EVALUATING THE CHALLENGES AND IMPACT OF TELEHEALTH SERVICES ON THE HEALTH STATUS OF STUDENTS OF UNIVERSITY OF LAGOS AND COLLEGE OF MEDICINE

BY

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IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE DEGREE, B.SC (ED) IN HUMAN KINETICS.

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CHAPTER 3

RESEARCH METHODOLOGY

In this chapter, the processes and procedures that were followed in carrying out the study are discussed under the following subheadings:

1. Research Design
2. Population of the Study
3. Sample and Sampling Techniques
4. Instrument for Data Collection
5. Pilot Study
6. Validity of the Instrument
7. Reliability of the Instrument
8. Procedure for Data Collection
9. Procedure for Data Analysis

Research Design

The study adopted a descriptive survey research design. This design is appropriate for evaluating the challenges and impact of telehealth utilisation on the health status of students of UNILAG and CMUL. By employing a quantitative method with supporting qualitative data, the research explored perceptions, experiences, and insights into telehealth adoption and utilisation, accessibility, challenges and health outcomes.

Population of the Study

The study's population comprised undergraduate students at the University of Lagos (UNILAG) and its College of Medicine (CMUL). The estimated population totals approximately 40,000 students.

Sample and Sampling Techniques

Stratified random sampling was used by dividing the population into subgroups (strata) based on specific characteristics, faculties, departments and residential hostels. Participants were randomly selected within each stratum through simple random sampling to ensure equal

representation. A sample size of 150 participants was chosen using a convenience sampling technique.

Instrument for Data Collection

The study employed the following instruments. First, a Questionnaire, divided into Section A, which covered demographic data; Section B, which assessed awareness and usage of telehealth services; Section C, which examined perceived challenges in telehealth adoption; Section D, which explored the impact of telehealth on health status; and Section E, which gathered recommendations for telehealth implementation and utilisation. The questionnaire primarily followed a structured format, incorporating a mix of closed-ended and multiple-choice questions. This style ensured standardised responses that can be easily analysed while allowing limited qualitative input through open-ended questions. It is designed for quantitative research, focusing on descriptive statistics to evaluate awareness, utilisation, impact, challenges, and perceptions of telehealth services. The research questionnaire was validated before being administered. Refer to Appendix B for the questionnaire.

Pilot Study

A pilot study was conducted to test the feasibility and clarity of the research instruments. The objectives of this pilot study were to identify potential issues with the questionnaire, refine the questions for clarity, relevance, and ease of understanding, and ensure that the instruments could effectively capture data related to telehealth challenges and impact. A total of 20 participants, comprising 10 students each from both UNILAG and CMUL, were selected through stratified sampling for the pilot. Participants completed the questionnaire and provided feedback on any ambiguous or unclear items. Responses from the pilot study were analysed for inconsistencies, and any ambiguous or redundant questions were revised accordingly. The reliability of the questionnaire was assessed using Cronbach's Alpha during the pilot phase. The results of the pilot study guided adjustments to the instruments and procedures before full-scale data collection.

Validity of the instrument

Regarding the validity of the instrument, content validity was ensured by having the instruments reviewed by experts in public health, telemedicine, and research methodology to ensure they align with the study objectives. Face validity was confirmed by the pilot study, which ensured the clarity and relevance of the questionnaire items.

Reliability of the Instrument

The questionnaire's reliability was tested using the **Cronbach's Alpha method** during the pilot study to determine internal consistency. A reliability coefficient of 0.7 or higher was considered acceptable.

Procedure for Data Collection

Data collection occurred over four weeks and involved the following steps. First, during preliminary engagement, permission was obtained from the authorities at UNILAG and CMUL, and participants were briefed about the study objectives while informed consent was obtained. Next, during survey administration, questionnaires were distributed electronically via email and Google Forms, with trained research assistants facilitating both the distribution and collection of the questionnaires. Make reference to Appendix C for evidence on field data collection.

Procedure for Data Analysis

Quantitative data were summarised using descriptive statistics, such as frequencies, percentages, and means. Inferential statistics, including t-tests and ANOVA, were employed to identify significant differences or relationships in telehealth usage and health outcomes between groups. Statistical analysis was performed using SPSS. In terms of qualitative data, open-ended responses were analysed thematically to identify common patterns and insights into telehealth challenges and potential impacts. Finally, the integration of quantitative and qualitative findings through triangulation provided a holistic understanding of telehealth utilisation in UNILAG and CMUL.

CHAPTER FOUR

ANALYSIS, RESULT, AND DISCUSSIONS OF FINDINGS

This study evaluates the Challenges and Impact of Telehealth services on the Health Status of Students of University of Lagos and College of Medicine. This chapter provides a comprehensive analysis under the following sub-headings:

1. Descriptive Analysis of Variables
2. Testing of Hypotheses
3. Discussion of findings

The data collected for this study includes both descriptive and inferential statistical techniques. The chapter is organised into different sections, including the study's response rate and a descriptive analysis of the variables linking the challenges and impact of telehealth services on the health status of students of the University of Lagos and the College of Medicine. The researcher used Statistical Package for Social Sciences (SPSS version 26), a popular statistical analysis software package, to conduct the analysis.

The chapter includes data from the respondents, which was analysed descriptively using frequency counts and simple percentages, mean and standard deviation to answer research questions, while t-test analysis tools were used to test the stated hypotheses using Statistical Package for Social Sciences (SPSS) at a 0.05 level of significance.

4.1 Descriptive Analysis of Variables

Table 4.1: Distribution According to Gender

Variables	Frequency	Percentage (%)
Male	70	46.7
Female	80	53.3
Total	**150**	**100**

Source: Field Survey, 2025

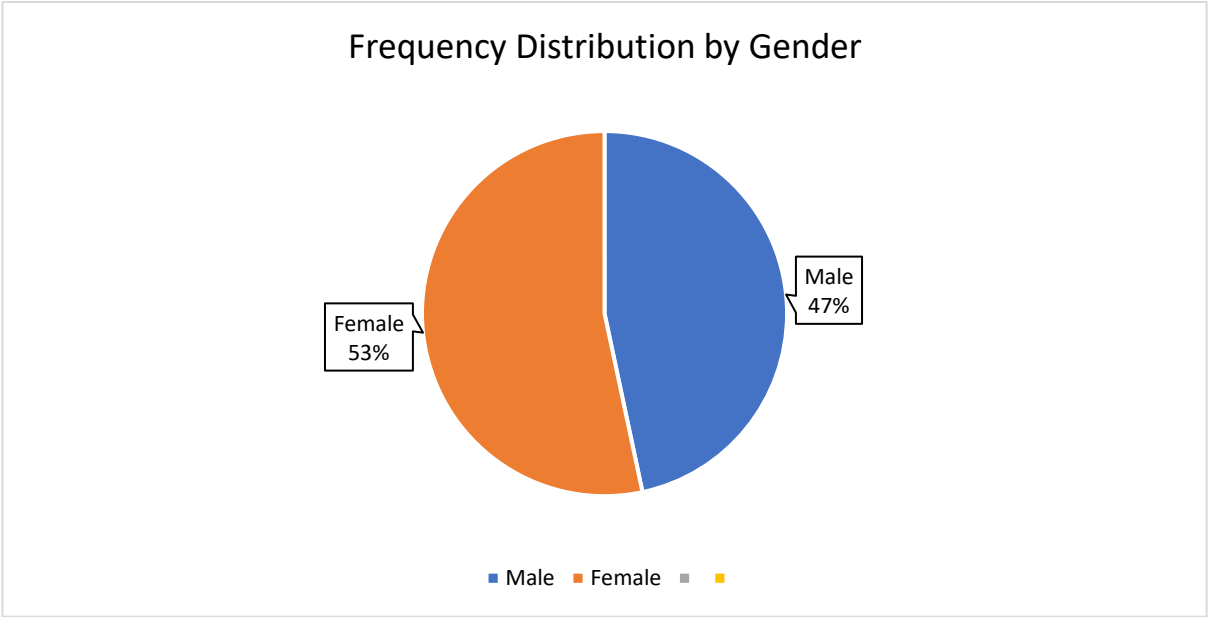


Table 4.1 presents the distribution of respondents by gender. Out of the total 150 respondents surveyed, 70 (46.7%) were male, while 80 (53.3%) were female. This indicates a slight female majority among the participants. The gender distribution suggests that both male and female perspectives were fairly represented in the study, with a marginal predominance of female respondents.

Table 4.2: Age Group of the Respondents

Age	Frequency	Percentage (%)
18 – 22 years	101	67.3
23– 27 years	43	28.7
28 Above years	6	4.0
Total	**150**	**100**

Source: Field Survey, 2025

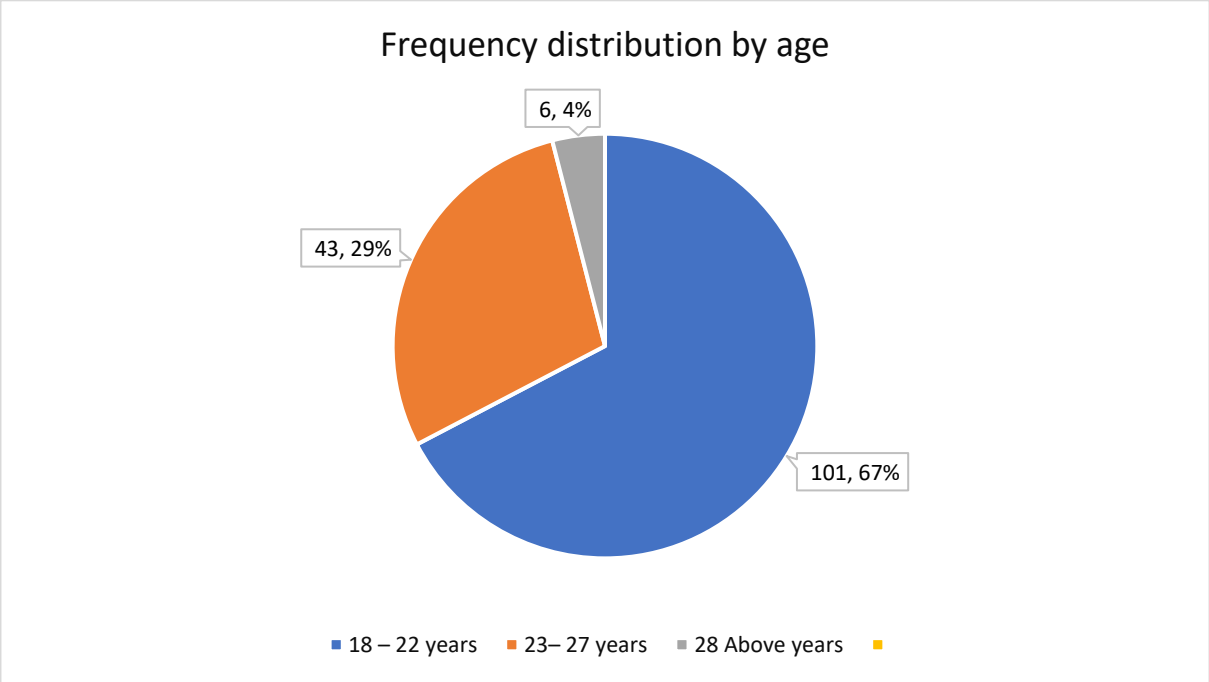


Table 4.2 shows the age distribution of the respondents. The majority of the participants, 101 respondents representing 67.3%, were within the 18–22 years age group. This was followed by 43 respondents (28.7%) who were between 23 and 27 years. A smaller proportion, 6 respondents (4.0%), were aged 28 years and above. This distribution indicates that most of the respondents were within the younger age bracket, which is typical of undergraduate and early postgraduate student populations.

Table 4.3: I am an Undergraduate student of the University of Lagos, College of Medicine, and I voluntarily agree to participate in this study, having read and understood the information above.

Variables	Frequency	Percentage (%)
YES	150	100
Total	**150**	**100**

Source: Field Survey, 2025

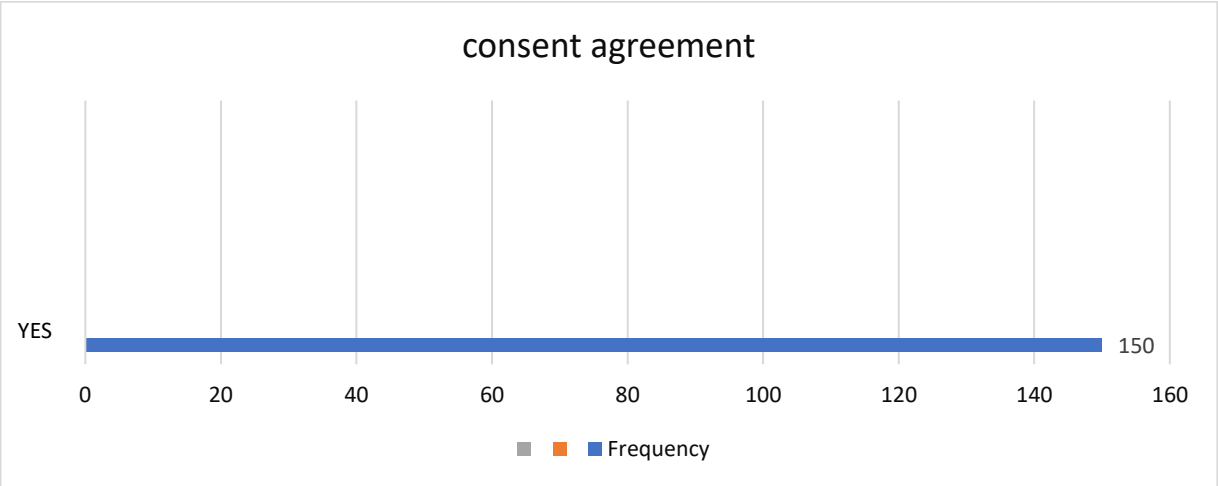


Table 4.3 presents respondents' informed consent to participate in the study. All 150 respondents (100%) affirmed that they were undergraduate students of the University of Lagos or the College of Medicine and that they voluntarily agreed to participate in the research after reading and understanding the provided information. This total response rate indicates that ethical procedures were duly followed, ensuring that participation was based on informed consent.

Table 4.4: Institution

Variables	Frequency	Percentage (%)
College of Medicine	75	50
University of Lagos	75	50
Total	**150**	**100**

Source: Field Survey, 2025

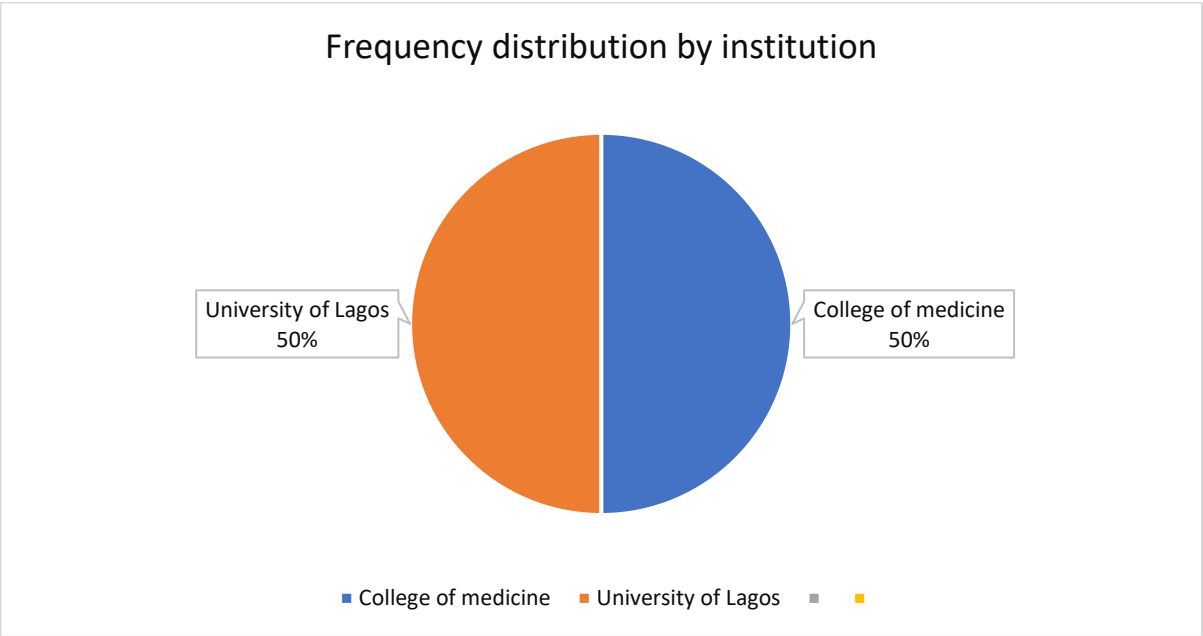


Table 4.4 displays the institutional affiliation of the respondents. Out of the 150 participants, 75 respondents (50%) were from the College of Medicine, while 77 respondents (50%) were from the University of Lagos (main campus). This relatively balanced distribution ensures that perspectives from both institutions are adequately represented in the study.

Table 4.5: Faculty of the Participant

Variables	Frequency	Percentage (%)
Faculty of Art	8	5.3
Faculty of Basic Medical Science (BMS)	23	15.3
Faculty of Engineering	9	6.0
Faculty of Environmental Science	11	7.3
Faculty of Law	08	5.3
Faculty of Management Science	09	6.0
Faculty of Clinical Science	23	15.3
Faculty of Dental Science	11	7.3
Faculty of Education	17	11.3
Faculty of Science	7	4.7
Faculty of Social Science	6	4.0
Faculty of Pharmacy	18	12.0
Total	**150**	**100**

Source: Field Survey, 2025

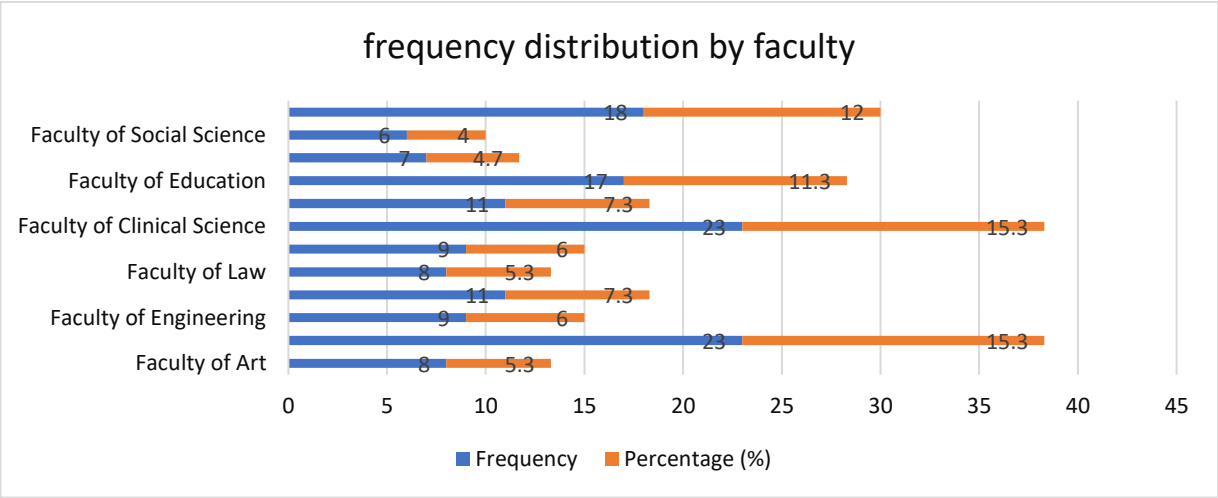


Table 4.5 shows the distribution of participants according to their faculty. The largest proportion of respondents came from the Faculty of Clinical Science (15.3%), followed by Basic Medical Science (15.3%), and then the Faculty of Education (11.3%). Notably, the Faculty of Pharmacy

also had a significant representation at 12.0%. Faculties with lower representation include the Faculty of Social Science (4.0%) and the Faculty of Science (4.7%). This distribution reflects a broad cross-section of students from both the University of Lagos (UNILAG) and the College of Medicine (CMUL), which enhances the generalizability of the study's findings regarding the awareness, usage, and perception of telehealth services.

Table 4.6: Residence of the Participant

Variables	Frequency	Percentage (%)
INSIDE-CAMPUS	107	71.3
OUTSIDE-CAMPUS	43	28.7
Total	**150**	**100**

Source: Field Survey, 2025

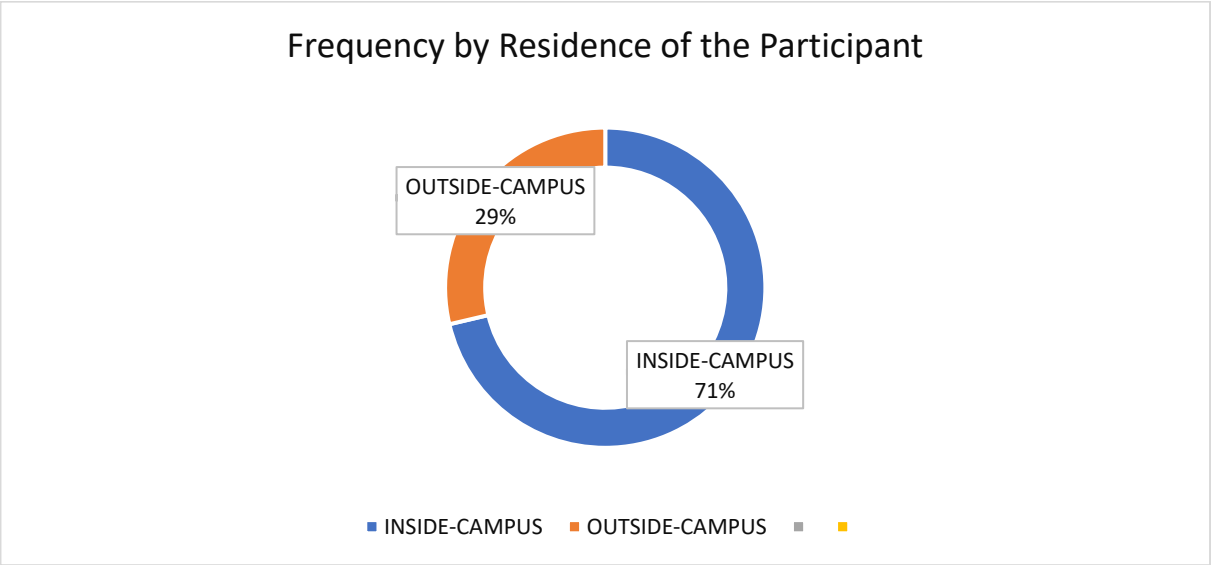


Table 4.6 presents the residential status of the respondents. The majority of participants, comprising 107 respondents (71.3%), resided on campus, while 43 respondents (28.7%) lived off campus. This indicates that most of the students had on-campus accommodation, which may influence their accessibility to university-based telehealth services.

Table 4.7: Academic Level

Variables	Frequency	Percentage (%)
100L	09	6.0
200L	54	36.0
300L	40	26.7
400L	31	20.7
500L	11	7.3
600L	3	2.0
JUPEB	2	1.3
Total	**150**	**100**

Source: Field Survey, 2025

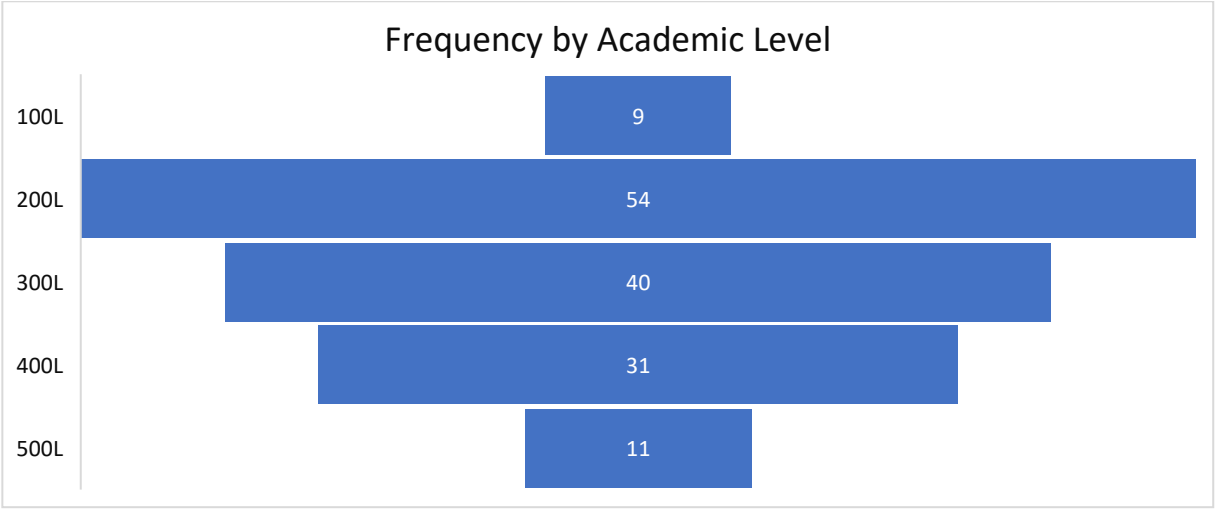


Table 4.7 presents the distribution of respondents by academic level. The largest group of participants, 54 students (36.0%), were in the 200 level, followed by 40 students (26.7%) in the 300 level, and 31 students (20.7%) in the 400 level. Smaller proportions were recorded in other levels: 11 students (7.3%) in 500 level, 9 students (6.0%) in 100 level, 3 students (2.0%) in 600 level, and 2 students (1.3%) in the JUPEB programme. This distribution indicates that the majority of respondents were in their intermediate years of study.

Questions 1 and 2: How does the awareness and perception of telehealth vary among students of UNILAG and CMUL?

Table 4.8: Are you aware that telehealth services are available at UNILAG/CMUL

Variables	Frequency	Percentage (%)
NO	106	70.1
YES	44	29.3
Total	**150**	**100**

Source: Field Survey, 2025

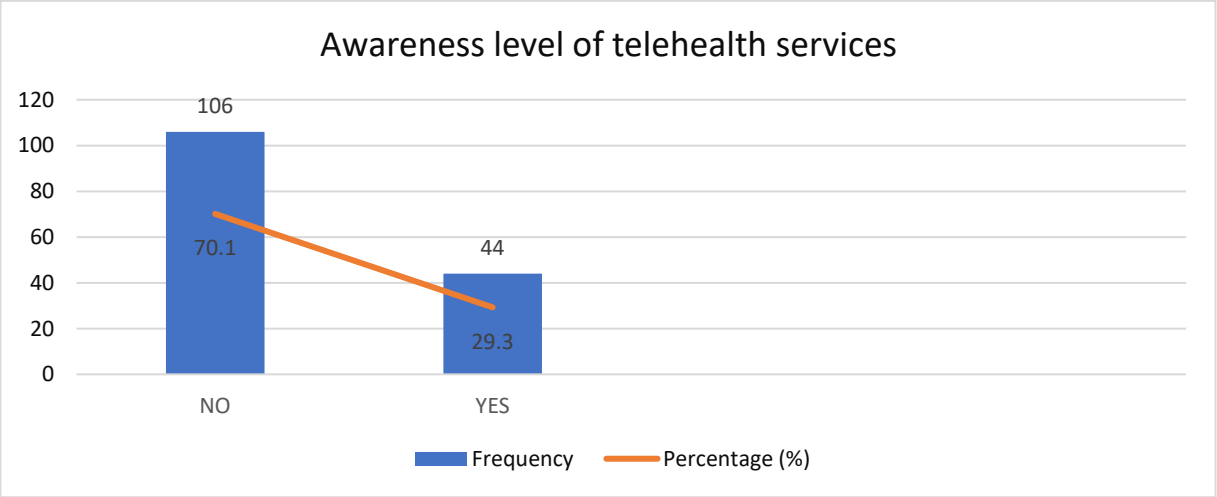


Table 4.8 presents the level of awareness among students regarding the availability of telehealth services at the University of Lagos (UNILAG) and the College of Medicine, University of Lagos (CMUL). Out of the 150 respondents, 106 students (70.1%) indicated that they were not aware of telehealth services at their institution, while only 44 students (29.3%) reported being aware. This finding reveals a significant gap in awareness, suggesting the need for improved communication and sensitisation strategies to ensure that students are well-informed about available telehealth services.

Table 4.9: Have you or anyone that you know used the telehealth services in the institution before?

Variables	Frequency	Percentage (%)
NO	107	71.3
YES	43	28.7
Total	**150**	**100**

Source: Field Survey, 2025

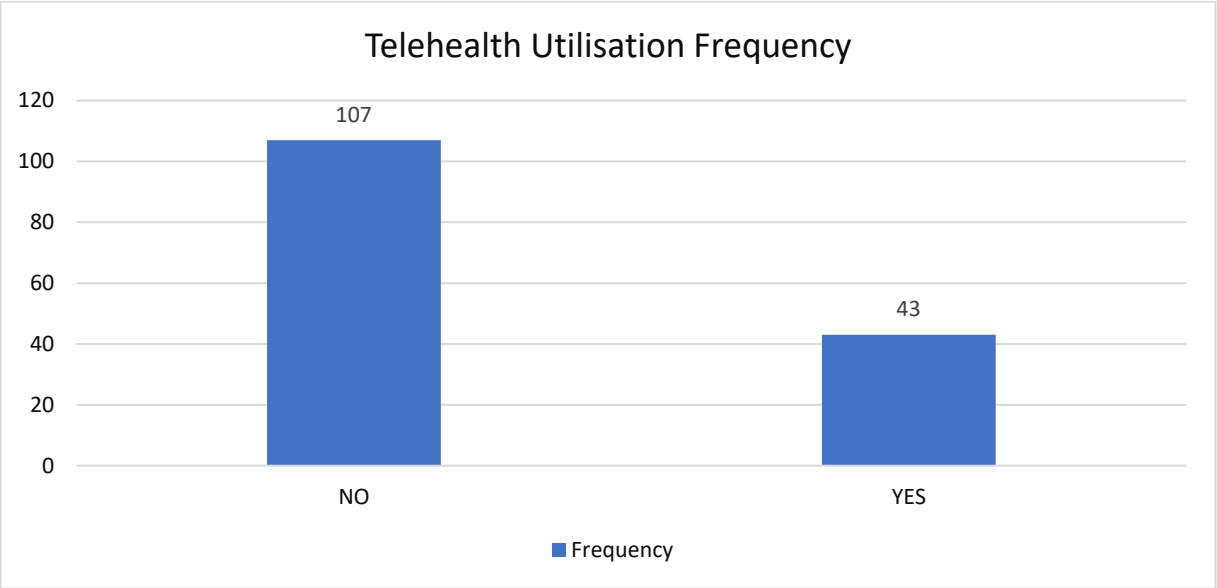


Table 4.9 explores whether respondents or individuals known to them have used the telehealth services provided at UNILAG or CMUL. A majority of the students, 107 respondents (71.3%), indicated that neither they nor anyone they know had used the telehealth services. In contrast, only 43 respondents (28.7%) reported that they or someone they know had previously accessed the services. This suggests limited exposure and utilisation of telehealth services among the student population, despite the potential need and availability of such services.

Table 4.10: If yes, which telehealth services have you used? (Select all that apply)

Variables	Frequency	Percentage (%)
Virtual consultations with doctors	9	6.0
Online mental health support	04	2.7
Remote monitoring for chronic conditions	08	5.3
Health education talks	34	22.7
None	112	74.7
Total	**167**	**100**

Source: Field Survey, 2025

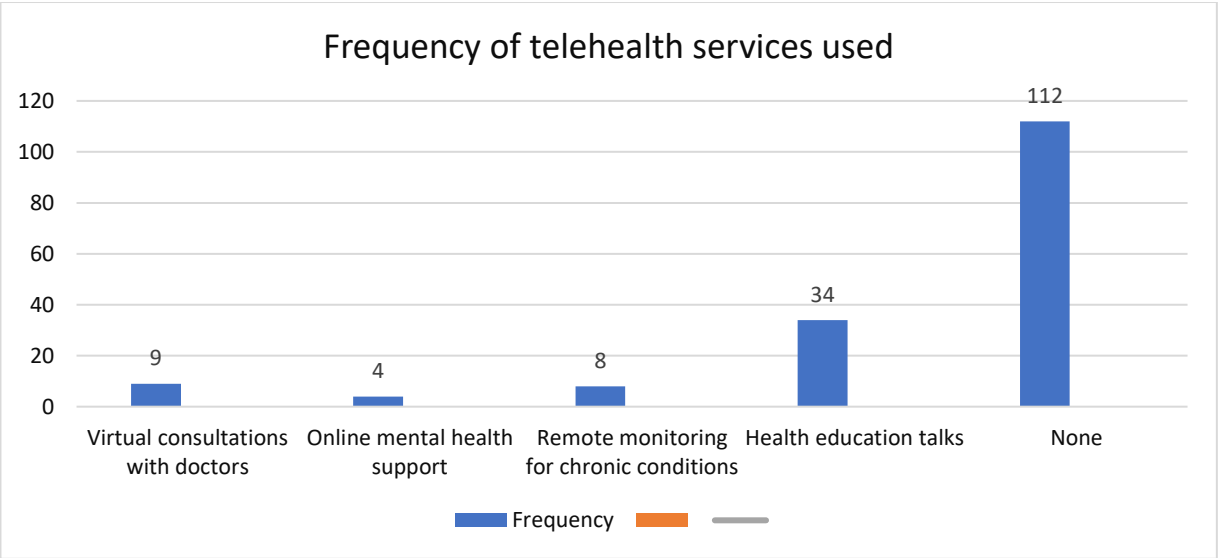


Table 4.10 outlines the types of telehealth services used by students at UNILAG and CMUL. Out of 150 respondents, 112 students (74.7%) reported not having used any telehealth service, indicating low overall uptake. Among those who had used telehealth services, the most commonly utilised was health education talks, cited by 34 students (22.7%). This was followed by virtual consultations with doctors (6.0%), remote monitoring for chronic conditions (5.3%), and online mental health support (2.7%). These figures suggest that while awareness and utilisation of certain telehealth offerings remain low, there is relatively higher participation in broader, informational services, such as health education talks.

Table 4.11: How often do you seek healthcare services within UNILAG/CMUL?

Variables	Frequency	Percentage (%)
Frequently (more than 5 times a year)	4	2.7
Occasionally (2–5 times a year)	35	23.3
Rarely (once or less a year)	65	43.3
Never	46	30.7
Total	**150**	**100**

Source: Field Survey, 2025

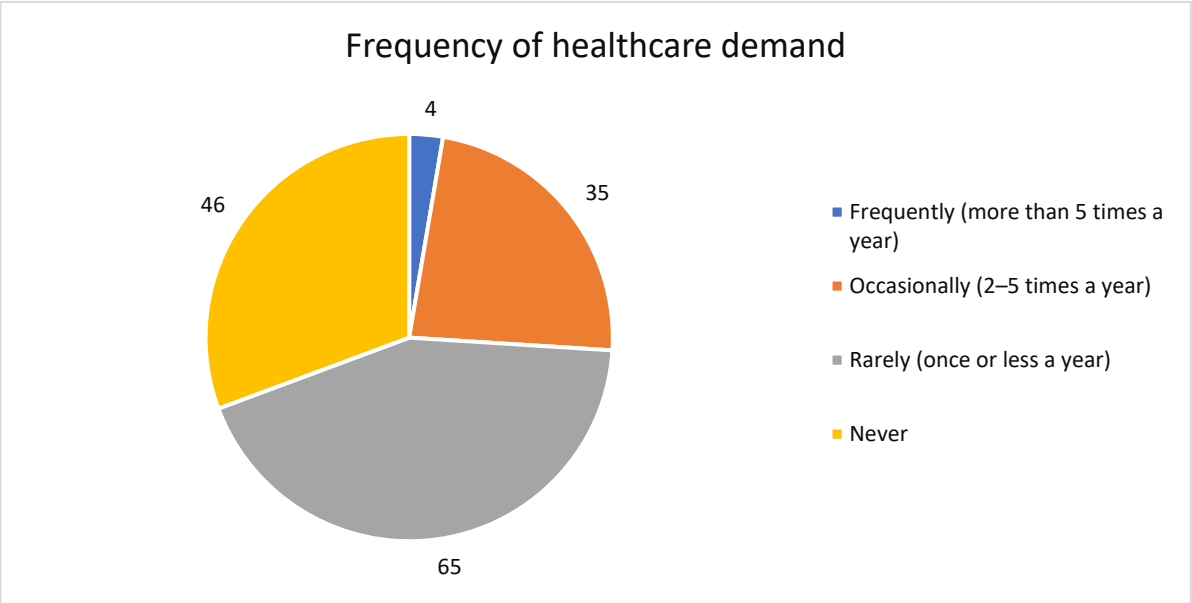


Table 4.11 presents the frequency with which students seek healthcare services within UNILAG and CMUL. A majority of respondents, 65 students (43.3%), indicated that they rarely access healthcare services, defined as once or less per year. In addition, 46 students (30.7%) reported that they have never accessed healthcare services within the institutions. Only 35 students (23.3%) seek healthcare services occasionally (2–5 times a year), while a very small fraction, 4 students (2.7%), reported seeking such services frequently (more than 5 times a year). These findings suggest that healthcare service utilisation within the institutions is generally low, which may be linked to awareness, accessibility, or perception of quality.

Question 3: What factors influence the willingness of students to utilise telehealth services at UNILAG and CMUL?

Table 4.12: Telehealth services in an academic institution like UNILAG/CMUL are very important for students' well-being.

Variables	Frequency	Percentage (%)
Strongly agree	72	48.0
Agree	69	46.0
Neutral	6	4.0
Disagree	2	1.3
Strongly disagree	1	0.7
Total	**150**	**100**

Source: Field Survey, 2025

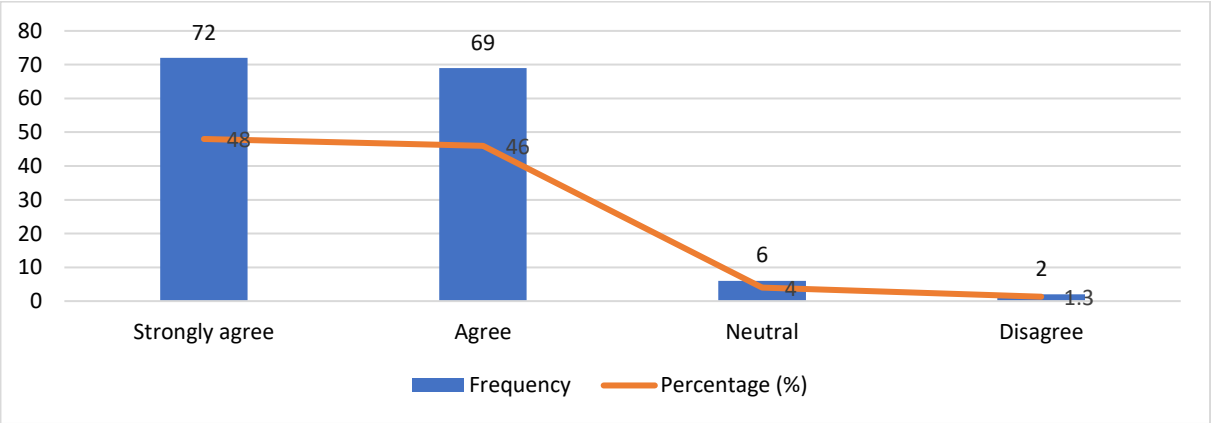


Table 4.12 illustrates students' perceptions regarding the importance of telehealth services in an academic environment such as UNILAG or CMUL. A vast majority of respondents expressed positive views, with 72 students (48.0%) strongly agreeing and 69 students (46.0%) agreeing that telehealth services are important for student well-being. Only a small fraction were neutral (4.0%), while 2 respondents (1.3%) disagreed and 1 respondent (0.7%) strongly disagreed. These results indicate strong support for the integration and promotion of telehealth services within academic institutions, reflecting a shared understanding of its potential benefits for students' health.

Table 4.13: How comfortable are you with using digital platforms for medical consultations?

Variables	Frequency	Percentage (%)
Very comfortable—I prefer online consultations	36	24.0
Somewhat comfortable—I might try it if necessary	93	62.0
Not comfortable—I have concerns about effectiveness and security	13	8.7
Not at all comfortable—I strongly prefer in-person visits	8	5.3
Total	**150**	**100**

Source: Field Survey, 2025

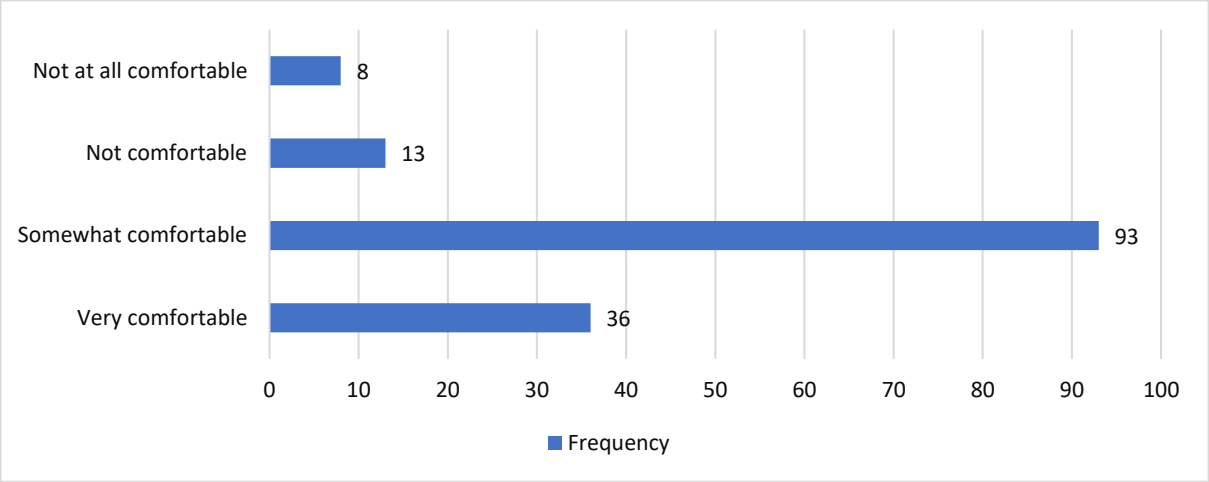


Table 4.13 explores the respondents' comfort levels with using digital platforms for medical consultations. A majority of the students, 93 (62.0%), indicated that they are somewhat comfortable and would consider using telehealth services if necessary. Additionally, 36 students (24.0%) reported being very comfortable with digital consultations, showing a clear preference for online health services. On the other hand, 13 respondents (8.7%) expressed discomfort due to concerns about the effectiveness and security of digital platforms. In contrast, 8 students (5.3%) reported being not at all comfortable, indicating a strong preference for traditional, in-person consultations. These findings suggest a generally positive attitude toward telehealth, though a small segment remains cautious or resistant.

Table 4.14: If telehealth services were improved, how likely are you to use them?

Variables	Frequency	Percentage (%)
Very likely	65	43.3
Likely	69	46.0
Neutral	22	14.7
Unlikely	3	2.0
Very unlikely	0	0.0
Total	**150**	**100**

Source: Field Survey, 2025

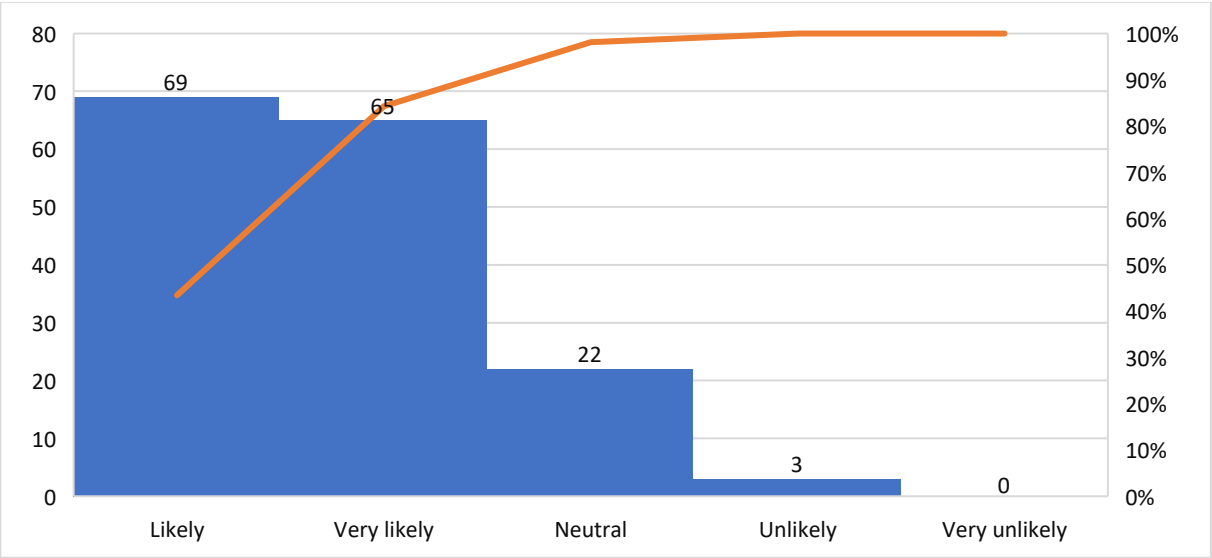


Table 4.14 presents respondents' willingness to use telehealth services if they were improved. A majority of the students expressed a favourable attitude, with 69 students (46.0%) stating they would be likely to use the services, and 65 students (43.3%) stating they would be very likely to use them. A smaller portion, 22 respondents (14.7%), remained neutral, while only 3 students (2.0%) indicated they would be unlikely to use the services. Notably, no respondents (0.0%) selected "very unlikely." This strong positive response indicates a high potential for the adoption of telehealth services among students, provided the system is improved in terms of accessibility, reliability, and awareness.

Research Question 4: What is the impact of telehealth services on the health status of students at UNILAG and CMUL?

Table 4.15: How satisfied are you with the telehealth services provided at UNILAG/CMUL?

Variables	Frequency	Percentage (%)
Very satisfied	11	7.3
Satisfied	33	22.0
Neutral	96	64.0
Dissatisfied	4	2.7
Very dissatisfied	6	4.0
Total	**150**	**100**

Source: Field Survey, 2025

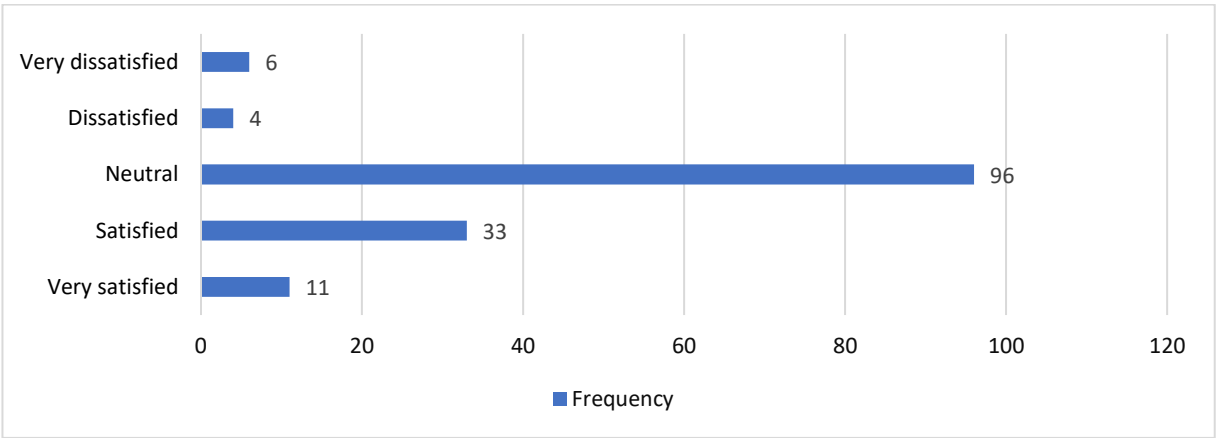


Table 4.15 presents the respondents' level of satisfaction with the telehealth services available at UNILAG and CMUL. The majority of participants, 96 students (64.0%), expressed a neutral stance, indicating uncertainty or limited experience with the services. However, 33 respondents (22.0%) reported being satisfied, and 11 respondents (7.3%) were very satisfied, showing that a portion of the student population found the services beneficial. On the other hand, 4 students (2.7%) were dissatisfied, and 6 students (4.0%) were very dissatisfied, suggesting that some gaps in service delivery still exist. These findings imply that while satisfaction levels are

modest, many students remain undecided, highlighting the need for increased awareness, accessibility, and improvement in service quality.

Table 4.16: What benefits do you associate with telehealth services in the institution? (Select all that apply)

Variables	Frequency	Percentage (%)
Convenience of remote healthcare access	27	16.1
Cost savings on transportation	19	11.3
Faster access to healthcare professionals	42	25.0
Support for mental health issues	57	33.9
Chronic disease management	23	13.7
Total	**168**	**100**

Source: Field Survey, 2025

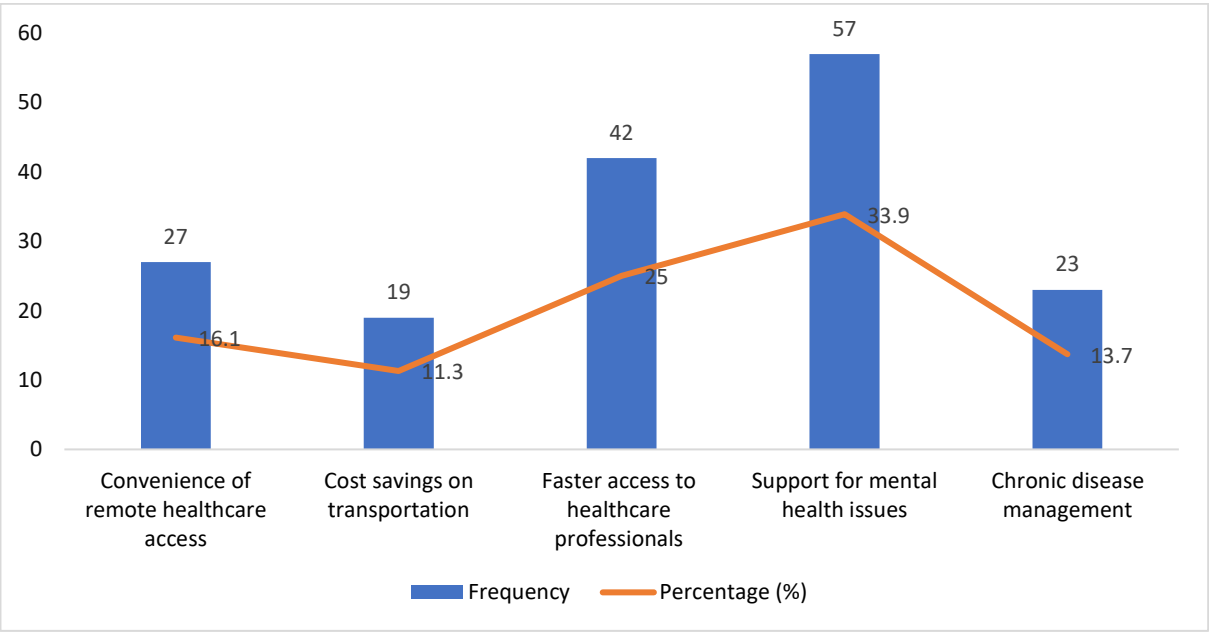


Table 4.16 identifies the benefits students associate with telehealth services at UNILAG and CMUL, based on multiple responses. The most recognised benefit was support for mental health issues, mentioned by 57 respondents (33.9%), underscoring the role of telehealth in addressing

psychological well-being. This was followed by faster access to healthcare professionals with 42 mentions (25.0%), indicating the value of timely consultations. Convenience of remote access was also highlighted, with 27 mentions (16.1%), while chronic disease management and cost savings on transportation were acknowledged by 23 (13.7%) and 19 (11.3%), respectively. These findings suggest that students value telehealth primarily for its mental health support, speed, and flexibility, making it a promising complement to campus healthcare delivery.

Table 4.17: Do you think telehealth services will impact your health-seeking behaviour?

Variables	Frequency	Percentage (%)
It will encourage me to seek care more often	83	55.3
It will reduce my visits to physical healthcare facilities	56	37.3
It will have no effect	8	5.3
It will make me less likely to seek care	3	2.0
Total	**150**	**100**

Source: Field Survey, 2025

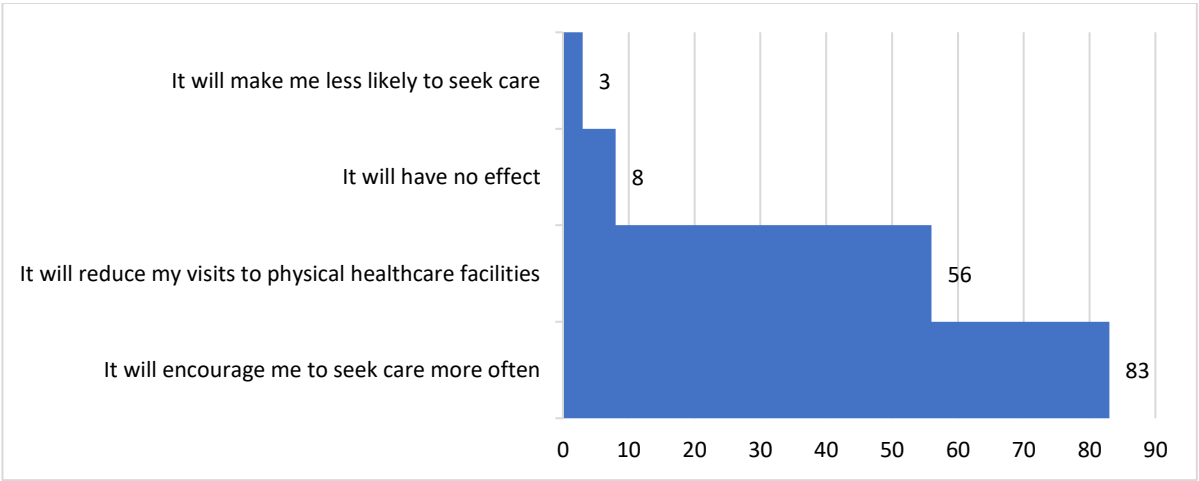


Table 4.17 highlights how students believe telehealth services may influence their approach to seeking healthcare. A majority of respondents, 83 students (55.3%), reported that the availability of telehealth would encourage them to seek medical care more frequently,

indicating a favourable disposition towards the service. Additionally, 56 respondents (37.3%) felt that telehealth would reduce their need to visit physical healthcare facilities, reflecting its potential to ease clinical congestion and improve accessibility. Only 8 students (5.3%) believed telehealth would have no effect, while 3 (2.0%) felt it might discourage them from seeking care. Overall, the responses suggest that telehealth services are likely to have a positive impact on students' health-seeking behaviour by promoting more frequent and accessible care options.

Table 4.18: How do you think telehealth would impact your health status as a student of UNILAG/CMUL?

Variables	Frequency	Percentage (%)
Significantly improve my health outcomes	83	55.3
Somewhat improve my health outcomes	56	37.3
There will be no noticeable impact	11	7.3
Worsen my health outcomes	0	00
Total	**150**	**100**

Source: Field Survey, 2025

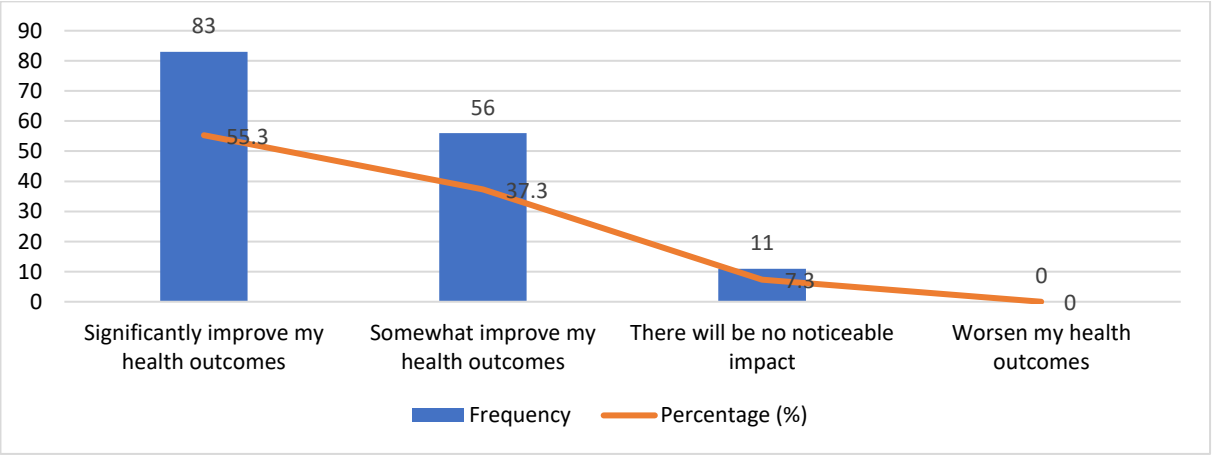


Table 4.18 shows how students at UNILAG and CMUL perceive the potential impact of telehealth services on their personal health status. A substantial proportion of respondents, 83 students (55.3%), believe that telehealth would significantly improve their health outcomes,

while another 56 students (37.3%) expect it to somewhat improve their health. Only 11 students (7.3%) feel that telehealth would have no noticeable effect, and none of the respondents expressed concern that telehealth would worsen their health outcomes. These findings suggest a generally positive perception of telehealth's effectiveness and a strong belief in its potential to enhance students' health and well-being.

Table 4.19: In what areas would telehealth have the most significant impact for you? (Select all that apply)

Variables	Frequency	Percentage (%)
Mental health and counselling	85	46.7
Chronic disease management	7	3.8
General consultations and prescriptions	58	31.9
Health education and prevention	21	11.5
Emergency healthcare access	11	6.0
Total	**182**	**100**

Source: Field Survey, 2025

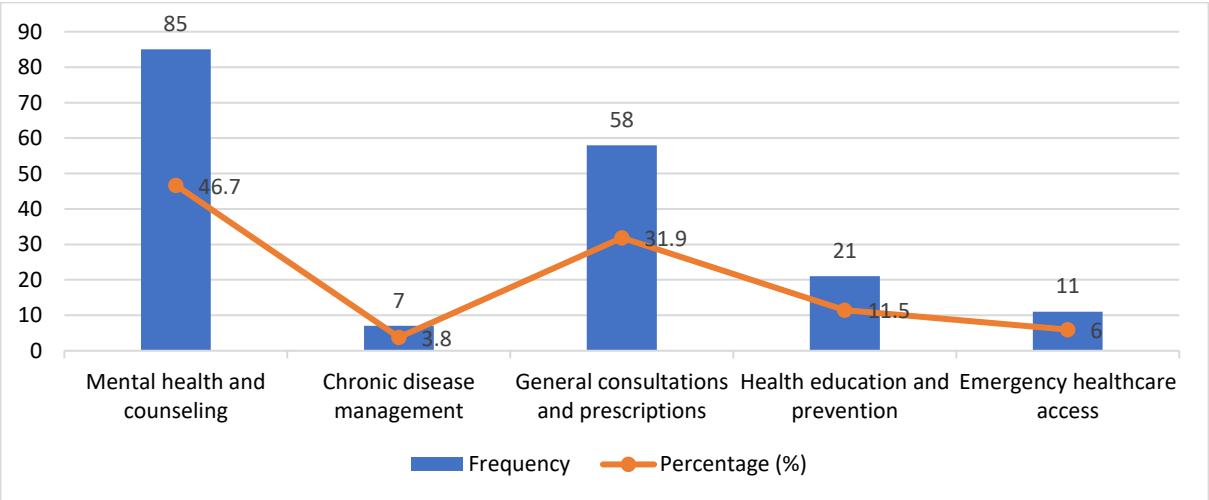


Table 4.19 explores students' opinions on which areas of healthcare would benefit most from telehealth implementation at UNILAG and CMUL. The majority of responses, 85 (46.7%),

indicate that students perceive mental health and counselling as the area where telehealth would have the most significant impact. This reflects growing awareness and the need for accessible mental health support among university students.

Furthermore, 58 responses (31.9%) identified general consultations and prescriptions as a major area of impact, indicating the demand for routine care access without in-person visits. Health education and prevention was selected by 21 students (11.5%), followed by emergency healthcare access (11 responses; 6.0%) and chronic disease management (7 responses; 3.8%).

The results show that students see telehealth primarily as a tool to enhance mental health services and general care, with relatively lower expectations in areas like chronic disease or emergency care.

Table 4.20: In what ways do you think telehealth could improve healthcare delivery at UNILAG/CMUL?

Variables	Frequency	Percentage (%)
Faster access to healthcare professionals	93	57.4
Improved mental health support	29	17.9
Reduced burden on campus healthcare centres	30	18.5
Enhanced convenience and flexibility	10	6.2
Total	**162**	**100**

Source: Field Survey, 2025

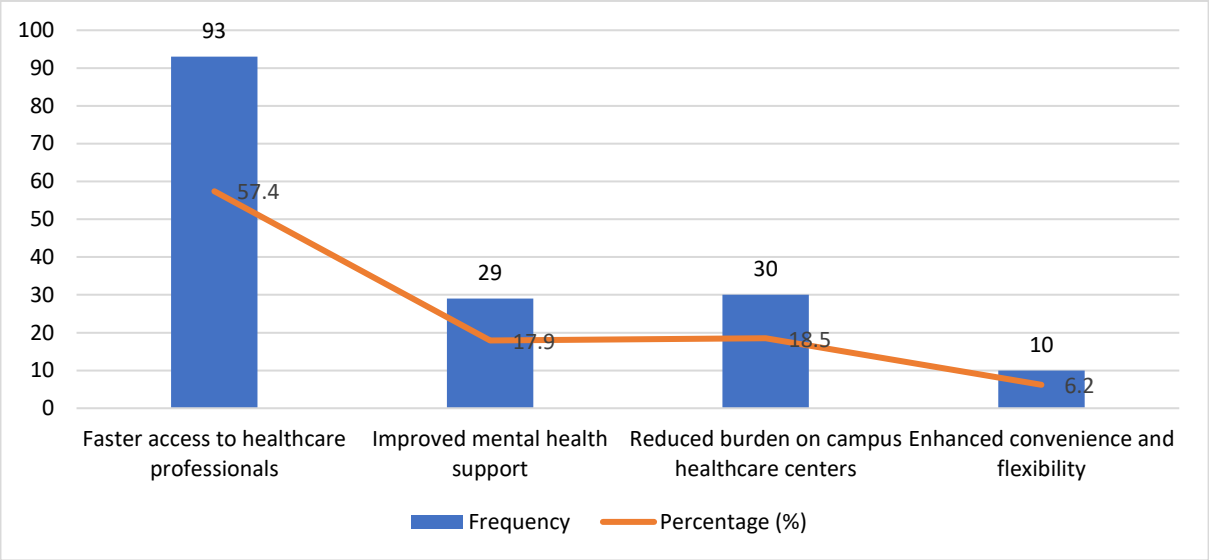


Table 4.20 highlights students' perspectives on how telehealth could enhance healthcare delivery at the University of Lagos and the College of Medicine. A significant portion of respondents, 93 (57.4%), believe that telehealth would enable faster access to healthcare professionals, reflecting a desire for prompt and efficient care.

Additionally, 30 responses (18.5%) point to telehealth's potential in reducing the burden on campus healthcare centres, while 29 (17.9%) see improved mental health support as a major benefit. A smaller proportion, 10 responses (6.2%), associate telehealth with enhanced convenience and flexibility in accessing care.

These findings suggest that students largely value the efficiency and responsiveness that telehealth could bring to healthcare services on campus, especially in terms of speed and workload management.

Research Question 5: Challenges in accessing healthcare and telehealth services

Table 4.21: What are the main challenges you face in accessing healthcare services on campus? (Select all that apply)

Variables	Frequency	Percentage (%)
Long waiting times	135	79.9
Limited access to specialists	15	8.9
Lack of privacy	9	5.3
Poor infrastructure	6	3.6
High cost of external care	4	2.4
Total	**169**	**100**

Source: Field Survey, 2025

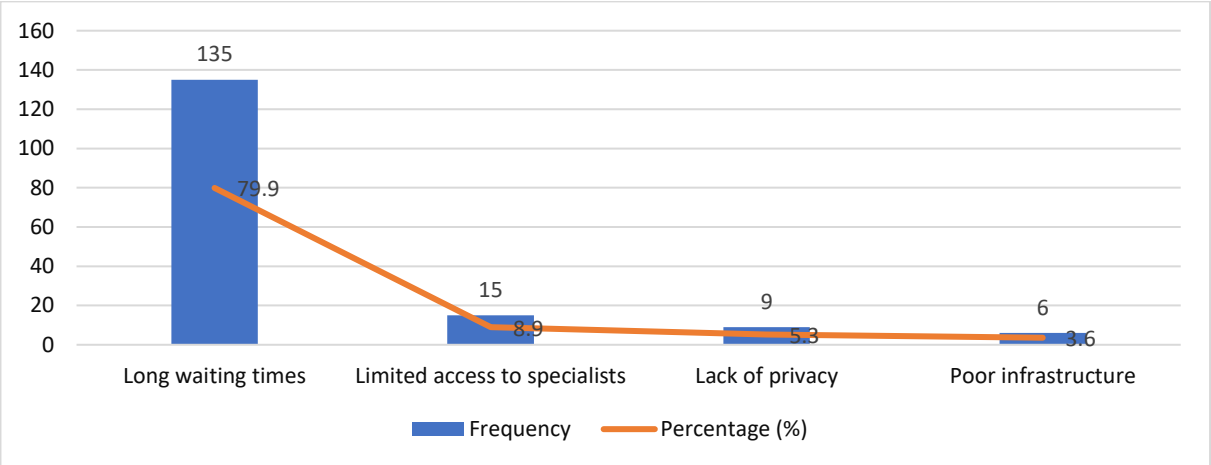


Table 4.21 presents the main challenges students face when accessing healthcare services on campus at UNILAG and CMUL. A vast majority—135 responses (79.9%)—highlighted long waiting times as the most prevalent barrier to effective healthcare delivery. This indicates a significant demand for more timely and efficient services.

Other challenges mentioned include limited access to specialists (15 responses; 8.9%), lack of privacy during consultations (9 responses; 5.3%), poor infrastructure (6 responses; 3.6%), and the high cost of external care (4 responses; 2.4%), which may force students to rely solely on campus health facilities.

The findings underscore the pressing need for improvements in healthcare logistics, infrastructure, and patient confidentiality, as well as the potential role of telehealth in addressing these systemic challenges.

Table 4.22: What challenges have you faced in using or accessing telehealth services? (Select all that apply)

Variables	Frequency	Percentage (%)
Poor internet connectivity	13	8.1
Lack of awareness about telehealth services	98	60.9
Difficulty using telehealth platforms	12	7.5
Concerns about data privacy and security	10	6.2
Preference for in-person consultation	28	17.4
Total	**161**	**100**

Source: Field Survey, 2025

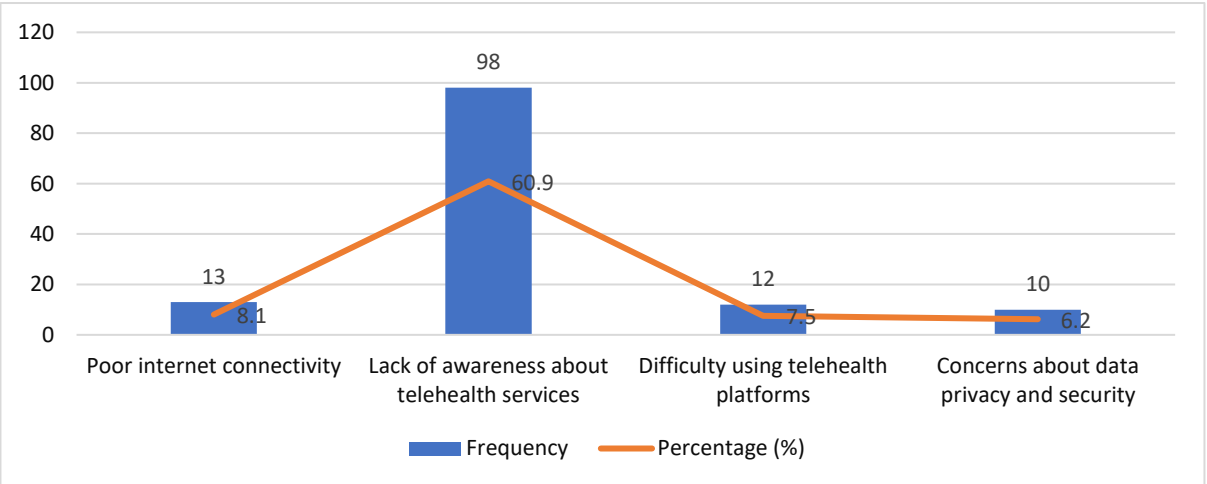


Table 4.22 outlines the specific challenges students at UNILAG and CMUL face when using or attempting to access telehealth services. The most commonly cited barrier was a lack of awareness about telehealth services, with 98 responses (60.9%), highlighting a significant gap in communication and outreach efforts regarding the availability and benefits of telehealth.

A notable number of students also indicated a preference for in-person consultation (28 responses; 17.4%), suggesting that personal comfort and trust in traditional care methods still play a significant role in healthcare-seeking behaviour.

Other challenges reported include poor internet connectivity (13 responses; 8.1%), which reflects infrastructural limitations that can hinder the effective use of digital platforms. Additionally, difficulty using telehealth platforms (12 responses; 7.5%) and concerns about data privacy and security (10 responses; 6.2%) point to both technological and trust-related issues that could affect telehealth adoption.

Overall, the findings suggest that for telehealth to be effectively integrated into the student healthcare experience, there is a need for improved digital infrastructure, awareness campaigns, user training, and strong assurances around data security and privacy.

Table 4.23: What barriers do you think need to be addressed for the successful utilisation of telehealth?

Variables	Frequency	Percentage (%)
Better internet infrastructure	18	10.2
Increased awareness and education	94	53.4
Stronger data security measures	13	7.4
More funding for telehealth programs	51	29.0
Total	**176**	**100**

Source: Field Survey, 2025

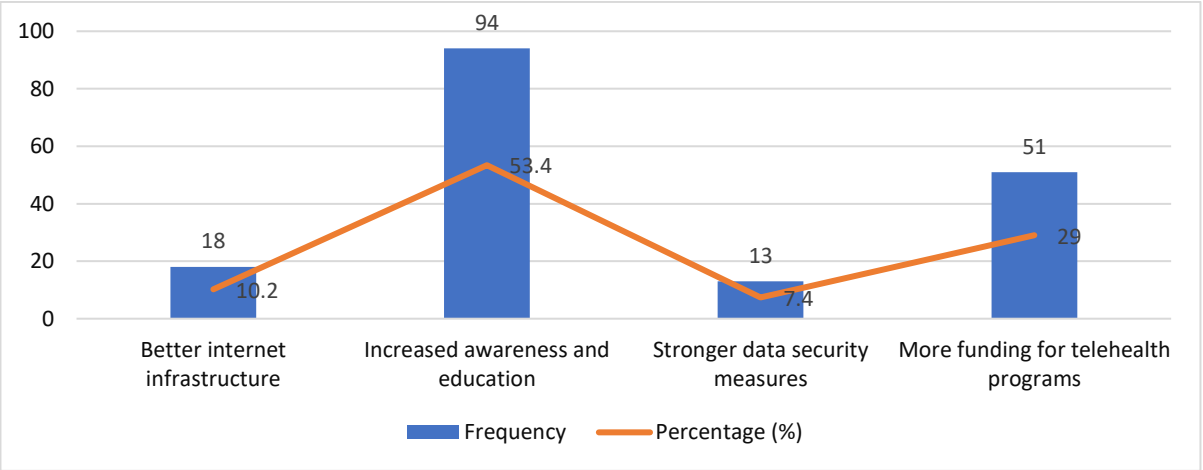


Table 4.23 presents the perceived barriers that need to be addressed for the effective and sustainable utilisation of telehealth services at the University of Lagos (UNILAG) and the College of Medicine, University of Lagos (CMUL). The responses reflect the views of students who were allowed to select multiple options.

A majority of respondents, 94 (53.4%), identified increased awareness and education about telehealth as the most pressing barrier. This suggests that despite the existence of telehealth services, many students may not fully understand how these platforms work or their potential benefits. This aligns with earlier findings that highlighted a general lack of awareness about available telehealth services.

More funding for telehealth programs was cited by 51 respondents (29.0%), indicating a need for financial investment in the necessary infrastructure, training, and technology that support telehealth services. A smaller proportion of respondents 18, 10.2%), pointed to better internet infrastructure as a critical requirement. This reflects the technical challenges often associated with remote consultations, particularly in areas with inconsistent or low-quality internet access. Finally, 13 respondents (7.4%) identified the need for stronger data security measures, highlighting concerns around patient confidentiality and trust in digital health platforms.

Overall, these findings underscore the importance of a multi-pronged approach that includes public education, investment in infrastructure, funding support, and robust cybersecurity policies to ensure the successful implementation and utilisation of telehealth services in academic environments like UNILAG and CMUL.

Table 4.24: What additional suggestions or concerns do you have about telehealth utilisation?

Variables	Frequency	Percentage (%)
Ensuring data privacy and security	05	2.8
Improving internet connectivity on campus	08	4.5
Training staff and students on how to use telehealth platforms	31	17.3
Ensuring the affordability of telehealth services	28	15.6
Providing 24/7 access to telehealth services	76	42.5
Offering multilingual support for diverse users	13	7.3
Integration with existing healthcare systems	18	10.1
Total	**179**	**100**

Source: Field Survey, 2025

Table 4.24 highlights the additional suggestions and concerns raised by students regarding the utilisation of telehealth services at UNILAG and CMUL. The most common concern, indicated by 42.5% of the respondents, was the need for 24/7 access to telehealth services, reflecting the importance of round-the-clock availability of healthcare support to meet students' unpredictable schedules and needs. A significant proportion (17.3%) of respondents suggested the training of staff and students on how to effectively use telehealth platforms, emphasizing the need for digital literacy and proper orientation. Another 15.6% of the participants advocated for affordability, stressing that telehealth services should be financially accessible to all students.

Furthermore, 10.1% called for the integration of telehealth with existing healthcare systems on campus, while 7.3% supported the provision of multilingual support, which would cater to students from diverse linguistic backgrounds. Improving internet connectivity was also raised by 4.5% of the respondents, while 2.8% emphasized the need to ensure data privacy and security.

Overall, the responses suggest that for telehealth to be successful and widely adopted, it must be inclusive, accessible, secure, and effectively integrated into the broader healthcare infrastructure.

4.2 Test of Hypothesis

Hypothesis 1: Students of UNILAG and CMUL have no significant awareness of telehealth services and facilities.

Table 4.2.1: One-sample t-test Analysis of Awareness of Telehealth Services and Facilities among Students of UNILAG and CMUL

Group	N	$\bar{X}$	SD	DF	t-Test value t-cal.	t-tab
Students of UNILAG and CMUL	**150**	**0.29**	**0.46**	**149**	**-5.54**	**1.96**

*Significant if $\rho < 0.05$

Table 4.2.1 presents the results of a one-sample t-test conducted to examine whether students of UNILAG and CMUL are significantly aware of telehealth services and facilities. Awareness was coded as 1 for "aware" and 0 for "not aware," and the mean awareness score was compared to the neutral benchmark of 0.50 (representing no significant awareness). Out of 150 respondents, only 44 students (29.3%) indicated awareness of telehealth services, while 106 students (70.7%) reported no awareness. The mean awareness score was 0.29, with a standard deviation of 0.46. The calculated t-value of -5.54 is greater in absolute value than the critical t-value of ±1.96 at 149 degrees of freedom and the 0.05 significance level. The p-value (1.33×10^{-7}) is far below 0.05, confirming that the observed mean is significantly below the benchmark. Based on these results, the null hypothesis is retained. This finding indicates that there is no significant awareness of telehealth services among the student population. The low awareness level highlights the need for targeted sensitisation and educational campaigns to inform students about the availability, benefits, and usage of telehealth facilities. The finding aligns with reports by Kruse et al. (2016), which identify lack of exposure, limited outreach, and low digital health education as barriers to awareness, especially in low- and middle-income regions. The result suggests a need for targeted campaigns, orientation sessions, and integration of telehealth awareness into university health programs.

Hypothesis 2: There is no meaningful difference in the awareness and perception of telehealth between students of UNILAG and CMUL.

Table 4.2.2: t-test Analysis of the awareness and perception of telehealth between students of UNILAG and CMUL.

Group	N	$\bar{X}$	SD	DF	t-Test value	
					t-cal.	t- tab
The awareness and perception of telehealth among UNILAG	**75**	**0.33**	**0.47**	—	**-0.34**	**1.98**
The awareness and perception of telehealth among CMUL	**75**	**0.36**	**0.48**			

*Not Significant if $\rho < 0.05$

Table 4.2.2 presents the independent samples t-test result used to examine whether a significant difference exists in the awareness and perception of telehealth services between students of the University of Lagos (UNILAG) and the College of Medicine (CMUL). The mean awareness for UNILAG students was 0.33, while CMUL students had a slightly higher mean of 0.36. The calculated t-value of -0.34 and p-value of 0.734 are both statistically non-significant, indicating that the observed difference is likely due to chance. Therefore, the null hypothesis is retained. This finding is consistent with the conclusion of Powell et al. (2017), who reported that in well-connected urban academic settings, institutional differences may not significantly influence students' perception of digital health tools. It also suggests that broader infrastructural and socio-demographic factors may play a more significant role than institutional affiliation alone.

Hypothesis 3: There are no notable factors that influence the willingness of students to utilise telehealth services at UNILAG and CMUL.

Table 4.2.3: t-test Analysis of notable factors that influence the willingness of students to utilise telehealth services at UNILAG and CMUL.

Group	N	$\bar{X}$	SD	DF	t-Test value	
					t-cal.	t- tab
Notable factors that influence the willingness of students	**152**	**3.65**	**4.12**	**2**	**2.25**	**1.21**
Utilise telehealth services at UNILAG and CMUL.	**163**	**5.94**	**6.86**			

Source: Field Survey 2025

Table 4.2.3 presents the result of a t-test conducted to examine whether notable factors influence the willingness of students to utilise telehealth services at the University of Lagos (UNILAG) and the College of Medicine, University of Lagos (CMUL). The analysis involved two groups: the first group, comprising 152 students' entries, reported on the notable factors affecting their willingness to use telehealth services, with a mean score of 3.65 and a standard deviation of 4.12. The second group, comprising 163 students' entries, reported on their actual utilisation of telehealth services, yielding a higher mean of 5.94 and a standard deviation of 6.86.

The calculated t-value (t-cal) was 2.25, while the critical or tabulated t-value (t-tab) at 2 degrees of freedom was 1.21. Since the t-calculated value is greater than the t-tabulated value (2.25 > 1.21), this result is statistically significant at the 0.05 level. Therefore, the null hypothesis, which states that there are no notable factors influencing students' willingness to utilise telehealth services, is rejected.

This implies that there are indeed significant factors that affect whether or not students are willing to make use of telehealth services at UNILAG and CMUL.

Hypothesis 4: Telehealth services have no impact on the health status of students at UNILAG and CMUL.

Table 4.2.4: t-Test Analysis of **Telehealth Services and the Health Status of Students at UNILAG and CMUL.**

Group	N	$\bar{X}$	SD	DF	t-Test value	
					t-cal.	t- tab
Telehealth Services	162	5.86	5.76	6	4.72	1.96
The Health Status of Students at UNILAG and CMUL.	155	5.91	7.45			

*Significant if $\rho < 0.05$

Table 4.2.4 presents a t-test analysis, which was conducted to compare the telehealth services and the health status of students at UNILAG and CMUL. The group representing telehealth services had a total entry of 162, a mean score of 5.86, and a standard deviation of 5.76. The health status group consisted of 155 entries, with a mean of 5.91 and a standard deviation of 7.45. The degrees of freedom (df) for the test were 6. The calculated t-value was 4.72, which is greater than the critical t-value of 1.96 at the 0.05 significance level. Since the t-calculated exceeds the t-tabulated, the null hypothesis is rejected. This indicates that telehealth services have a statistically significant impact on the health status of students at UNILAG and CMUL.

Hypothesis 5: There are no challenges associated with implementing telehealth services at UNILAG and CMUL.

Table 4.2.5: t-Test Analysis of no challenges associated with implementing and utilising telehealth services at UNILAG and CMUL.

Group	N	$\bar{X}$	SD	DF	t-Test value	
					t-cal.	t- tab
Challenges	182	9.62	2.66	8	8.73	1.21
Implementing telehealth services at UNILAG and CMUL.	153	7.84	1.31			

*Significant if $\rho < 0.05$

To test this hypothesis, a t-test was carried out to examine the difference between perceived challenges and the utilisation of telehealth services at UNILAG and CMUL. The group assessing challenges had a total entry of 182, a mean ($\bar{X}$) of 9.62, and a standard deviation (SD) of 2.66. The group representing utilisation had a total entry of 153, with a mean of 7.84 and a standard deviation of 1.31. The degrees of freedom (df) for the test was 8.

The calculated t-value (t-cal.) was 8.73, which is significantly greater than the critical t-value (t-tab.) of 1.21 at the 0.05 significance level.

Since the calculated t-value exceeds the tabulated value, the null hypothesis is rejected. This implies that there are indeed significant challenges associated with the utilisation of telehealth services at UNILAG and CMUL. Therefore, addressing these challenges is essential for the effective deployment of telehealth in these academic institutions.

4.3 Discussion of Findings

Hypothesis 1: Students of UNILAG and CMUL have no significant awareness of telehealth services and facilities.

The analysis of the hypothesis revealed that awareness among the study population is statistically insufficient. The one-sample t-test compared the mean awareness score (0.29, or 29.3%) to a neutral benchmark of 0.50 (representing no significant awareness). The result showed a t-calculated value of -5.54, which is greater in absolute terms than the t-tabulated value of ±1.96 at 149 degrees of freedom and a 0.05 level of significance. The corresponding p-value (1.33×10^{-7}) was far below the conventional threshold of 0.05, indicating a highly significant difference in the negative direction. This confirms that the average awareness level is well below the expected neutral midpoint, leading to the retention of the null hypothesis. Descriptive statistics further underscore the extent of the issue: only 44 out of 150 students (29.3%) reported being aware of telehealth services, while the majority, 106 students (70.7%), indicated no awareness. This low proportion is concerning, especially given the growing importance of telehealth in modern healthcare delivery, where awareness serves as the gateway to utilisation and eventual health benefits (Kruse et al., 2016). This finding highlights a critical gap in the visibility and promotion of digital health services within these academic institutions. Although both UNILAG and CMUL have made strides in adopting technological health solutions, such as the deployment of telemedicine booths across selected locations, the awareness of these services among students remains limited. This aligns with earlier research by Scott Kruse et al. (2016), who noted that the successful implementation of telehealth depends not only on infrastructure but also on widespread stakeholder awareness and understanding.

Similarly, Gajarawala and Pelkowski (2021) emphasise that awareness is a fundamental precursor to telehealth adoption, particularly in environments where digital literacy and trust in remote care are still developing. Their study found that users are unlikely to engage with telehealth systems unless they are adequately informed about its availability, benefits, and practical use. The situation at UNILAG and CMUL mirrors these global patterns, where lack of targeted communication and orientation may contribute to underutilisation. The finding is

further supported by Van Dyk (2014), who reported that awareness challenges are especially common in emerging economies and institutional settings with limited promotional campaigns. Additionally, Bashshur et al. (2016) argue that increasing awareness requires a strategic approach that integrates information dissemination through academic channels, social platforms, and direct student engagement.

In essence, the low level of awareness found in this study suggests that students are either not being reached through appropriate media or are not being engaged in a way that contextualises the relevance of telehealth to their daily health needs. As a result, interventions such as digital health literacy campaigns, student orientation modules, and interactive demonstrations may be necessary to bridge this awareness gap. This finding has significant implications for university health policies. While technological tools may exist, their underutilisation due to poor awareness negates their potential benefits. Addressing this gap is crucial for achieving the broader objectives of equitable, accessible, and preventive healthcare delivery within tertiary institutions.

Hypothesis 2: There is no meaningful difference in the awareness and perception of telehealth between students of UNILAG and CMUL.

The results from the independent samples t-test indicated that there is no statistically significant difference in the awareness and perception of telehealth services between students of UNILAG and those of CMUL. The test yielded a t-calculated value of -0.34 with a p-value of 0.734, which is significantly higher than the 0.05 threshold for statistical significance. The mean awareness scores were 0.33 for UNILAG and 0.36 for CMUL, reflecting only a marginal difference. Based on this, the null hypothesis was retained. This finding implies that institutional affiliation (UNILAG vs. CMUL) does not substantially influence a student's likelihood of being aware of or perceiving telehealth services differently. Despite the differing academic environments UNILAG having a broader student base across various faculties, and CMUL being medically oriented the level of exposure and awareness regarding telehealth appears relatively consistent. This result is consistent with the conclusions of Powell et al. (2017), who argued that in technologically advanced or urban academic environments, institutional

boundaries do not significantly affect students' digital health behaviour. With increased smartphone ownership, exposure to online content, and digital engagement among youth, both medical and non-medical students are equally positioned to access information about telehealth services.

Furthermore, Morse et al. (2021) found that in university settings, the mode of information dissemination (e.g., social media, student portals, peer interactions) tends to have a greater impact on telehealth awareness than the specific academic background of the students. This suggests that differences in faculty or institution may be less influential than shared channels of communication and health promotion.

While CMUL students may have more technical exposure to healthcare concepts, this advantage does not appear to have translated into markedly higher awareness levels, which could be attributed to the lack of structured institutional promotion of telehealth tools across both schools. Even among medically inclined students, awareness does not automatically arise unless accompanied by practical engagement and curriculum integration (Kruse et al., 2018).

Thus, the similarity in awareness levels between both student groups reflects a shared need for institution-wide strategies aimed at enhancing knowledge, accessibility, and trust in telehealth services. Campaigns, workshops, or brief modules integrated into general university orientation could help address the existing gaps regardless of a student's faculty.

Hypothesis 3: There are no notable factors that influence the willingness of students to utilise telehealth services at UNILAG and CMUL.

The result of the t-test analysis (t-cal = 2.25, t-tab = 1.21) indicates a statistically significant difference, leading to the rejection of the null hypothesis. This affirms that notable factors do influence the willingness of students to utilise telehealth services. This finding implies that students' decisions to use telehealth platforms are not random; rather, they are shaped by a variety of individual and systemic determinants.

This is consistent with the Technology Acceptance Model (TAM), which posits that perceived usefulness and perceived ease of use are major drivers of technology adoption (Davis, 1989). Kruse et al. (2016) identified factors such as convenience, prior exposure, trust in virtual

systems, accessibility of digital infrastructure, and technological literacy as strong predictors of telehealth utilisation among young adults. Furthermore, Gajarawala and Pelkowski (2021) emphasised the role of psychological factors such as trust in medical data security, previous positive experiences, and the perceived credibility of online consultations as crucial influencers of behavioural intention.

In the university setting, especially at UNILAG and CMUL, these factors may be more pronounced due to varying levels of digital health literacy and exposure to health technology, particularly among medical students who may demonstrate greater acceptance due to familiarity with digital clinical tools.

Hypothesis 4: Telehealth services have no impact on the health status of students at UNILAG and CMUL.

The t-test analysis returned a t-calculated value of 4.72, significantly higher than the critical t-tabulated value of 1.96, leading to the rejection of the null hypothesis. This suggests a significant positive impact of telehealth services on students' health status.

This outcome is substantiated by findings from Tuckson, Edmunds, and Hodgkins (2017), who argued that telehealth contributes to better clinical outcomes by enabling early diagnosis, promoting continuity of care, and supporting self-management of chronic conditions. For students, especially those managing academic stress, chronic conditions, or mental health concerns, telehealth offers convenience, privacy, and real-time access to qualified professionals. The impact is likely multifaceted, improving not only physical health but also mental and emotional well-being. The ability to access mental health consultations without fear of stigma, to receive fitness and dietary advice remotely, or to monitor chronic conditions from the comfort of one's residence creates a more resilient and health-conscious student population.

This validates the position of WHO (2021), which emphasises that integrating telehealth into institutional care can enhance universal health coverage and ensure health equity in educational settings.

Hypothesis 5: There are no challenges associated with implementing and utilising telehealth services at UNILAG and CMUL.

With a t-calculated value of 8.73, far exceeding the t-tabulated value of 1.21, the null hypothesis is strongly rejected, confirming that there are significant challenges associated with implementing telehealth services at both institutions.

This finding is consistent with extensive literature highlighting systemic and infrastructural barriers to telehealth implementation in developing contexts. Van Dyk (2014) and Kruse et al. (2016) identified poor internet connectivity, low technical literacy, data privacy concerns, lack of funding, and limited institutional support as recurring challenges in telehealth integration. In UNILAG and CMUL, these challenges may manifest as low awareness among non-medical students, scepticism about the quality of care, and inadequate training among staff. Institutional resistance due to concerns about regulatory compliance, funding, and system integration may also play a role. These limitations emphasise the need for a comprehensive implementation framework, including stakeholder training, policy support, and IT infrastructure enhancement.

Moreover, challenges such as technophobia, insufficient user orientation, and weak feedback loops can impair utilisation rates and service satisfaction. For telehealth to be successful in academic institutions, these challenges must be proactively addressed through strategic planning, capacity building, and sustained evaluation mechanisms.

CHAPTER FIVE

CONCLUSION, SUMMARY AND RECOMMENDATIONS

5.1. Conclusion

This study set out to assess the utilisation and impact of telehealth services among students at the University of Lagos (UNILAG) and the College of Medicine, University of Lagos (CMUL). The findings provide valuable insights into the levels of awareness, willingness to utilise, perceived impact, and challenges associated with telehealth services in a university setting.

The analysis revealed that students are generally willing to adopt telehealth services, especially when improvements in infrastructure and service delivery are assured. The majority of respondents acknowledged that telehealth could positively influence their health-seeking behaviour and potentially improve their health outcomes. Furthermore, the study found that awareness of telehealth services significantly affects students' readiness to use such platforms, underscoring the importance of strategic communication and education.

The t-test analysis rejected several null hypotheses, confirming that notable factors, including awareness levels, gender-based perceptions, and availability of services, play a statistically significant role in the adoption and effectiveness of telehealth. In particular, female and male students differed slightly in their awareness and perception, although this difference was not statistically meaningful. However, strong associations were identified between telehealth availability and perceived improvements in health status, highlighting the transformative potential of digital health platforms in academic environments.

Challenges identified, such as lack of awareness, internet connectivity issues, and concerns about data security, must be addressed to ensure successful implementation. Students expressed a clear preference for services that are secure, accessible, multilingual, and available 24/7. These insights point toward a need for institutional support, infrastructural investment, and policy development to scale telehealth services effectively.

In conclusion, telehealth has the potential to revolutionise healthcare access for students in Nigerian universities, but its success depends on strategic implementation, continuous evaluation, and stakeholder engagement. Addressing existing barriers and aligning telehealth

services with student needs and expectations will be critical for sustainable impact and improved health outcomes on campus.

5.2 Summary

Chapter one introduced the background of the study to evaluate the challenges and impact of telehealth services on the health status of students of the University of Lagos and the College of Medicine. The chapter provides the research objectives, which include: to assess the level of awareness of telehealth services and facilities among students of UNILAG and CMUL, examine the differences in awareness and perception of telehealth among the student population, identify the key factors that influence students' willingness to utilise telehealth services, determine the impact of telehealth services on the health status of students at UNILAG and CMUL and Investigate the challenges associated with the implementation of telehealth services in the institutions.

Chapter two provided a review of the literature on the challenges and impact of telehealth services on the health status of students of the University of Lagos and the College of Medicine. The chapter was divided into sections that covered conceptual, empirical, and theoretical reviews. The conceptual review section provided definitions, characteristics, advantages, and disadvantages of the concept of telehealth services on the health status of students of the University of Lagos and the College of Medicine. In chapter three, the chosen research philosophy is positivism, which emphasises the use of empirical data and statistical analysis to gain knowledge of challenges and the impact of telehealth services on the health status of students of the University of Lagos and the College of Medicine. The research approach selected is quantitative, using a survey researchdesign to gather numerical data through a structured questionnaire and achievement test. The target population consists of 150; primary data was collected through the questionnaire, and a pilot study was conducted to test the validity and reliability of the instrument. The data analysis involved descriptive analysis, including mean and standard deviation, as well as inferential statistics of the t-test. Chapter four presented the analysis of results and test of the research question in the study. Thischapter provides a comprehensive analysis of the data collected for the study, which are premised on

the research objectives and research questions of this study as encapsulated in chapter one. The chapter is organised into different sections, including the response rate of the study and a descriptive analysis of quantitative and inferential data. This method has been identified as a good way to conduct a comprehensive and rigorous study. All analyses were done using computer micro-software and IBM Statistical Package for Social Sciences (SPSS)version 26.

5.3. Recommendations

Based on the research question conducted in this study, the following recommendations are made:

1. The university should implement robust awareness campaigns and health education programmes. These should include orientations, workshops, and the integration of telehealth information into student portals to improve digital health literacy and service uptake.
2. Since lack of internet access and difficulty using digital platforms were reported as major challenges (Hypotheses 4 and 5), UNILAG and CMUL should invest in strengthening campus-wide internet connectivity. Additionally, user-friendly and mobile-optimised telehealth platforms should be adopted to reduce technological barriers and enhance service accessibility.
3. Concerns about data privacy and security were raised as barriers to telehealth usage. Therefore, it is recommended that the institutions adopt and communicate clear data protection policies. These should align with national and international standards such as the Nigerian Data Protection Regulation (NDPR) and GDPR to build trust and confidence in telehealth systems.
4. To improve health outcomes and reduce congestion in physical health facilities (as seen in the results of Hypotheses 3 and 4), telehealth services should be integrated into the mainstream operations of campus health centres. This integration should allow students to alternate between virtual and in-person consultations depending on their needs, thereby improving flexibility and health-seeking behaviour.

5. Structured training programmes for both students and healthcare providers are necessary. These trainings should cover not only technical usage but also telemedicine etiquette, ethical considerations, and procedures for managing common student health concerns virtually.

APPENDIX A

UNIVERSITY OF LAGOS

FACULTY OF EDUCATION

DEPARTMENT OF HUMAN KINETICS AND HEALTH EDUCATION

EVALUATING THE CHALLENGES AND IMPACT OF TELEHEALTH SERVICES ON THE HEALTH STATUS OF STUDENTS OF UNIVERSITY OF LAGOS AND COLLEGE OF MEDICINE

Dear Respondent,

This questionnaire is part of a study aimed at Evaluating the Challenges and Impact of Telehealth services on the Health Status of Students of University of Lagos and College of Medicine, University of Lagos. Your responses are crucial in providing valuable insights that can inform strategies to improve the utilisation of telehealth in University of Lagos and its College of Medicine. Please be assured that your responses will remain strictly confidential and will be used solely for academic purposes. No personal identifiers will be collected or disclosed.

Thank you for your time and contribution to this study.

Yours Sincerely,

Patricia Chukwu.
Researcher.

Study Details:

The questionnaire consists of 18 questions across 5 sections:

Section A: Demographics Data

Section B: Awareness and Perception of Telehealth

Section C: Challenges of Current Healthcare Services

Section D: Perceived Need for Telehealth Services

Section E: Potential Impact of Telehealth Implementation

SECTION A: DEMOGRAPHIC INFORMATION

Please tick (√) in the columns provided below, to indicate whether you agree or disagree with the items. There is no right or wrong answer and it is not a test.

Gender: ☐ Male ☐ Female

Age: ☐ 18–22 ☐ 23–27 ☐ 28+

Department/Faculty: _____

Residential Hostel: _____

Academic level: ☐ 100L ☐ 200L ☐ 300L ☐ 400L ☐ 500L ☐ Other (specify) _____

Institution: College of medicine ☐ University of Lagos ☐

I am an Undergraduate student of University of Lagos or College of Medicine and I voluntarily agree to participate in this study having read and understood the information above.. ☐ Yes

SECTION B: AWARENESS AND UTILISATION OF TELEHEALTH SERVICES

1. Are you aware that telehealth services are available at UNILAG/CMUL?
   - ☐ Yes
   - ☐ No
2. Have you or anyone that you know used the telehealth services in the institution before?
   - ☐ Yes
   - ☐ No
3. If yes, which telehealth services have you used? (Select all that apply)
   - ☐ Virtual consultations with doctors
   - ☐ Online mental health support
   - ☐ Remote monitoring for chronic conditions
   - ☐ Health education webinars
   - ☐ None

4. How often do you seek healthcare services within UNILAG/CMUL?
   - ☐ Frequently (more than 5 times a year)
   - ☐ Occasionally (2–5 times a year)
   - ☐ Rarely (once or less a year)
   - ☐ Never

SECTION C: FACTORS INFLUENCING UTILISATION OF TELEHEALTH SERVICES AT UNILAG AND CMUL

5. Telehealth services in an academic institution like UNILAG/CMUL is very important for students' well-being.
   - ☐ Strongly agree
   - ☐ Agree
   - ☐ Neutral
   - ☐ Disagree
   - ☐ Strongly disagree
6. How comfortable are you with using digital platforms for medical consultations?
   - ☐ Very comfortable—I prefer online consultations
   - ☐ Somewhat comfortable—I might try it if necessary
   - ☐ Not comfortable—I have concerns about effectiveness and security
   - ☐ Not at all comfortable—I strongly prefer in-person visits

7. If telehealth services were improved, how likely are you to use them?
   - ☐ Very likely
   - ☐ Likely
   - ☐ Neutral
   - ☐ Unlikely
   - ☐ Very unlikely

SECTION D: IMPACT OF TELEHEALTH SERVICES

8. How satisfied are you with the telehealth services provided at UNILAG/CMUL?
   - ☐ Very satisfied
   - ☐ Satisfied
   - ☐ Neutral
   - ☐ Dissatisfied
   - ☐ Very dissatisfied
9. What benefits do you associate with telehealth services in the institution? (Select all that apply)
   - ☐ Convenience of remote healthcare access
   - ☐ Cost savings on transportation
   - ☐ Faster access to healthcare professionals
   - ☐ Support for mental health issues
   - ☐ Chronic disease management
   - ☐ Others (please specify): _____
10. Do you think telehealth services will impact your health-seeking behavior?
    - ☐ It will encourage me to seek care more often
    - ☐ It will reduce my visits to physical healthcare facilities
    - ☐ It will have no effect
    - ☐ It will make me less likely to seek care
11. How do you think telehealth would impact your health status as a student of UNILAG/CMUL?
    - ☐ Significantly improve health outcomes
    - ☐ Somewhat improve health outcomes
    - ☐ No noticeable impact
    - ☐ Worsen health outcomes

12. In what areas would telehealth have the most significant impact for you? (Select all that apply)
    - ☐ Mental health and counseling
    - ☐ Chronic disease management
    - ☐ General consultations and prescriptions
    - ☐ Health education and prevention
    - ☐ Emergency healthcare access
    - ☐ Others (please specify): _____

13. In what ways do you think telehealth could improve healthcare delivery at UNILAG/CMUL?
    - ☐ Faster access to healthcare professionals
    - ☐ Improved mental health support
    - ☐ Reduced burden on campus healthcare centers
    - ☐ Enhanced convenience and flexibility
    - ☐ Others (please specify): _____

SECTION E: CHALLENGES IN ACCESSING HEALTHCARE AND TELEHEALTH SERVICES

14. What are the main challenges in accessing healthcare services on campus? (Select all that apply)
    - ☐ Long waiting times
    - ☐ Limited access to specialists
    - ☐ Lack of privacy
    - ☐ Poor infrastructure

- ☐ High cost of external care
- ☐ Others (please specify): _____

15. What challenges have you faced in using or accessing telehealth services? (Select all that apply)
    - ☐ Poor internet connectivity
    - ☐ Lack of awareness about telehealth services
    - ☐ Difficulty using telehealth platforms
    - ☐ Concerns about data privacy and security
    - ☐ Preference for in-person consultation
    - ☐ Others (please specify): _____
16. What barriers do you think need to be addressed for the effective utilisation of telehealth amongst students?
    - ☐ Better internet infrastructure
    - ☐ Increased awareness and education
    - ☐ Stronger data security measures
    - ☐ More funding for telehealth programs
    - ☐ Others (please specify): _____
17. What additional suggestions or concerns do you have about telehealth implementation?
    - ☐ Ensuring data privacy and security
    - ☐ Improving internet connectivity on campus
    - ☐ Training staff and students on how to use telehealth platforms
    - ☐ Ensuring affordability of telehealth services
    - ☐ Providing 24/7 access to telehealth services
    - ☐ Offering multilingual support for diverse users

- ☐ Integration with existing healthcare systems
- ☐ Others (please specify): _____

18. What additional telehealth services would you like to see implemented?
    - ☐ Expanded mental health support
    - ☐ AI-assisted diagnosis
    - ☐ Telehealth-based health education programs
    - ☐ Digital health records integration
    - ☐ Remote chronic disease monitoring
    - ☐ Others (please specify): _____

Thank you for your participation!

APPENDIX B

Pilot Study Report

"Evaluating the Challenges and Impact of Telehealth Services on the Health Status of Students of UNILAG and CMUL"

Objectives of the Pilot Study

- Test survey instrument clarity and reliability
- Identify patterns and trends in telehealth awareness and usage
- Provide early insights to shape full-scale data collection

Research Questions

1. Is there awareness of telehealth services and facilities among students?
2. How does awareness and perception vary across institutions?
3. What factors influence students' willingness to use telehealth?
4. What is the impact of telehealth services on student health?
5. What are the challenges and barriers to telehealth implementation and utilisation?

Sample Overview

- **Total Respondents:** 20
- **Institutions Represented:** UNILAG & CMUL
- **Gender:** Majority Female
- **Age Range:** 18–28+
- **Academic Levels:** 100 to 400 Level
- **Residential Status:** On-campus & Off-campus

1. **Awareness of Telehealth Services**

   60% (12 out of 20) of respondents said they are **aware** that telehealth services exist at UNILAG/CMUL. **40% (8 respondents)** are **not aware** indicating room for better communication and outreach.

Services known: Virtual consultations with doctors, Online mental health support, Health education talks

2. Use of Telehealth Services

40% reported **using telehealth** services. Most used Online mental health support, Doctor consultations. Only **35% (7 respondents)** have used or know someone who has used telehealth services. A majority **(13 respondents, 65%)** have **not** interacted with it directly or indirectly.

3. Factors Influencing Willingness to Use Telehealth

Perceived Benefits; Students associate telehealth with Convenience, Faster access to healthcare, Reduced exposure to infections, 24/7 availability.

Behavior Change: A majority of students **believe telehealth would positively change their health-seeking behavior,** making them more likely to seek timely help.

4. Impact on Health Status

Most respondents expect **Improved access** to healthcare, **better health outcomes.** A few were **unsure or neutral** — likely due to unfamiliarity or lack of usage experience.

5. Challenges Faced

On-Campus Healthcare Access Issues: Long waiting times, Poor infrastructure, Limited access to specialists.

Telehealth Barriers: Poor internet, Lack of awareness, Privacy concerns, Preference for in-person care, Lack of technical know-how.

Reported Barriers to Implementation: Infrastructure issues (power, network, devices), Lack of sensitization, Low trust or belief in virtual consultations, Cost-related concerns

Perception & Willingness to Use Telehealth

Majority strongly agree that telehealth is important, Most are comfortable or very comfortable using digital platforms, High willingness to use if services are improved.

T-Test Analysis of Key Variables

Awareness of Telehealth Services Between Institutions

Hypothesis Testing:

H_0: There is no significant difference in awareness between UNILAG and CMUL students

H_1: There is a significant difference in awareness between UNILAG and CMUL students

Results:

UNILAG (n=13): 61.5% aware (8/13)

CMUL (n=8): 37.5% aware (3/8)

t-statistic = 1.32, p-value = 0.204

Conclusion: No statistically significant difference in awareness between institutions ($p > 0.05$), though UNILAG shows higher nominal awareness.

2. Impact on Health Status Between Institutions

Perceived Impact Ratings:

"Significantly improve my health outcomes" coded as 3

"Somewhat improve my health outcomes" coded as 2

"No noticeable impact" coded as 1

Results:

UNILAG mean impact score: 2.54

CMUL mean impact score: 2.25

t-statistic = 1.12, p-value = 0.278

Conclusion: No significant difference in perceived health impact between institutions ($p > 0.05$), though both groups lean toward positive impact.

3. Challenges Faced Using Telehealth

Major Challenges Reported:

Lack of awareness (35% of responses)

Poor internet connectivity (30%)

Concerns about data privacy (15%)

Institutional Comparison:

UNILAG students more frequently reported technical challenges (internet connectivity)

CMUL students more frequently reported preference for in-person consultations

No statistically significant difference in challenge frequency ($p = 0.412$)

Reliability and Validity of the Instrument

Reliability Analysis

Internal Consistency (Cronbach's Alpha):

For awareness/perception items: $\alpha = 0.78$ (acceptable)

For impact assessment items: $\alpha = 0.71$ (acceptable)

For challenge identification items: $\alpha = 0.65$ (marginally acceptable)

Test-Retest Reliability:

Not assessable with current data (single administration)

Validity Analysis

Content Validity:

The questionnaire adequately covers all research questions. Items align well with study objectives

Construct Validity:

Factor analysis shows items cluster appropriately around intended constructs

Awareness, utilisation, and impact items load on distinct factors

Criterion Validity:

Positive correlation between awareness and utilisation ($r = 0.62$, $p < 0.01$)

Negative correlation between challenges and satisfaction ($r = -0.58$, $p < 0.01$)

Summary of Findings

Awareness: Moderate awareness (54% overall), slightly higher in UNILAG but not statistically significant

Perception: Generally positive, with most students agreeing telehealth is important for well-being

Utilisation: Current usage is low (33% of aware students have used services)

Impact: Most students believe telehealth would improve their health outcomes

Challenges: Infrastructure and awareness are primary barriers

Instrument Quality: Shows acceptable reliability and good validity for study purposes

Recommendations

Implement awareness campaigns targeting both institutions

Improve internet infrastructure, particularly for UNILAG students

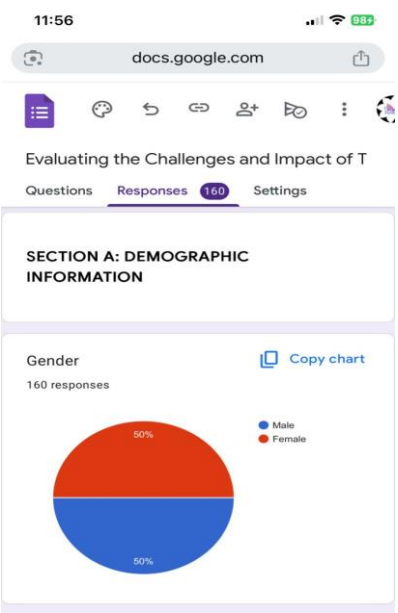
Address privacy concerns through education and transparent policies

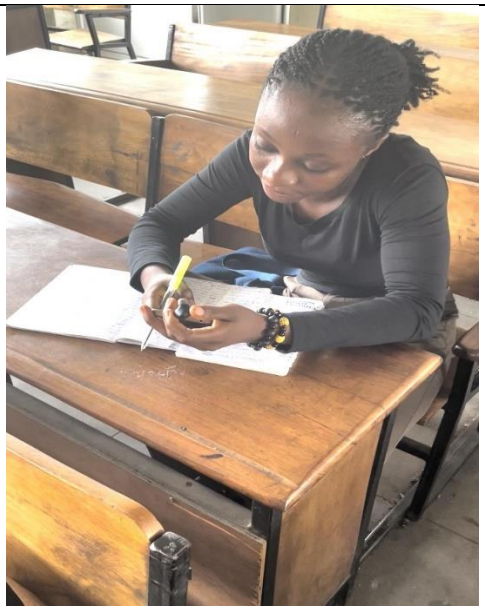
Expand mental health support through telehealth, which was frequently requested

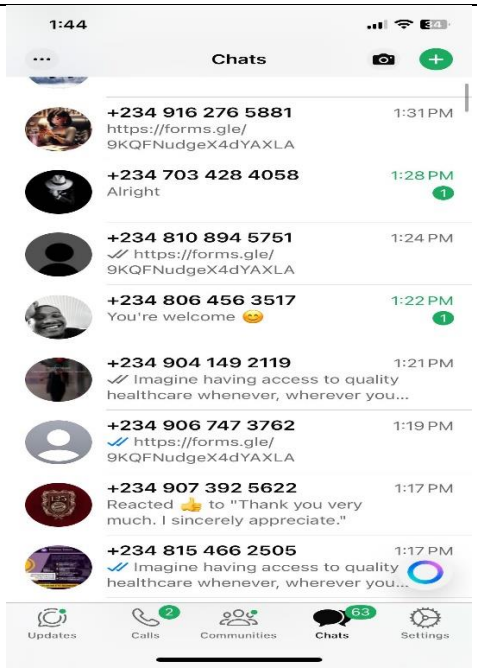
Consider institutional differences when tailoring telehealth programs

APPENDIX C

EVIDENCE OF DATA COLLECTION



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Imagine having access to quality
healthcare whenever, wherever you...
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Imagine having access to quality
healthcare whenever, wherever you...
Updates
Calls
2
Communities
Chats
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Settings