts	228	13.4
	Basic Medical Sciences	59	3.5
	Clinical Sciences	48	2.8
	Dentistry	13	0.8
	Education	129	7.6
	Environmental Design and Management	110	6.5
	Law	55	3.2
	Pharmacy	89	5.2
	Science	261	15.4
	Social Sciences	162	9.5
	Technology	213	12.5
Level of Study	100 Level	250	14.7
	200 Level	460	27.1
	300 Level	510	30
	400 Level	328	19.3
	500 Level	145	8.5
	600 Level	5	0.3

No statistically significant gender differences were found for recall of registration numbers, prior or recent utilisation of services, or the presence of chronic health conditions ($p > 0.05$). Nonetheless, females consistently recorded slightly higher median and mean rank values across these indicators.

Age-related differences were observed for several engagement measures. Kruskal–Wallis tests showed significant variations across age groups in registration status, recall of registration numbers, and prior healthcare utilisation ($p < 0.001$). Students in the 25 – 29 age brackets recorded the highest mean ranks for both registration and prior utilisation; those aged 15 – 19 consistently ranked lowest. No significant age differences were detected for recent service use or chronic health conditions. Results for the 35–39 age group, though some indicators were high, need to be read cautiously, given how few respondents fell into that category.

Faculty-level comparisons similarly showed significant differences in registration rates, registration number recall, and previous utilisation ($p < .05$). Pharmacy students were the most engaged across all these indicators; students from Arts and Dentistry were the least. Differences in recent utilisation and chronic health burden across faculties did not reach statistical significance. Academic level also tracked with engagement- students at the 300–500 levels generally showed greater familiarity with and use of the Health Centre than junior students, though differences in recent utilisation

were modest and chronic health conditions varied little by level.

Perceived quality of healthcare services

How students rated service quality differed meaningfully across the five SERVQUAL dimensions (Table 2). Physical facilities and equipment, which are tangibles dimension, attracted the most favourable responses, with slightly more than half of respondents expressing agreement. Reliability and responsiveness fared notably worse, with fewer than half of students rating these positively and a substantial share remaining uncertain or dissatisfied. Assurance and empathy produced similarly mixed pictures, with considerable proportions expressing either dissatisfaction or uncertainty. Overall, students' perception of service quality was moderately positive (Mean = 3.17 ± 0.95 ; Table 3). A consistent shortfall across all dimensions was observed, indicated by the overall negative (-1.19 ± 1.13) SERVQUAL gap score, which is the difference between what students expected and what they experienced.

Factors influencing perceived healthcare reliability

Mean scores for factors influencing perceptions of healthcare reliability ranged from 2.57 to 3.15 (Table 4). Accuracy of laboratory result (50.1 %), doctors' attitudes (46.9 %), and availability of skilled personnel (46.1 %) were the most influential determinants.

Table 2: Students' Perception of Healthcare Service Quality Dimensions at the OAU Health Centre (N = 1,698)

Service quality dimension	Mean	SD	Strongly Disagree; f (%)	Disagree; f (%)	Unsure; f (%)	Agree; f (%)	Strongly Agree; f (%)
Tangibles	3.46	0.98	52 (3.1)	214 (12.6)	561 (33.0)	637 (37.5)	234 (13.8)
Reliability	2.7	1.07	92 (5.4)	294 (17.3)	616 (36.3)	452 (26.6)	244 (14.4)
Responsiveness	3.01	1.18	169 (10.0)	444 (26.1)	513 (30.2)	347 (20.4)	225 (13.3)
Assurance	3.33	1.07	89 (5.2)	260 (15.3)	597 (35.2)	500 (29.4)	252 (14.8)
Empathy	3.21	1.08	115 (6.8)	282 (16.6)	649 (38.2)	438 (25.8)	214 (12.6)

Table 3: Overall SERVQUAL Perception and Service Quality Gap Scores among Students of OAU Health Centre (n = 1,698)

Variable	Description	Mean ($\bar{x}$)	SD
Resultant_Perception	Students' overall perception of service experience across SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree).	3.17	0.95
Overall_Perception_SERVQUAL	Overall SERVQUAL gap score computed as <i>Perception – Expectation</i> . A negative mean indicates that perceived service quality fell below expected service standards.	-1.19	1.13

Table 4: Factors Influencing Students' Perception of Healthcare Reliability at the OAU Health Centre (N = 1,698)

Category / Factor	Mean	Median	SD	Extremely important f (%)	Very important f (%)
A. Accessibility and Organisational Factors					
Accessibility of the physical location of the Health Centre	3.15	3	1.74	494 (29.1)	692 (40.8)
Operating hours of the facility	3.05	3	1.8	590 (34.7)	697 (41.0)
Variety of health services available	3.05	3	1.8	591 (34.8)	697 (41.0)
Scope of services covered by TSHIP scheme	3.1	3	1.76	526 (31.0)	693 (40.8)
Financial capacity to pay	3.04	3	1.65	460 (27.1)	566 (33.3)
B. Individual and Psychosocial Factors					
Cultural beliefs regarding use of orthodox medicine	3.13	3	1.39	255 (15.0)	418 (24.6)
Religious beliefs about health and healing	3.13	3	1.41	276 (16.3)	424 (25.0)
Health status: chronic illness	2.84	2	1.68	588 (34.6)	526 (31.0)
Health status: acute illness	2.86	2	1.72	602 (35.5)	556 (32.7)
Fear of contracting diseases	2.62	1	1.75	766 (45.1)	507 (29.9)
C. Service Quality and Provider-Related Factors (SERVQUAL Dimensions)					
Availability of skilled personnel	2.68	2	1.81	793 (46.7)	576 (33.9)
Attitude of doctors	2.65	2	1.8	796 (46.9)	558 (32.9)
Attitude of nurses	2.68	2	1.8	782 (46.1)	562 (33.1)
Attitude of pharmacists	2.8	2	1.8	704 (41.5)	599 (35.3)
Attitude of laboratory scientists	2.73	2	1.78	728 (42.9)	565 (33.3)
Quality of care at the Health Centre	2.74	2	1.8	746 (43.9)	585 (34.5)
Accuracy of laboratory results	2.57	2	1.8	850 (50.1)	528 (31.1)
Confidentiality of health records	2.65	2	1.79	784 (46.2)	541 (31.9)
Drug availability at the pharmacy	2.6	2	1.8	831 (48.9)	543 (32.0)
Use of computerised health records	2.71	2	1.77	724 (42.6)	543 (32.0)

Accessibility-related factors, including a variety of health services (34.8 %), operating hours (34.7 %) and facility location, were also rated as important. Cultural (15.0 %) and religious beliefs (16.3 %) exerted comparatively less influence.

Results from Principal Component Analysis (PCA)

Factor analysis confirmed the suitability of the dataset (KMO = 0.959; Bartlett's test $p < 0.001$). Two components were extracted through principal component analysis (PCA), jointly explaining 53.6 % of the total. *Service Quality and Professional Reliability* included drug availability, reflected staff competence, diagnostic accuracy, attitude, confidentiality, and system efficiency, represented the first factor. *Accessibility and Socio-Cultural Influences*-contextual determinants and captured structural access, including access, affordability, and belief-related considerations, were the second factor.

Strong loadings from variables that defined provider attitude and system performance, characterised Service Quality and Professional Reliability, including accuracy of laboratory results (0.778), attitudes of nurses (0.801), laboratory scientists (0.782), pharmacists' attitude (0.746), medicines availability at the pharmacy (0.767), and doctors' attitude (0.724).

In addition, high loadings were demonstrated on this component using computerised health records (0.659), availability of skilled personnel (0.674), fear of contracting diseases (0.705), and confidentiality of health records (0.703).

Strong loadings from a variety of health services available (0.672), operating hours of the facility (0.686), scope of health services under TSHIP (0.665), and accessibility of physical location (0.668) defined Accessibility and Socio-cultural Influences. Loading strongly on this component were also the cultural beliefs about orthodox medicine (0.647), socio-economic and belief-related factors, including financial capacity to pay (0.628), and religious beliefs about health and healing (0.627), indicating affordability and socio-cultural influences as important drivers of perception.

Quality of care at the Health Centre (0.469 on Component 1; 0.496 on Component 2) and health status (acute illness) (0.500 on Component 1; 0.472 on Component 2) were two variables that demonstrated strong cross-loadings.

Influence of Service Quality on Healthcare Utilisation

Two models: (1) ever accessed services and (2) accessed services within the last 6 months,

across which predictors of healthcare service utilisation among students were examined with multiple linear regression analyses. SERVQUAL dimensions: tangibles, reliability, responsiveness, assurance, and empathy were the predictor variables.

Reliability and responsiveness emerged as significant predictors of having ever accessed healthcare services in Model 1. Higher perceived reliability was associated with increased likelihood of service utilisation, revealing reliability as a positive predictor ($B = 0.081$, $SE = 0.023$, $\beta = 0.170$, $t = 3.534$, $p < 0.001$, 95 % CI (0.036, 0.126)).

Conversely, poorer perceptions of responsiveness were associated with reduced utilisation, suggesting responsiveness was a negative predictor ($B = -0.131$, $SE = 0.019$, $\beta = -0.301$, $t = -6.889$, $p < 0.001$, 95 % CI (-0.168, -0.093)).

Tangibles ($p = 0.153$), assurance ($p = 0.260$), and empathy ($p = 0.568$), the other variables, were not statistically significant predictors in this model. There was no evidence of problematic multicollinearity as observed from variance inflation factors (VIFs), which ranged from 2.518 to 4.021.

In Model 2, significant predictors of recent healthcare utilisation were tangibles, responsiveness, and empathy. Tangibles indicated a positive association ($B = 0.086$, $SE = 0.033$, $\beta = 0.092$, $t = 2.615$, $p = 0.009$, 95 % CI (0.022, 0.151)), suggesting that better physical facilities and resources increased recent utilisation.

Responsiveness again demonstrated a significant negative relationship ($B = -0.153$, $SE = 0.033$, $\beta = -0.195$, $t = -4.694$, $p < 0.001$, 95 % CI (-0.217, -0.089)), reinforcing its inverse association with service use. Empathy was also a positive predictor ($B = 0.084$, $SE = 0.040$, $\beta = 0.098$, $t = 2.102$, $p = 0.036$, 95 % CI (0.006, 0.163)).

In contrast, reliability ($p = 0.112$) and assurance ($p = 0.668$) were not statistically significant in this model. VIF values (where reported) were within acceptable limits, suggesting no serious multicollinearity concerns.

Qualitative findings

Four interrelated themes emerged from the focus group discussion: registration barriers, service quality and competence, patient-provider

interaction, and systemic improvement needs. Students described registration as restrictive and poorly coordinated. Two statements epitomise this impression: "Registering with the health centre is such a drill; information on required documentation and procedure are not available in one place" – (Female, Part 3, Accounting Student); and "In this era of technology, registration at the health centre is still manual, with no feedback to show one is successfully registered"- (Male, Part 4, Economics student).

Many discussants expressed concerns about staff competence and diagnostic practices. One female, final-year student (Education) said "Sometimes I second-guess the diagnosis from the health centre as the doctors do not listen much to my story before writing prescriptions".

A good number of discussants reported frequent experiences of limited empathy and poor communication. Typical statements reflecting this impressions include: "Generally, there seems to be a culture of just tolerating the presence and concerns of students at the health centre- from limited courtesy at reception desk, to poor communication of next steps with no explanations for unduly long waiting times"- (Female, Part 3, Law student); and "I get the feeling that they are used to seeing sick people and so feel no empathy for the distress of sick students who show up for care"- (Female, Part 4 Pharmacy student).

However, there were isolated positive encounters reported, particularly among pharmacists and laboratory staff. One Part 4 Mechanical Engineering student said, "I personally had very professional service experience with the laboratory staff when I had to run a series of recommended tests; the pharmacy staff were polite too".

Improved staffing, equipment availability, extended operating hours, and streamlined administrative processes were emphasised as needed by the participants.

DISCUSSION

The purpose of this study was to understand the perception of OAU students about the quality of healthcare at the university's Health Centre, what is responsible for those perceptions, and whether these perceptions influence service use. A combination of SERVQUAL-based survey data with qualitative focus group findings introduces a level of depth to the analysis that could not have been achieved by either one alone. It made it possible to examine both the dimensions of service quality that are measurable and the

students' everyday experiences that support the numbers.

One of the most striking findings of this study is the gulf between registration rates and actual service use. Fewer than a third of the respondents had used the Health Centre in the preceding six months, even though almost two in three students were formally registered. This shows that registration alone does not translate into effective service, as there seems to be a disconnect between enrolment and service utilisation. However, this study did not examine whether the students accessed care elsewhere in the preceding six months, which makes it difficult to ascertain the validity of the disconnect. Evidence from Nigerian university settings where procedural barriers limit access despite formal coverage is reinforced by qualitative findings from this study, which identified administrative bottlenecks, restricted registration hours, and long waiting times as key deterrents [9,10].

Existing evidence shows that women tend to engage more actively with healthcare, particularly for preventive services, which is consistent with higher registration rates of female students in this study [12,13]. Older and more senior students engaging health services more than younger and junior students is consistent with prior literature [12], probably reflecting a combination of increasing health awareness, more familiarity with institutional systems, and the weight of accumulated health needs over time. Service quality overall perceptions were moderately positive, with tangibles receiving the most favourable ratings. This finding agrees with the results from other healthcare quality studies, that shows that initial assessments of healthcare quality are shaped by visible infrastructure [14,15]. However, qualitative narratives revealed that improved infrastructure did not necessarily translate into efficient or satisfactory care delivery. Students distinguished between a centre that looked adequate and one that functioned well.

Lower ratings for reliability, responsiveness, and empathy, coupled with a negative SERVQUAL gap, point to unmet expectations in the interpersonal and procedural dimensions of care. These are not unusual findings. Negative gaps in responsiveness and empathy appear consistently across SERVQUAL studies in low- and middle-income settings, where they tend to be the most persistent weaknesses [1,16]. The focus group discussions broadly reinforced this, with students calling for more patient-centred approaches that align with wider calls for reform in university health systems [15].

Factor analysis identified two dominant dimensions shaping students' perceptions: Service Quality and Professional Reliability, and Accessibility and Socio-Cultural Influences. The weight given to staff competence, attitudes, diagnostic accuracy, and drug availability in the first factor underscores how central professional conduct is to trust, and to whether students are willing to return. Students' decisions are driven more by practical service performance than by belief-based factors, as demonstrated by the comparatively limited role, cultural and religious influences played [17,18].

The qualitative data reinforced these themes, particularly around the importance of staffing adequacy and professional demeanour. Enabling resources and perceived quality as central determinants of healthcare use are identified by the broader theoretical framework offered by Andersen's Behavioural Model, and the findings of this study align with this [19-21].

Responsiveness showed a negative association with healthcare utilisation, while perceived reliability positively predicted it as obtained from the regression analysis. It is easy to contextualise this counterintuitive result from the qualitative findings, as students often described staff as dismissive, hurried, or inattentive, suggesting that, rather than motivation to seek care, perceived responsiveness may reflect post-visit dissatisfaction. Similar inconsistencies between SERVQUAL responsiveness scores and utilisation behaviour have been noted elsewhere [12].

Empathy and tangibles emerged as significant predictors for those who utilised the health centre recently, showing that personalised care and environments that are welcoming encourage service use. Nonetheless, utilisation decisions are also shaped by non-quality factors such as time constraints, perceived illness severity, and social influences, as suggested by the modest explanatory power of the models.

The OAU findings fit into a recognisable pattern. Negative SERVQUAL gaps, especially in responsiveness and empathy, are a recurring feature of healthcare quality research in developing country settings [22-24]. The strong pull of staff competence and reliability on utilisation is also consistent with what has been documented in other Nigerian university health contexts [4,5,12]. This could indirectly be a reinforcement of the message that institutional administrators are growing accustomed to hearing but have not always acted on. This is more so because professional conduct is not a

soft concern; it is central to whether students use the services available to them. A multi-level approach is required to improve service quality at the OAU Health Centre. Routine quality audits could address key structural and interpersonal gaps. Targeted staff training in patient-centred communication, expansion of registration and service hours, digitization of records, etc. Accountability and responsiveness can be enhanced by participatory feedback mechanisms. These strategies align with global recommendations for improving dignity, trust, and efficiency in healthcare delivery [25].

Study limitations

The reliance on self-reported data may introduce recall or social desirability bias, while the cross-sectional nature of the design limits causal inference. The findings of this study are specific to OAU and may not be applicable directly to other university contexts. Additionally, the focus group discussion with fourteen participants cannot claim to be exhaustive, but it captured a valuable range of voices. Notwithstanding these limitations, the study provides substantive, empirically grounded evidence on how students at a major Nigerian university experience healthcare and why many of them choose to stay away.

CONCLUSION

Students reported moderately positive perceptions of service quality overall, but substantial gaps between expectations and experiences remained, particularly in reliability, responsiveness, and empathy. Those gaps are driving low utilisation despite relatively high registration coverage. Closing them will require attention to professional competence, staff empathy, physical infrastructure, and administrative processes. Beyond OAU, these findings add to a growing body of evidence on what it takes to build student-centred healthcare in universities operating under real resource constraints.

DECLARATIONS

Acknowledgement/Funding

The authors acknowledge the support of the management and staff of the Obafemi Awolowo University Health Centre for their cooperation during data collection. We also thank the undergraduate students who participated in the survey and focus group discussion for their time and valuable insights. We are grateful to the

colleagues who provided administrative and technical support during the study.

This study was supported by the Tertiary Education Trust Fund (TETFund), Nigeria, through an Institution-Based Research (IBR) Grant awarded to Obafemi Awolowo University. Grant number: DVC/RID/CE/UNIV/ILE-IFE/IBR/2023/VOL.I/029

The funding was received by the research team led by A.J. (Ayodapo Jegede). The funding body had no role in the study design, data collection, analysis, or interpretation, manuscript preparation, or the decision to submit the article for publication.

Sponsor website: <https://tETFund.gov.ng>

Conflict of Interest

No conflict of interest is associated with this work.

Contribution of authors

We declare that this work was done by the author(s) named in this article, and all liabilities pertaining to claims relating to the content of this article will be borne by the authors. W.O.E., A.O.J., R.M.I., and O.E.S. conceived and designed the study. A.O.J. R.M.I. and O.E.S. coordinated data collection and performed data analysis. A.O.J., R.M.I., O.E.S., and O.J.O. drafted the initial manuscript. All authors contributed to the interpretation of results, critically revised the manuscript for important intellectual content, and read and approved the final version for publication.

Ethical approval

Ethical approval for this study was obtained from the Research and Ethics Committee of Obafemi Awolowo University, Ile-Ife, Nigeria, with certificate number IPH/OAU/12/2747. Written informed consent was obtained from all participants before data collection, and confidentiality and anonymity were strictly maintained.

Availability of Data and Materials

The datasets generated and/or analysed during the current study are available from the corresponding author upon reasonable request.

Use of Artificial Intelligence / Large Language Models

An artificial intelligence–based language model (ChatGPT, OpenAI) was used to provide editorial assistance, including language refinement, clarity improvement, and section structuring of the manuscript. The AI tool was not used for data collection, data analysis, result generation, or interpretation of findings. The authors take full responsibility for the content of the manuscript.

Use of Research Reporting Tool

The study was reported in line with relevant elements of the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines for cross-sectional studies, and the qualitative component was guided by principles of qualitative reporting consistency.

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