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A Patient Satisfaction Survey of Care at the Audiovestibular Medicine Clinic at a Nigerian Teaching Hospital: A Cross-sectional Study

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A Patient Satisfaction Survey of Care at the Audiovestibular Medicine Clinic at a Nigerian Teaching Hospital: A Cross-sectional Study.

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ABSTRACT

Background: The conduct of a patient satisfaction survey is geared towards service improvement, because the most effective way of evaluating service delivery is through the lens of the service users. Despite the predominance of the global and regional burden of disease of hearing, communication and balance disorders in sub-Saharan Africa, there is a dearth of published data on patient satisfaction with Audiovestibular Medicine (AVM) outpatient services in this region.

Aim: This study aims to identify the areas of services contributing to patient satisfaction and their level of strength or weakness in the care delivered by the Audiovestibular Medicine Clinic of the University of Port Harcourt Teaching Hospital, Nigeria.

Patients and Methods: This is a cross-sectional study conducted as a service audit among patients seen at the AVM clinic between February 2023 and November 2023. A random cluster sampling was employed to recruit participants. Each participant completed a modified version of a standardised patient satisfaction structured questionnaire. Quantitative data obtained were analysed using SPSS version 29 and represented as tables, while qualitative data were represented as frequency-weighted word clouds.

Result: 100 questionnaires were administered, and 96 (96%) were analysed. The mean age of participants was 23.3±23.9 years (age range 0.5-86 years). Satisfaction was high across the domains (4.15-4.88 out of 5). The highest-rated domain was the helpfulness of the educational information received (mean rating 4.88), while the lowest-rated domains were the time lag between arrival and seeing the doctor (mean rating 4.15) and the clarity of directions to the payment point/pharmacy (mean rating 4.19). 96.9% indicated that they would recommend this clinic to family and friends. Open-ended responses mostly praised the attending doctor's attentiveness and "prompt attention", while "long waiting times" and calls for nurses to be "more courteous" were the most frequently mentioned aspects to be improved, alongside toilet hygiene and non-functioning equipment.

Summary: Attendees of the UPTH AVM clinic expressed high overall satisfaction due to clinicians' interpersonal skills and technical expertise. However, nursing and administrative services, waiting times, and clarity of instructions to the pay point and pharmacy received lower ratings, highlighting key areas needing quality enhancement.

Keywords: Audiovestibular Medicine; Patient Satisfaction; Quality of Care; Teaching Hospital; Nigeria.

INTRODUCTION

As global health systems gravitate towards patient-centred care, systematic ways of evaluating the quality of service patients receive, as well as their experience, have become a reliable method of ensuring institutional accountability and quality improvement. This also strengthens the trust between service providers and patients, in a way that improves adherence to treatment and enables the redesign of services around patients' needs. As a result, Patient satisfaction surveys have become a widely used measure of the quality of healthcare delivery, which reflects how well the process, structure and outcome of service delivery meet patients' values, needs, and experiences (Ayanian and Markel, 2016). In outpatient specialist clinics, patient satisfaction surveys highlight service points that together model the overall experience that cannot be captured by clinical outcome measures alone.

Audiovestibular Medicine (AVM) is a small but growing medical specialty that involves the diagnosis and management of hearing and balance disorders, including tinnitus and vestibular conditions, or neuro-otological pathologies in both paediatric and adult populations (JRCP_TB, 2026). Phonological delay, speech and language pathology in adults and children are also attended to in several AVM clinics. Hearing loss and vestibular disorders, which make up the bulk of cases seen in the AVM clinics, constitute a substantial global health burden. In 2021, about 1.57 billion people globally were living with some degree of hearing loss, and this is projected to increase to 2.45 billion through 2050 (Guo et al., 2024; Shen et al., 2025). In 2021, children and adolescents with hearing loss were estimated to be 97.83 million, with a disproportionately higher percentage in low- and middle-income countries, such as in sub-Saharan Africa (Guo et al., 2024). Vestibular and balance pathologies similarly contribute a significant burden of lifelong disability, with an estimated pooled prevalence of 30.4% in adolescents and children (Saniasiaya et al., 2023). Similarly, studies have shown an annual incidence of peripheral vestibular pathology in adults to be about 1,490 per 100,000 persons (Neuhauser, 2016). Considering the significant burden of audiological and vestibular pathologies regionally and globally, AVM clinics serve a vulnerable, diverse, often predominantly paediatric population. In addition, for paediatric cases where communication barriers due to young age give rise to caregiver-parent reporting, and longitudinal clinic visits are common, this influences how the patients' satisfaction and experience are reported.

Similar studies of patient satisfaction with general outpatient services at tertiary hospitals, conducted in Nigeria (Adamu & Oche, 2022; Ajayi et al., 2005) and other sub-Saharan African countries (Owusu et al., 2024; Tateke et al., 2012) have rated the interpersonal conduct and competence of the attending physician higher than administrative processes, clinic environment, and waiting times, which are more often identified as areas of dissatisfaction. As this pattern is observed in GOPD clinics and repeated across studies, it remains unclear whether it persists in specialised outpatient clinics such as the Audiovestibular clinic, where consultation sessions involve diagnostic procedures such as pure tone audiometry and tympanometry. To our knowledge, a survey of such a specialised AVM clinic with multidisciplinary input and substantial

paediatric hearing and speech impairment caseloads, with their attendant communication barriers, has not previously been conducted in Nigeria or sub-Saharan Africa.

The UPTH Audiovestibular Medicine Clinic is among the few dedicated AVM services in Nigeria, which provides diagnostic and management services for hearing loss, balance/vestibular pathologies, speech pathologies in children and adults, and phonological delays in children. As much as this portrays the diversity of the caseloads handled, a prior clinical observation at this clinic reported that a reasonable number of adults who presented with vertigo were either known hypertensives or hypertensives yet to obtain a formal diagnosis (Osuji, 2022). This observation aligns with existing evidence linking hearing loss and cardiovascular risk. The Global Burden of Disease 2021 shows hearing disability among adults with an increased risk of cardiovascular disease, with a shared mechanism of microvascular disease identified as a contributing factor to both pathologies (Xue et al., 2025).

The AVM clinic undertook this survey as part of a broader institutional effort to improve service quality. This was conducted using a combination of qualitative and quantitative methods via a modified version of a standard structured patient satisfaction questionnaire (AGA, 2007). It contains questions with a basic rating system and several open-ended questions. The survey assessed aspects of care such as arrival, nursing and administrative front desk processes, clinical encounters, waiting time, condition of the waiting area, clinician conduct and interaction during consultation, and post-visit outcomes. The addition of open-ended questions in this survey was to give patients an opportunity to express what they liked best, what they liked least, and what could be improved, in their own words, beyond what the rating system questions would capture.

In line with this, the Audiovestibular Medicine Clinic at UPTH, Nigeria, conducted a patient satisfaction survey aiming to identify what contributes to the quality of care provided to the clinic patients, areas of strengths and weaknesses, and to inform target areas of service improvement. In addition, the survey aimed to establish baseline evidence of how patients and parents/caregivers/guardians of minors assess the care received from the Audiovestibular Medicine Clinic of UPTH, to provide a template for comparison with or replication by other Audiovestibular medicine services within or outside the region.

METHODS

Study Design and Setting: This is an observational cross-sectional study conducted as part of a hospital-approved service audit, carried out as a patient satisfaction survey at the Audiovestibular Medicine Clinic of the University of Port Harcourt Teaching Hospital, conducted over ten months, from February 2023 to November 2023. The AVM clinic is held at the Ear, Nose and Throat Clinic every Friday of the week, except on public holidays.

The University of Port Harcourt Teaching Hospital is a tertiary referral centre in Southern Nigeria, and its AVM clinic provides outpatient diagnostic and management services for hearing and balance disorders in adults and children. The AVM clinic staff include an Audiovestibular medicine physician, resident (in-training) doctors, audiologists, speech-language therapists, and nursing staff, and it receives both new and returning patients.

Ethical considerations: This study was approved by the Hospital Management Quality Assurance and Quality Control Committee (QAQC) and the University of Port Harcourt Teaching Hospital Ethics Board as part of a hospital-wide service audit exercise with ID: **UPTH/Serv/A102/23**. The study was carried out in line with the Helsinki Declaration, and verbal informed consent was obtained from each adult participant or parent/guardian of each minor before the completion of the questionnaire. Reassurance was given to the respondents that their participation and responses would not affect the care they receive from the AVM clinic. Participants were represented with codes and not names on completed questionnaires to ensure confidentiality throughout the study.

Study Population and sampling technique: The sample population comprises all the patients attending the AVM clinic, and the sample size was drawn from those who attended the clinic within the ten-month study period, including new and follow-up patients. For patients who were minors, the accompanying parent/guardian completed the questionnaire on the child's behalf. Participants were recruited using a random cluster sampling technique, in which clinic attendance days within the study period constituted the sampling clusters. All consenting, eligible patients (or their parent/guardian, for minors) attending the clinic on the randomly selected days were invited to participate. The inclusion criterion was attendance at the AVM clinic as a new or returning patient during the study period, and willingness to participate in the study. Questionnaires were administered after informed verbal consent was obtained from each respondent and completed by the patient or an accompanying relative/guardian, independently of the interviewer, to minimise interviewer bias. The data that were utilised for analysis were from 96 participants (96.0%) out of a total of 100 questionnaires administered, while four with substantial missing data were excluded.

Data Collection and Study Tool: Data for the patient satisfaction survey were collected via a self-administered or guardian-/parent-administered (for minors) questionnaire modified after the standard template for an outpatient satisfaction survey by the American Gastroenterological Association Institute (©AGA Institute) (AGA, 2007). This template was modified to reflect the specific nature of the patient experience within the clinic. Pilot use of the questionnaires was carried out outside of the ten-month study period, before the start of the study. This was to ensure clarity and ease of completion before use in the main study. The final instrument is as shown in Appendix 1. Participants or their proxy completed the questionnaires voluntarily and independently, without any input from staff, to reduce interviewer/response bias and handed them in before leaving the clinic.

Data Analysis: In this study, quantitative data were analysed using SPSS software version 29. Continuous variables such as age were represented as mean and standard deviation. In contrast, categorical or ordinal variables were presented as frequencies and percentages, with mean, median or mode added where deemed necessary. Scores of 5-point rating items were calculated to find mean values, to aid interpretation. Mean age difference between males and females was compared using an independent samples t-test, and effect size was calculated as Cohen's d. Non-

response was recorded as 'no answer' or 'not applicable' as appropriate at each level of response. P-value <0.05 was considered statistically significant.

The open-ended questions were lightly cleaned for spelling and grouped in line with synonymous responses. The frequency of the resulting words or phrases was compiled to create a word cloud on the word cloud website (Zygomatic, 2026). The frequency of the words or phrases was tallied, and dominant responses were visualised in a word cloud with font size scaled to their mention frequency. This is a widely used approach for representing high-volume free-word data (DePaolo and Wilkinson, 2014). This approach of frequency-based representation was used to identify and represent the most salient recurring words or phrases.

RESULTS

Demographic Characteristics of Respondents

Among the 100 questionnaires administered during the study period, only 96 with largely completed survey data were utilised in the data analysis. The age range of the respondents was from 6 months to 86 years, with a mean age of 23.3±23.9 years. This reflects a heavily paediatric-skewed distribution. 46 (47.9%) respondents were aged 0-9 years, and 13 (13.5%) were aged 10-19 years. In other words, 61.5% of respondents were under 20 years of age, with the remaining 38.5% distributed across adult age groups (see Table 1). Mean age was not significantly different across sex (male: 23.6±24.7 years, female:22.8±23.0 years). The mean age difference was 0.81 years; the 95% Confidence interval was -9.21 to 10.83; t(94) = 0.16; Cohen's d = 0.03; p-value = 0.873. This shows a similar age distribution of male and female clinic attendance. 59 (61.5%) of respondents were males, and 37 (38.5%) were females. 40.6% have attended the clinic once, 37.5% have attended 2-5 times, while 19.8% have attended more than five times. (See Table 1).

Table 1. Sociodemographic and Visit Characteristics of Respondents (n = 96)

Characteristic	Category	N	%
Age group (years)	0–9	46	47.9
	10–19	13	13.5
	20–29	1	1.0
	30–39	7	7.3
	40–49	7	7.3
	50–59	11	11.5
	60–69	6	6.3
	70–79	3	3.1
	80–89	2	2.1
Sex	Male	59	61.5
	Female	37	38.5
Number of clinic visits	1 (first visit)	39	40.6
	2–5	36	37.5
	>5	19	19.8
	No answer	2	2.1

Mean age 23.3 ± 23.9 years (range 0.5–86 years). Percentages are valid percentages based on n = 96 unless otherwise indicated.

Satisfaction with Administrative and Nursing Care and Physical Environment

Patient satisfaction with administrative and nursing care was high, though some low ratings for this domain appeared in the survey. The longest wait time from arrival to seeing the doctor received the lowest score (average 4.15 out of 5, median 4), with 75.0% satisfied or very satisfied and 8.3% not at all or somewhat dissatisfied. Directions to payment or pharmacy points received modest ratings as well (average 4.19; 79.1% satisfied/very satisfied). Being directed to the waiting area by nursing staff (average 4.28; 80.2% satisfied/very satisfied) and how nurses scheduled follow-up appointments (average 4.29; 80.2% satisfied/very satisfied) scored slightly higher. Similarly, 83.3% rated the wait times for procedures such as ear washing or audiometry as satisfactory or higher (average score 4.47), and 82.3% of respondents rated the comfort, cleanliness, and amenities of the waiting area as satisfactory or better (average score 4.27).

Satisfaction with Consultation Process, Clinician Interpersonal Skills and Technical Competence

The attending doctor's patient satisfaction ratings were consistently the highest in this survey. Every respondent (100%) rated the doctor's listening skills as good or excellent (average 4.74), and 99.0% gave a similar rating for the doctor's personal manner (courtesy, respect, sensitivity, and friendliness) with an average of 4.78. The doctor's technical skills (98.0% good/excellent; average 4.72) and explanations of procedures, diagnosis, or treatment (98.0% good/excellent; average 4.72) received similarly high ratings. During visits, 88.6% of respondents rated the preparedness with records or educational material as good or excellent (average 4.52). Privacy during consultations was rated highly, with 90.6% satisfied or very satisfied (average 4.53). The overall professionalism and helpfulness of the doctor was rated satisfactory or very satisfactory by 97.9% (average 4.73). Other clinic staff's personal manner was rated good or excellent by 83.4% (average 4.29), which is lower than the doctor's ratings and comparable to the administrative and environmental ratings.

Satisfaction with Educational Information, Understanding of Next Step in Care, and Outcome

Table 2 shows that the most highly rated aspect was the helpfulness of the educational information received, with a mean score of 4.88 and 98.0% of respondents somewhat or strongly agreeing. This was followed by patients' understanding of their next steps in the care plan (mean 4.82; 97.9% agreement), the value of the service or care in improving health (mean 4.80; 94.8% agreement), and the adequacy of the time the doctor spent with the patient (mean 4.76; 96.9% agreement) (see Table 2).

Table 2. Patient Satisfaction Across Care Domains, Ranked by Mean Score (n = 96)

Domain item (ranked by mean)	Scale anchors	Mean	Median	Top-2-box %
Educational information received was helpful	Agreement	4.88	5	98.0
Understanding of next steps in care plan	Agreement	4.82	5	97.9

Service/care valuable in improving health	Agreement	4.80	5	94.8
Doctor's personal skill (courtesy, respect, sensitivity, friendliness)	Quality	4.78	5	99.0
Doctor spent adequate time with the patient	Agreement	4.76	5	96.9
Doctor's listening skills	Quality	4.74	5	100.0
Doctor's overall professionalism and helpfulness	Satisfaction	4.73	5	97.9
Doctor's explanation of procedure/diagnosis/treatment	Quality	4.72	5	97.9
Doctor's technical/clinical skill	Quality	4.72	5	98.0
Privacy during consultation	Satisfaction	4.53	5	90.6
Doctor's use of records/educational material	Quality	4.52	5	88.6
Procedure waiting time (e.g., ear washing, PTA)	Satisfaction	4.47	5	83.3
Other clinic staff's personal manner	Quality	4.29	5	83.4
Manner of nurse scheduling next appointment	Satisfaction	4.29	5	80.2
Being directed to the waiting area by a nurse	Satisfaction	4.28	5	80.2
Waiting-area comfort, cleanliness, amenities	Satisfaction	4.27	4	82.3
Direction to payment point/pharmacy	Satisfaction	4.19	5	79.1
Time lag between arrival and being seen by a doctor	Satisfaction	4.15	4	75.0

All items scored on 5-point ordinal scales. Response options for "Satisfaction" ranged from "not at all satisfied" to "very satisfied," response options for "Quality" ranged from "poor" to "excellent," and the response options for 'Agreement' ranged from 'strongly disagree' to 'strongly agree'. Top-2-box = two most favourable response categories.

Diagnostic Tests and Treatment Outcomes

The respondents who had testing in UPTH during their care constituted 43.8%, having pure tone audiometry or a full audiological battery. Among the total n=96, 38.5% received prompt results, while 5.2% experienced delays in getting their results. Among both the persons who had tests done in UPTH and those who had tests done outside the hospital, 67.7% of n=96 expressed satisfaction with the interpretation of their results by the attending physician, while 1% expressed dissatisfaction. As a result of improved health condition, 76.0% were satisfied with the outcome of treatment (see Table 3). However, 4.2% were dissatisfied due to issues like persistent tinnitus, the absence of hearing-aid services, or referrals for surgery.

General assessment of care provided by AVM clinic

Overall, patient satisfaction was very high, with 94 of 96 respondents willing to return to the same doctor for future treatment, and 93 (96.9%) recommending this Audiovestibular medicine clinic or the doctor to family and friends (see Table 3). Almost half, 46 or 47.9%, of respondents noted that a particular clinic staff member had stood out in their care. Most of these chose the attending doctor rather than the nursing staff. While 27.1% of respondents pointed out an aspect of their care needing improvement, 62.5% had no such concerns.

Table 3. Overall Assessment of Care and Related Outcomes (n = 96)

Item	N =96	%
Would return to same doctor for further care (Yes)	94	97.9

Would recommend doctor/clinic to family or friends (Yes)	93	96.9
Identified a specific staff member who "stood out" (Yes)	46	47.9
- Chose attending doctor	39	40.6
- Chose nursing staff	7	7.3
Identified an aspect of care needing improvement (Yes)	26	27.1
Underwent diagnostic testing at UPTH (Yes)	42	43.8
Received test results in a timely manner (Yes)	37	38.5
Satisfied with doctor's interpretation of test results (Yes)	65	67.7
Satisfied with outcome of treatment received (Yes)	73	76.0

Percentage of total number of respondents in the study, n=96, except where otherwise stated.

Results from qualitative analysis of open-ended responses

In addition to the quantitative response using a 5-point rating scale, open-ended questions were provided for four questions, and these were represented using word clouds. The open-ended questions enquired about 'why the specific member stood out', 'what patients liked best about their care', 'what the patient liked least or disliked about their care', and 'the aspect of the care that could be improved'. The responses to these questions are represented in Table 4 and Figures 1- 4.

Among respondents who explained why a particular staff member stood out, the main focus was on the attending doctor's attentiveness and thoroughness. The most common phrases were "attentiveness of the doctor," "passionate and meticulous," followed by "very professional and competent," "meticulousness of the doctor," "kind and polite," and "doctor adequately explained diagnosis" (Figure 1). These responses align with the quantitative data, which showed that patients most often identified the attending doctor, rather than nursing or other staff, as standing out in their care.



Figure 1. Word cloud of reasons a specific staff member stood out (n = 46 responses).

Among respondents highlighting their care preferences, the most common theme was “prompt attention.' This was closely followed by “affordable services,” “procedures/treatment explained adequately,” “generally satisfied,” “good listening skills,” and “reduced waiting time.' There were also frequent mentions of staff professionalism, competence, courtesy, and friendliness (see Figure 2).



Figure 2. Word cloud of what patients liked best about their care (n = 78 responses; 116 key words/phrases).

Conversely, when respondents detailed what they liked least, ‘long waiting time' emerged as the most common complaint, followed by issues like 'lack of courtesy from some nurses or health assistants,’ delays in seeing a doctor, and environmental problems such as a ‘dirty waiting area with worn-out seats,’ ‘poor hygiene in the clinic toilet,’ and ‘non-functional equipment’ or ‘insufficient seating’ (see Figure 3). A few responses also highlighted clinical or service-related issues, including ‘ongoing tinnitus symptoms despite treatment,’ the ‘unavailability of hearing-aid services,’ and the need for outside referrals due to unavailability of service or equipment failures.



Figure 3. Word cloud of what patients liked least about their care (n = 30 responses).

Consistent with this, among respondents who mentioned specific areas for improvement in care, the most common concern was that 'nurses can be more courteous.' Other suggestions included reducing the wait time before receiving care, offering refreshments in the waiting area, fixing unavailable or malfunctioning test equipment, increasing the number of patients seen daily by a consultant, improving signage to the payment point, and addressing environmental issues like air conditioning, non-operational taps, unreliable electricity, and staffing shortages (see Figure 4).

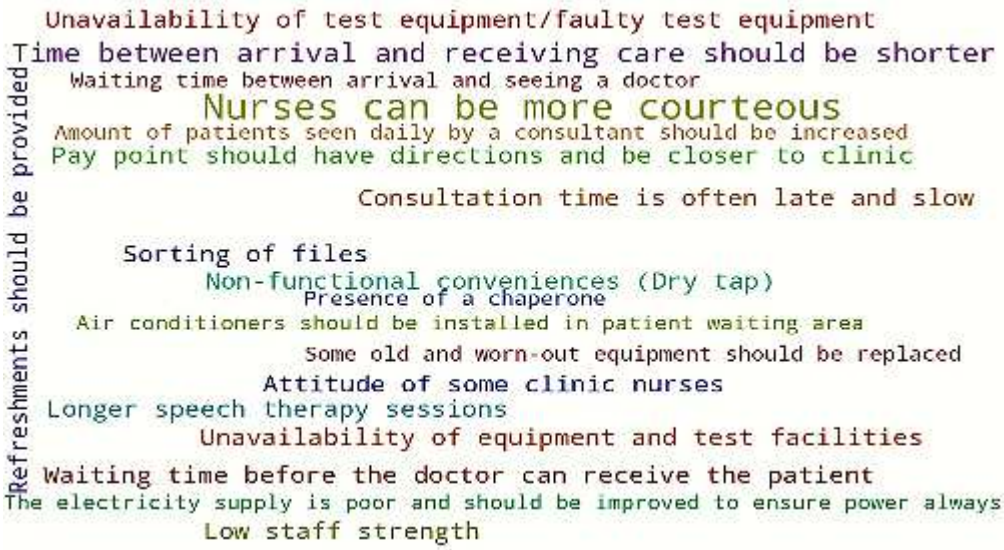


Figure 4. Word cloud of suggested aspects of care for improvement (n = 25 responses).

Table 4. Dominant Qualitative subjects from Open-Ended Responses

Item (question)	n = 96 analysed	Dominant theme(s)	Other recurring themes
Why staff member stood out	46	"Attentiveness of the doctor"; "Passionate and meticulous"	Very professional and competent; meticulousness of the doctor; kind and

			polite; adequately explained diagnosis; very devoted to duty
What patients liked best	78 (116 mentions)	"Prompt attention"	Affordable services; procedures/treatment explained adequately; generally satisfied; good listening skills; reduced waiting time; professionalism; competence
What patients liked least	30	"Long waiting time"	Lack of courtesy of some nurses/health assistants; delay in seeing a doctor; dirty waiting area/toilet; non-functional equipment; unavailability of some drugs or hearing-aid services
Aspect of care to improve	25	"Nurses can be more courteous"	Shorten arrival-to-care time; provide refreshments in waiting area; address faulty test equipment; increase consultant capacity; improve payment-point signage; install air conditioning; increase staff strength.

It is interesting to note that 'waiting time' emerged as the most prominent theme throughout the open-ended responses, regardless of direction. It was also the most common complaint and the most frequently suggested area for improvement, reflecting its peculiar position as the lowest-rated aspect of care in the quantitative scores (see Table 2). On the other hand, a different group of respondents have highlighted 'prompt attention' and 'reduced waiting time' as some of the most positive comments. This indicates divergent perceptions of clinic timeliness within the patient population attending the clinic.

DISCUSSION

This study was conducted to identify the areas of care offered by the Audiovestibular medicine clinic of UPTH that contribute to its patients' satisfaction, while assessing the strengths and weaknesses of this care. To our knowledge, this is the first empirical patient satisfaction assessment specific to Audiovestibular medicine services in Nigeria and the West African sub-region. It is also the first of its kind in combining the structured rating system with the open-ended response word frequency analysis of its patients' feedback.

Generally, patients attending the UPTH AVM clinic showed high satisfaction across all measured domains, with the top two ratings on the 5-point scale exceeding 80%. They showed high trust and loyalty, with 97.9% willing to return to the same doctor and 96.9% willing to recommend the clinic to friends and family. The overall patient satisfaction observed from this AVM clinic survey is higher than that reported in several studies conducted in the General out-patients department of hospitals in Nigeria and the subregion. While Adamu and Oche reported a 52% satisfaction in their study among attendees of GOPD in a tertiary hospital in Nigeria (Adamu and Oche, 2022), Tateke et al in their study at a public hospital GOPD in Ethiopia, had less than a fifth of their study population reporting high satisfaction (Tateke et al., 2012). Even the outcome in the study by Owusu et al who reported a higher satisfaction of 90.9% in their GOPD study in Ghana (Owusu

et al., 2024), remained below the level of satisfaction obtained in this study. Although the high satisfaction scores for several items, as observed in this study, may align with known response and social desirability biases in on-site surveys (Mazor et al., 2002) which potentially underestimate genuine dissatisfaction, other studies being compared were also conducted as on-site patient satisfaction assessments, which makes similar effects inherent, and our comparatively higher performance plausible.

On the other hand, an explanation for higher patient satisfaction from our clinic may be due to the appointment-based kind of attendance, with lower clinic volume and more clinician-patient time, and the intensive nature of a dedicated specialist AVM clinic service as compared to the high-volume general outpatient clinic attendance. The smaller and more consistent care team involved in a specialty clinic fosters a stronger clinician-patient relationship, in addition to the diverse case types and expectations between the patients attending GOPD clinics and the specialty AVM clinic. It may also be that some of this difference in patient satisfaction may be due to the different methods and tools employed in the respective patient satisfaction surveys.

Considering the pattern of satisfaction across different domains in this study, it aligns with that described in several studies in Nigeria and sub-Saharan Africa, where clinician-related domains of interaction with patients during consultation, competence, and use of educational information were rated higher than nursing administrative procedures, waiting time, and directional support (Adamu & Oche, 2022; Tateke et al., 2012). This implies that waiting time, defined as the time lag between arrival and being seen by a doctor, which was the lowest-rated item in this study, is a consistent source of patient dissatisfaction in hospitals in Nigeria and within the West African sub-region. This reflects a broader structural and resource limitation commonly seen across the region, and not a finding specific to the AVM service. On the contrary, doctor-related factors like competence and patient-friendly consultation are central in determining patient satisfaction in the outpatient clinics in Africa (Ajayi et al., 2005; Tateke et al., 2012). When planning quality improvement measures, this pattern must be considered if further gains in satisfaction are to be achieved. Given that clinician performance is already highly rated, it is more likely that optimising administrative process design, alongside improving patient flow and environmental upgrades, would markedly improve patient satisfaction, rather than a focus on clinician-related factors.

The findings from the open-ended responses reinforced and extended the findings from the structured rated responses. The most highly rated domain of clinician-patient interaction converged strongly with the reason patients gave as what they liked best about the care received. This indicates that the meticulousness, professionalism, and attentiveness of the attending doctor were the most liked aspects of care, reinforcing the doctor-patient relationship as the most positive driver of patient satisfaction with the AVM clinic. Waiting time, which was the most mentioned least liked aspect of care and a priority for improvement in AVM care, was also one of the most frequent positive comments, listed as ‘prompt attention’ and ‘reduced waiting time.’ This simply indicates that the timeline of care is experienced differently by different patients and may also depend on factors that were not captured in this survey, such as the time of day the patient was attended to, clinic volume, or whether diagnostic procedures were involved during

the patient's clinic visit or not. The open-ended responses raised concerns which spontaneously emanated from the clinic attendees without being prompted, highlighting issues that could not be captured by the structured rating questions, such as unhygienic condition of the toilets, dry taps, non-functional equipment, inconsistent electricity supply, and low staff strength as perceived by some of the patients. This highlights a limitation of using only a structured rating system in surveys and emphasises the need for these open-ended questions when designing surveys that would capture the determinants of patient satisfaction in settings like a Nigerian tertiary hospital, because they give a fuller picture of patients' experience and satisfaction.

This study had a sample population that was markedly skewed towards the paediatric age group, which reflects the considerable global burden of disease of childhood hearing loss, vestibular disorders, and paediatric speech and language pathology, which is within the broad scope of the AVM clinic (Guo et al., 2024). However, because minor questionnaires were completed by their accompanying parent or guardian, the responses reflected proxy and not direct patient reports. According to the paediatric health-related quality of life report from a study involving 149 children aged 5-9 years, agreement between child self-report and parent or guardian proxy report can vary by a poor to moderate margin in some circumstances, with parental expectations independently influencing proxy ratings (Cremeens et al., 2006). Thus, the satisfaction ratings by paediatric patients in this study may reflect parent or guardian perception of the AVM clinic experience rather than that of the child.

Nearly half of the respondents praised a particular staff member, mainly the attending doctor rather than nurses or other staff, highlighting the importance of the doctor–patient connection as the main factor behind the positive experiences in this AVM clinic. While this is a strength for the service, it is also an area of vulnerability because if patient satisfaction is largely dependent on individual clinicians, it might be less stable or appreciated in the face of staff changes or availability issues compared to satisfaction based on broader processes in the system. On the other hand, a common qualitative need for improvement, "nurses can be more courteous," and complaints about nurses or attendants lacking courtesy as what is least liked, point to a clear, actionable area of priority improvement for staff customer-service or front-desk training. This insight wouldn't have been obvious from structured ratings alone, as satisfaction with specific nursing aspects such as appointment scheduling remained relatively high in the quantitative data.

The AVM clinic attendees showed a generally favourable satisfaction with diagnostic testing and treatment outcomes, with roughly three-quarters of respondents satisfied with their treatment outcome and about two-thirds satisfied with the doctor's interpretation of their test results. Some attendees may not have undergone testing or treatment at the time of the survey or chose not to respond, because a sizeable number of these domains had “not applicable” or unanswered responses. On the other hand, a small number of patients reported dissatisfaction with treatment outcomes. The reasons for dissatisfaction include absence of a hearing-aid service, referral for surgery, and persistent tinnitus, which reflect genuine clinical limitations rather than generic dissatisfaction with the care.

Patient satisfaction surveys are rarely conducted by service providers, but they are recently gaining increasing importance in healthcare service provision in Nigeria and the sub-region, especially because the poor quality of healthcare is becoming a greater cause of morbidity and mortality than poor access to care in these regions (Owusu et al., 2024). Thus, it's important to understand patients' experience and their assessment of the healthcare service to monitor performance and improve quality of care (Ajayi et al., 2005; Owusu et al., 2024).

Therefore, this study has factors that strengthen its findings. Firstly, to our knowledge, it is the first study in Nigeria and in sub-Saharan Africa to examine patient satisfaction specifically within an Audiovestibular medicine service, addressing a clear gap in the regional literature. Secondly, the use of a structured, previously piloted instrument evaluating multiple domains of the patient clinic experience, together with independent, non-interviewer-administered completion of questionnaires, reduces social-desirability bias and strengthens confidence in the quantitative findings. Thirdly, the addition of word-frequency analysis of patients' open-ended responses is a further strength that allowed patients to generate satisfaction indicators to corroborate the structured ratings. More importantly, patients could generate concerns such as restroom hygiene and equipment functionality that had no corresponding item in the structured instrument, illustrating the value of combining quantitative and qualitative approaches in patient-experience research.

LIMITATIONS

This study has some limitations that should be acknowledged, including that some questions, such as those related to the diagnostic testing and treatment outcomes, had a sizeable number of “not applicable” or no responses, which reduces the effectiveness of the sample size for those findings. In addition to this, a reasonable number of the satisfaction data is based on parent or guardian reports and not direct feedback from the paediatric patients. Lastly, open-ended responses were represented using word-frequency visualisations (word clouds) instead of a more detailed qualitative method such as thematic or framework analysis (DePaolo and Wilkinson, 2014). Although the method applied here efficiently highlights common responses, it does not analyse co-occurrences, context, negations, or subtleties as thoroughly as structured qualitative coding.

CONCLUSION

The Audiovestibular Medicine Clinic of the University of Port Harcourt Teaching Hospital attendees had a high overall satisfaction with their care. Their attending doctors were also highly rated for interpersonal skills, technical expertise, and educational information. The patients' free-text comments on the survey reinforced this high rating, which mostly praised the doctor's attentiveness and “prompt attention.” Long waiting times, nurse courtesy, toilet hygiene, and equipment maintenance were highlighted as areas that need improvement. Finally, all

respondents expressed willingness to return to the same doctor and to recommend the clinic, which indicates their strong trust and loyalty in the UPTH AVM clinic.

As one of the first empirical studies on patient satisfaction for Audiovestibular medicine in Nigeria, these findings establish a baseline for future quality improvements and can be compared with similar specialist audiology and vestibular services regionally and globally.

RECOMMENDATION

Based on these findings, the areas with the greatest potential for improvement include administrative and patient-flow processes such as streamlining registration, optimising appointment scheduling and triage, and enhancing direction and wayfinding to the payment point and pharmacy. According to the survey, the priority aspects for upgrade include the physical waiting environment and its infrastructure, to ensure comfort, cleanliness, restroom hygiene, functional equipment and taps, and child-friendly amenities. Other actions that can ensure improvement include formally acknowledging positive staff practices, especially among attending doctors, who are often recognised by patients for delivering outstanding care, and reinforcing them. Customer-service training for nursing and front-desk staff is needed to address recurring courtesy-related complaints. Regular patient satisfaction audits, conducted annually or biannually with a validated tool, should be institutionalised to monitor trends and assess the impact of upgrades or positive interventions.

Lastly, this method of patient satisfaction survey could be applied to other Audiovestibular medicine clinics and audiology services throughout Nigeria and sub-Saharan Africa to establish benchmarks for these findings and inform the creation of regional quality standards.

DECLARATION

List Of Abbreviations

AVM – Audiovestibular medicine
AGA – American Gastroenterological Association
GOPD – General Outpatient Department
JRCP-TB – Joint Royal College of Physicians Training Board
QAQC – Quality Assurance and Quality Control Committee
UPTH – University of Port Harcourt Teaching Hospital

Ethical Approval

This work was approved as part of a hospital service audit exercise.

Consent to Participate

Every author gave his/her consent to participate in this publication

Consent for Publication

Not applicable

Data Availability Statement

The dataset generated and analysed for this study is available from the corresponding author on reasonable request.

Conflict Of Interest

The authors declare no financial or non-financial conflict of interest.

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The authors declare that no funding was received for this study.

Author Contribution

The study was designed, data analysed, and the manuscript was written by author[1].
The data collection was carried out by authors[2-9.]
The entry of data into the spreadsheet was carried out by authors[1 and 2].

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APPENDIX 1

Patient Satisfaction Survey: Audiovestibular Medicine Clinic, UPTH.

We want to be sure we are doing everything we can to serve you. Please take a minute to fill out this confidential survey. Just let us know what we are doing well and what we can to do better!

Thank you.

Your physician/Doctor:

I saw (mention the name of the Dr. who attended to you) Dr …….. Patient's age…….. sex……..

1. **Please indicate your level of satisfaction with the following items related to your office appointment. Use a scale of 1 to 5, with 5 being Very Satisfied and 1 being Not at all Satisfied. If an item is not related to your care, choose N/A.**

	Not at all Satisfied		Neutral		Very Satisfied	N/A
	(1)	(2)	(3)	(4)	(5)	
Being directed to the waiting area by a nurse.	O	O	O	O	O	O
The time between your arrival at the clinic and seeing the doctor.	O	O	O	O	O	O
The manners of the nurse(s) who scheduled your next appointment.	O	O	O	O	O	O
Clarity of directions to the payment point or to the ENT pharmacy	O	O	O	O	O	O
The professionalism and helpfulness of your attending doctor.	O	O	O	O	O	O
Your waiting time for the procedure (ear washing, PTA, etc.)	O	O	O	O	O	O
The comfort, cleanliness and amenities of the waiting area.	O	O	O	O	O	O
The extent to which staff respected your privacy during clinic consultation.	O	O	O	O	O	O

2. **Please rate the following items related to the delivery of your care. Use a scale of 1 to 5, with 5 being Excellent and 1 being Poor. If an item is not related to your care, choose N/A.**

	Poor (1)	(2)	(3)	(4)	(5)	N/A
Your physician/doctor's listening skills.	O	O	O	O	O	O
His/her explanation of procedures, diagnoses or treatment given.	O	O	O	O	O	O
His/her personal manner (courtesy, respect, sensitivity, friendliness).	O	O	O	O	O	O
Other clinic staff's personal manner (courtesy, respect, sensitivity, friendliness).	O	O	O	O	O	O
Technical/ clinical skills (thoroughness, carefulness, competence) of the physician/doctor.	O	O	O	O	O	O
How prepared (with records or educational materials used by the physician/doctor) during your visit.	O	O	O	O	O	O

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3. Please indicate the extent to which you agree or disagree with each of the following statements. Use a scale of 1 to 5, with 5 being Strongly Agree and 1 being Strongly Disagree. If an item is not related to your care, choose N/A.

	Strongly Disagree (1)	Somewhat Disagree (2)	Neutral (3)	Somewhat Agree (4)	Strongly Agree (5)	N/A
My physician/doctor spent adequate time with me.	O	O	O	O	O	O
The service/care provided by the doctor was valuable to improving my health.	O	O	O	O	O	O
The educational information I received was helpful.	O	O	O	O	O	O
I clearly understand the next steps outlined by the doctor in my plan of care.	O	O	O	O	O	O

4. Was any test done in UPTH?

O Yes O No O Not applicable

b) Did you receive your results in a timely manner following your test in clinic?

O Yes O No O Not applicable

5. Would you be glad to return to see this physician/doctor for further care?
O Yes O No

6. Would you recommend this doctor or AVM clinic to family and friends?
O Yes O No

7. a. Did any specific staff member stand out? O Yes O No
b. If yes, who (name) and why?

8. a. Was there any aspect of your care at the AVM clinic that could be improved? O Yes O No
b. If yes, please explain.

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9. Please tell us what you like best about the care you received from AVM Clinic.

10. Please tell us what you like least or do not like about the care you received.

11. How many times have you been to this clinic? Once ( ). 2-5 times ( ) more than 5 times ( )

12. Please mention any test (hearing test or lab test) you have done.

13. Were you satisfied with the doctor's interpretation of the test result? Yes. ( ) No ( ).

14) Are you satisfied with the outcome of the treatment given by the doctor Yes ( ) No ( ).

b) Please explain why?

Thank you very much for your time.

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