INTERNET SERVICES AND USAGE AMONG MEDICAL PERSONNEL OF ABUJA GENERAL HOSPITALS IN NIGERIA

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Abstract

The introduction of the internet into the healthcare system has expanded access to health information, making it easier for healthcare providers, patients, and society members to access healthcare services. This study aims to investigate the internet usage among medical personnel in Abuja general hospitals, focusing on the extent of their professional internet usage and the types of services they utilize. The research utilizes a mixed methods approach, employing surveys and interviews as research methods. A sample size of 322 out of a total population of 2056 was selected. The quantitative data reveals that 72.3% of respondents use the internet daily for work, a finding supported by qualitative data indicating that a majority of respondents use the internet daily for work purposes. Additionally, 63% of respondents use internet services to search and share general health information, professional information, drugs, and medications, a result also validated by qualitative data showing that most respondents use the internet for these purposes. Furthermore, 43.7% of respondents use Google Scholar for information search, while qualitative results indicate that the majority prefer Medscape. Moreover, 32.3% use WhatsApp as their primary social media platform for information sharing, a finding consistent with qualitative data indicating that most respondents use WhatsApp for work-related communication. The study concludes that the majority of medical personnel in Abuja general hospitals rely on internet services for accessing and sharing health information for patient care. As a recommendation, the study suggests that hospitals' management and related organizations should regularly conduct workshops to educate medical personnel on utilizing internet services effectively for professional purposes.

Key Words: Internet services, usage, medical personnel, hospitals.

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Introduction

In recent years, the integration of internet services into various sectors has revolutionized information access, communication, and service delivery. In the medical field, the introduction of internet technologies has had a profound impact by facilitating the rapid dissemination of medical knowledge, improving patient care through telemedicine, and enhancing administrative efficiency. According to Hurling, Catt, and Boni (2007), the evolution of the internet has established patient-controlled health records accessible by healthcare providers through the World-Wide Web. It is increasingly being used for healthcare delivery, health promotion, and health education. The internet is also a popular source of health information for healthcare providers and consumers. It provides healthcare practitioners with exceptional access to a huge volume of high-quality, current, and relevant healthcare information, as well as the potential to deliver

universal access to up-to-date healthcare information (Ajuwon, 2015).

However, the extent and patterns of internet use by healthcare workers in specific regions such as Abuja, Nigeria remain poorly understood. The Federal Capital Territory (FCT) is home to several general hospitals that serve as important hubs in the country's healthcare system. These hospitals cater to a diverse group of patients with varying healthcare needs, ranging from regular consultations to emergency services. Therefore, the effective utilization of Internet services by medical personnel in these facilities has the potential to streamline healthcare delivery, enhance diagnostic accuracy, and furnish healthcare providers with current medical information. Studies on internet services and their usage by medical personnel have been conducted over the years, as highlighted in studies by Dahiru (2018), Masters (2008), and Powell, Darvell, and Gray (2003). However, the majority of these studies were carried out in international settings, including research by Ahmed, Yousif and Abdalla (2008); Campbell, Evans, Pumper and Moreno (2016); and Podichetty, Booher, Whitefield, and Biscup (2006). This geographical gap in research findings compared to studies conducted in Nigeria makes it challenging to generalize the findings to the local context. Furthermore, studies conducted on the use of internet services and their usage by medical personnel in Nigeria by Oweghoro, Adeleke, Mshelia, Ogundiran, Yusuf, Adeoti (2015); and Daniel and Oyetunde (2013) limit the scope of literature on such research, as most of these studies were conducted in either a single hospital in a state, a particular region of the country, or even privately owned hospitals, among which general hospitals in the Federal Capital Territory were not studied. Hence, creating a gap in the literature.

Thus, this study examines how medical personnel use internet services for professional purposes, specifically in Abuja general hospitals, aiming to bridge geographical and literature gaps identified in previous studies. To accomplish this goal, the following research questions have been posed:

1. To what extent do medical personnel use the internet for professional purposes at the FCT general hospitals?
2. What are the different types of internet services used by medical personnel for professional purposes at the FCT general hospitals?

Literature Review

Koller, Griitter, Peltenburg, Fischer, and Steurer, (2001) conducted a study on the use of the internet by medical doctors in Switzerland. They investigated the utilization of the internet by primary care physicians for medical purposes during their daily practice and also sought to understand the reasons for use or non-use of the internet. The method used in this research was a cross-sectional survey among primary care physicians in German-speaking Switzerland, and a purpose-designed questionnaire was randomly mailed to 2009 participants. The results show that the main areas for using the internet during consultations were the retrieval of information on drugs, patient-specific information, vaccination recommendations, and advice to persons traveling to foreign countries. Additionally, the majority of the respondents would use “portals” as a possible solution for handling information retrieval and quality assessment. The researchers suggested that electronic information systems needed to be tailored to the needs of primary care physicians.

A study on knowledge and utilization of information technology among healthcare professionals and students in Ile-Ife was conducted by Bello, Arogundade, Sanusi, Ezeoma, Abioye-Kuteyi, and Akinsola in 2004. The study assessed the knowledge and utilization pattern of information technology among healthcare professionals and medical students in a university teaching hospital in Nigeria. Survey was used as the method of research with a self-structured pre-tested questionnaire that was administered randomly among 180 healthcare professionals and medical students. The study revealed that computer possession and utilization among healthcare professionals and students in a major university teaching hospital in Nigeria were low, which was consistent with the findings of previous researches (Ajuwon, 2015; Ogunyede & Oyibo, 2003; Odusanya & Bamgbala, 2002). The researchers recommended that further research should focus on designing and evaluating computer and IT training for students and staff in developing countries.

Similarly, Adomi et al., (2011) conducted a study on the use of the internet by medical practitioners in private hospitals in Warri. The study aimed to explore how medical practitioners utilize the internet on a regular basis, the specific resources they access, and the benefits derived from internet usage in their practice. Employing a descriptive survey method, the researchers utilized questionnaires to collect data from a sample of 137 medical practitioners across 30

private hospitals. The findings of the study revealed that a majority of medical practitioners independently used the internet regularly. The study also identified resources such as MedLine, journals, and PubMed as the most frequently accessed internet resources by medical practitioners. Furthermore, the researchers noted that internet usage facilitated improved patient care and allowed practitioners to stay current, despite challenges such as the high cost of internet access and limited internet availability. As a result, the study recommended that hospital management should provide medical practitioners with internet facilities to ensure access to the latest and most accurate information for effective service delivery.

Also, Shabi et al., (2011) conducted a study on physicians' utilization of internet medical databases at tertiary health institutions in Osun state. The study aimed to determine the extent, purpose, determinants, and impact of the utilization of internet medical databases among the respondents. The researchers conducted a descriptive cross-sectional survey of 540 randomly selected physicians at two tertiary institutions in Osun state. Results of the study showed that the majority of respondents (53.8%) used internet resources at least once every 2 weeks, mainly for routine patient care and research purposes. The study also found that respondents frequently used PubMed, HINARI, and free medical journals as online databases/archives. The study concluded that the ease of finding needed information and the availability of evidence-based resources were the major determinants of the databases utilized. Therefore, the researchers recommended that all medical facilities, including consulting rooms, should be equipped with internet facilities, and medical informatics, including the efficient use of internet medical databases, should continue to be a prominent feature of both undergraduate and postgraduate medical curricula.
Shcherbakova and Shepherd (2014) conducted an empirical study on community pharmacists, internet, and social media.

The study explored the extent to which independent community pharmacists in Texas use text messaging, email, Facebook, Twitter, and/or other information technology for professional communication with patients and healthcare professionals, their perceptions towards such usage, and the extent to which pharmacists develop and employ their pharmacy websites to provide drug information and patient care services. The research employed a survey method, with questionnaires randomly mailed to 1196 independent community pharmacists in Texas in 2012. The findings showed that internet access was available at their pharmacies and they were familiar with social media. Additionally, the results indicated that pharmacists use email, text messages, and Facebook to communicate with other health professionals, and they have a positive perception towards colleagues who communicate with patients using electronic tools for information related to drug therapy. The researchers recommended further studies to be conducted in other states and nationwide to contribute to a better understanding of the use of electronic communication, the internet, and social media in the daily professional activities of independent pharmacists.

Adeleke et al., (2015) conducted a study on computer and internet use among tertiary healthcare providers and trainees in a Nigerian Public hospital. The research aimed to assess the usage rate of computer and internet technologies for patient care among healthcare professionals in Nigeria. The research utilized a survey method with questionnaires as the instrument for data collection. The results indicated that the majority of participants used cell phones to access the internet, while only a few accessed the internet through the local services provided by the hospital management. The study also found that respondents utilized various channels such as Google Scholar and social media (Facebook) for purposes like seeking updated information on professional issues, accessing continuing professional education for capacity building, and academic information. Barriers to computer and internet use, such as time constraints, lack of access to computers, and insufficient computing skills, were also identified as key findings of the study. The researchers recommended that healthcare facilities organize intensive and specific ICT training for their employees and ensure necessary infrastructures are available to support the implementation of such initiatives.

Emmanuel and Dan-Muhammadu (2017) conducted a study on the acceptance and rejection of the internet for health information among private health professionals in Anyigba. The study evaluates how medical professionals in private hospitals in Anyigba, Kogi state, integrate the use of the internet into their professional practice. The study, conducted within the framework of the Technology Acceptance Model (TAM), employed both qualitative and quantitative methods using questionnaires and interview schedules respectively to identify factors that precipitate both acceptance and rejection of the internet. The study found that 53% of medical

professionals prefer internet sources over journals/books and that health professionals use the internet mainly for professional updates, communication with patients, drugs/medication, monitoring trends of diseases, amongst others. The study recommends that health professionals should promote capacity building for both younger and older practitioners on how best to employ internet-based applications for medical practice.

A study on the use of internet facilities for health communication and information sharing in Ahmadu Bello University Teaching Hospital (ABUTH) was conducted by Dahiru (2018). The study examined the level of awareness and use of internet facilities for communication and information sharing among medical personnel in ABUTH, the internet facilities used by the medical personnel, their most preferred internet facilities for communication and information sharing amongst themselves and the challenges they encounter in the use of these internet facilities. The researcher used the tenets of Technology Acceptance Model (TAM) to discuss the research objectives. The study adopted descriptive survey method with questionnaire as the instrument and 200 medical personnel were randomly selected as the sample for the research. The findings of the study revealed that all the respondents were aware of the internet facilities and mostly used internet facilities such as emails, intranet, websites and Facebook for communication and information sharing for effective healthcare service delivery in the hospital. The research concludes that communication and information sharing is vital to the success of any organization and recommends that there should be sensitization on new and improved facilities for communication and information sharing.

Farsi (2021) conducted a study on the use of social media by healthcare providers to explore how social media has become an essential tool in the healthcare industry from the perspective of healthcare providers. The study conducted a literature review between March and April 2020, utilizing databases such as MEDLINE, PubMed, Google Scholar, and Web of Science to gather English-language medical studies published since 2007 that discussed various forms of social media use in healthcare. The research demonstrated that social media has diverse applications in modern healthcare, with healthcare providers utilizing it not only for patient care but also for personal development and stress relief.

Griffin et al., (2021) conducted research on e-professionalism and social media use among nurses and midwives in a Western Australian tertiary hospital. The research focused on how nurses and midwives utilize social media, their knowledge, attitudes, and information concerning e-professionalism, as well as the potential blurring of boundaries between personal and professional identities on social media. The researchers employed survey and content analysis as their research methods. A validated survey tool was adapted to the study's context, with Chi-square and Fisher's exact tests used for survey analysis. Results indicated that the majority of nurses and midwives use social media for professional purposes. The study concluded that nurses and midwives approach social media cautiously, despite being curious about its potential. It also suggested that educators and policy makers should support nurses and midwives in becoming proficient users of social media.

Hamamadeh, and Abu Iram (2022) conducted a study on the effects of internet and social media use on the work performance of physicians and nurses in workplaces in Palestine. The research assessed the beneficial and harmful effects of internet and social media application use in the workplace on the work performance of healthcare professionals. The research method employed was a cross-sectional survey using a self-reported questionnaire distributed to 409 participants. The results indicated that the majority of participants used more than two social media applications, with Facebook being the most popular, followed by whatsapp. The study found that internet and social media applications in the workplace had a strong positive effect on the participants in general. Additionally, it was revealed that most participants used the internet and social media applications for communication with colleagues, skills development, research, and interacting with patients. The researchers suggested that Palestinian healthcare professionals should be encouraged to utilize internet and social media applications to enhance health outcomes and build a professional network.

Methodology

This study employed a mixed research approach using both quantitative and qualitative methods. This decision was made because both methods are highly beneficial and work well together. Qualitative methods offer detailed and insightful explanations, while quantitative methods provide the necessary numerical data to test the research objectives (Edmonds & Kennedy, 2016). Surveys and in-depth interviews were conducted, utilizing questionnaires and interview schedules as the data collection instruments.

The study's population comprised 2,056 medical personnel (Hospital Management Board, 2021) from 14 general hospitals in the Federal Capital Territory (FCT), including Maitama District Hospital, Asokoro District Hospital, Abaji General Hospital, Rubochi General Hospital, Gwarinpa General Hospital, Bwari General Hospital, Kuje General Hospital, Wuse General Hospital, Karshi General Hospital, Kubwa General Hospital, Nyanya General Hospital, Karu Mental Rehabilitation Hospital, Kwali General Hospital, and Zuba Cottage Hospital.

The research employed nonprobability sampling using purposive sampling to select the sample size. Purposive sampling was used in selecting samples for both the survey and in-depth interviews. Six respondents from the two general hospitals were interviewed. Two general hospitals were chosen because in-depth interviews are detailed and can be conducted with a small number of participants. The sample size for this research was 322 medical personnel from four general hospitals purposively selected (Kuje General Hospital, Nyanya General Hospital, Asokoro District Hospital, and Maitama District Hospital). The sample size was determined using the Krejcie and Morgan (1970) sample size determination table. Data gathered in this research were analyzed using frequency tables. Relevant articles were identified, classified, and enumerated using percentages and frequency counts, with the results presented in tables. The analysis was conducted using the Statistical Package for Social Sciences (SPSS) to enhance data analysis and interpretation comprehensively. The data gathered from the interview session were used to validate the data from the questionnaire by interpreting each respondent's responses and comparing them with the questionnaire responses.

Data presentation and Analysis of Quantitative Data

A total of 322 copies of the questionnaire were distributed, and 300 were retrieved and deemed valid. The data is presented in tables, illustrating the frequencies and corresponding percentages.

Table1: Demographics of Respondents

Demographics	Frequen	Percentag
Gender:		
Male	110	36.7
Female	190	63.3
Total	300	100
Age group:		
2129	121	40.3
3039	80	26.7
4049	46	15.3
50 and above	53	17.7
Total	300	100
Professional status		
Consultants	21	7.0
Doctors	52	17.3
Nurses	97	32.3
Pharmacists	73	24.3
Lab. Technicians	25	8.3
Medical Records	22	7.3
Others	10	3.3
Total	300	100

Table one presents the demographics of the respondents based on gender, age, and professional status. The data reveals that 63.3% of the respondents were female, while 36.7% were male, possibly reflecting the increased participation of women in the medical field. Furthermore, the data shows that the highest number of respondents fell within the age range of 21-29, accounting for 40.3%, followed by 30-39 (26.7%), 50 and above (17.7%), and 40-49 (15.3%). The predominance of respondents aged 21-29 may be attributed to their involvement in duties, calls, residencies, or internships that necessitate their constant presence. Additionally, the data indicates that the majority of respondents were nurses (32.3%), followed by pharmacists (24.3%), doctors (17.3%), lab technicians (8.3%), medical records personnel (7.3%), consultants (7%), and others such as physiologists and dental therapists (3.3%). The pre-eminence of nurses among the respondents could be due to their presence in various units throughout the hospital.

Table 2: Frequency of use of Internet for professional purposes

	Frequen	Percentage
Daily	217	72.3
Weekly	40	13.3
Fortnightly	6	2.0
Rarely	8	2.7
Monthly	26	8.7
Never	2	0.7
As often as nee	1	0.3
Total	300	100

Table two illustrates the frequency of internet use among respondents for professional purposes. The data reveals that 72.3% of the participants use the internet daily for professional activities, while 13.3% utilize it on a weekly basis. Additionally, 8.7% access the internet monthly, 2.7% use it rarely, 2% do so fortnightly, 0.7% never use it, and 0.3% responded with 'as often as needed“. The high percentage of respondents (72.3%) using the internet daily may be attributed to its widespread accessibility and the benefits it offers in terms of facilitating communication and providing quick access to research information.

Table 3: Type of Information Sourced on the Internet for professional purposes

Categories	Frequency	Percentage
General health information and updates	69	23
Professional Updates		
Drugs and Medication	25	8.3
All of the Above	17	5.7
Total	189	63
	300	100

Table three displays the distribution of responses regarding the type of information accessed by respondents on the internet for professional purposes. The responses were categorized into general health information/updates, professional updates, and drugs and medication. The table shows that 63% of respondents search for general health information/updates, professional updates, and drugs and medication. However, 23% indicated that they search for health information/updates, 8.3% search for professional updates, while 5.7% search for information and updates on drugs and medication. The majority of 63% of respondents accessing general health information/updates, professional updates, and drugs and medication through the internet may be attributed to the convenience and accessibility of online resources for these tasks, saving time and effort.

Table 4: Other purposes medical personnel use internet services at work for

	Frequency	Percentage
Sharing information	36	12
Academic purpose	35	11.7
Notifying and updating colleagues o any information	24	8.6
Online consultation with patients	8	2.7
All of the above	112	37.3
Sharing of information & academic purpose	13	4.3
Sharing of information & notifying a updating colleagues on any information	7	2.3
Academic purpose & notifying and updating colleagues on any information	4	1.3
Notifying and updating colleagues o any information & online consultatio with patients	2	0.6
Sharing information, academic purpose & notifying and updating colleagues on any information	58	19.3
Academic purpose, notifying and updating colleagues on any information &online consultation	1	0.3
Total	300	100

Table four shows that 37.3% used the internet for sharing information, academic purpose, notification and updating of colleagues, as well as online consultation. However, 19.3% used it for sharing, notifying and updating colleagues on information and for academic purpose.

Table 5: Search engines used for obtaining professional and academic information

	Frequency	Percentage
HINARI	7	2.3
Medline/PubMed	64	21.3
AJOL	10	3.3
Google Scholar	131	43.7
All of the above	2	0.6
Others (MedScape, Safari, drugs.com, Emedicine)	25	8.3
HINARI & Medline/PubMed	3	1
HINARI & Google Scholar	1	0.3
Medline/PubMed & AJOL	4	1.3
Medline/PubMed & Google Scholar	49	16.3
AJOL & Google Scholar	2	0.7
HINARI, Medline/PubMed & Google Scholar	1	0.3
Medline/PubMed, & Google Scholar	1	0.3
Total	300	100

Respondents were asked about the different types of search engines/online databases they used to search for information. Table five reveals that 43.7% utilized Google Scholar, 21.3% referred to Medline/PubMed, 16.3% used Medline/PubMed again, and 8.3% opted for other databases such as Safari, MedScape, drugs.com, and E-medicine. Additionally, 3.3% of the respondents employed AJOL (African Journals Online), while 2.3% utilized HINARI. The prevalence of Google Scholar usage among the respondents may be attributed to its popularity, while Medline/PubMed's popularity as the second most used database could be due to its comprehensive coverage of medical information.

Table 6: Type of social media used for professional purpose

	Frequency	Percentage
Twitter (X)	25	8.3
WhatsApp	97	32.3
LinkedIn	18	6
Facebook	15	5
Telegram	13	4.3
All of the above	35	11.7
Others (YouTube, Pinterest, Instagram, Tiktok)	8	2.7
Twitter(X) & WhatsApp	6	2
Twitter(X) & LinkedIn	11	3.7
Twitter(x) & Telegram	12	4
WhatsApp & LinkedIn	12	4
WhatsApp & Facebook	14	4.7
WhatsApp & Telegram	14	4.7
Twitter (X), WhatsApp, & LinkedIn	3	1
Twitter(X), WhatsApp & Facebook	3	1
Twitter(X), WhatsApp & Telegram	10	3.3
WhatsApp, LinkedIn & Facebook	4	1.3
WhatsApp, LinkedIn & Telegram	1	0.3
WhatsApp, Facebook, & Telegram	5	1.7
Total	300	100

Table six indicates that 32.3% of the respondents use WhatsApp, 11.7% use twitter(X), WhatsApp, Facebook, LinkedIn, and Telegram, 2.7% use other social media such as YouTube, Pinterest, Instagram, TikTok. 4% use twitter and telegram, 4.7% use WhatsApp and

Facebook, 3.7% use twitter and LinkedIn, 4% WhatsApp and LinkedIn, 2.7% use twitter, WhatsApp and telegram, 1.7% use WhatsApp, Facebook and Telegram. Possible reason for WhatsApp being the most used social media by the respondents could be because WhatsApp provides users with easier options for communications such as voice chats, voice notes, video calls, group chats and calls, sending and receiving of large documents, and so on.

Table 7: Frequency of use of email for professional purpose

	Frequen	percentage
Daily	91	30.3
Weekly	43	14.3
Fortnigh	16	5.3
Monthly	36	12
Rarely	96	32
Never	18	6
Total	300	100

In table seven, the data presented shows that 32% of the respondents rarely use email for professional purposes, 30.3% use it daily, 14.3% use it weekly, 12% use it monthly, 6% indicated that they never use email for a professional purpose, and 5.3% use email fortnightly. Possible reasons for rarely using emails for a professional purpose here could be due to the presence of other applications/social media that are faster and easier to use than email.

Data presentation and Analysis of Qualitative Data

In-depth interview was conducted with representatives of some departments from two general hospitals where six respondents were available and interviewed. In this section, the data from the interview is presented using the thematic approach. The themes identified are as follows:

i. Frequency of internet use and types of internet services utilized for professional activities were examined.
ii. Types of information sourced and purpose of use of internet services for professional use.

The findings are presented thus:

Frequency of use of the internet and types of internet services used for professional purposes

Respondents were asked how often they use the internet for professional purposes and the majority indicated that they use the internet daily. Specifically, five out of the six respondents reported using the internet every day for professional activities. Respondent one mentioned, "I use the internet daily because I require it most of the time." similarly, respondents two, four, five, and six also stated that they use the internet every day. In contrast, respondent three stated, "I use the internet as needed, perhaps once or twice a month for updates or unfamiliar terminologies." this variation in frequency could be attributed to the increasing technological advancements in the medical field, necessitating daily internet usage.

Additionally, the majority of the respondents mentioned that they utilize WhatsApp as a social media platform for professional purposes. Specifically, respondent one stated, "we use WhatsApp mostly for sharing information." respondents two, three, and six also expressed, "we use WhatsApp to notify colleagues of any announcements or meetings through WhatsApp groups." similarly, respondents four and five noted, "we use WhatsApp mostly since it accommodates larger numbers in terms of groups."

Types of information Sourced and Purpose of use of Internet Services for Professional Purposes

Data collected from the respondents regarding the types of information they sourced and the purposes for which they used the internet for professional activities revealed that they mainly sought general health information and updates on medical conditions or diagnoses online. The respondents utilized internet services for sharing work-related information. For instance, respondent one mentioned, "I search for updates on the meanings of certain medical terms, new diseases or viruses, and we use the internet to share patients' information with doctors after assessing their vital signs. We also exchange work-related information such as meetings and conferences." respondent three stated, "I search for information on cases that require further understanding, and it is helpful when I use it to prepare a presentation on a case in the unit or for discussions on certain diseases." respondent four explained, "I look up updates on diseases, vaccinations, and sometimes medications for patients. Since the internet provides almost everything you need, I use it for discussions on viruses or diseases with colleagues, and even invite colleagues from other hospitals to join in on complex surgeries." similarly, respondent five mentioned, "we search for treatment protocols for specific illnesses and clinical findings, and also use it for sharing information on various platforms, organizing meetings and conferences." respondent six shared, "I seek updates on current practices and information on current trends in the field. I also find clarifications on dosages, drug interactions, and other related queries.

Additionally, we use the internet to share information or updates on new trends, procedures, and diseases." however, respondent two noted, "here, we only search for patients' information to assign them to the appropriate unit, and we use the internet to obtain approvals from organizations like the National Health Insurance Authority (NHIA) and Health Maintenance Organization (HMO)." overall, the majority of respondents (5 out of 6) reported seeking general health information and using internet services for sharing information.

Discussion of findings

Research question one aims to determine the extent of internet service usage for professional purposes. The data collected indicates that a majority of medical personnel utilize the internet for professional reasons. This is supported by Table 2, revealing that 72.3% of medical personnel access the internet daily for professional purposes. These findings align with a study by McGowan et al., (2012) which examined factors influencing physicians' adoption and meaningful use of social media to share medical information. The study found that physicians engage with social media daily and regularly contribute new information through these platforms. This is further corroborated by interview responses, with five participants stating they use the internet daily. However, these results differ from those of Oriogu *et al.,* (2017) regarding internet health information resources and seeking behaviour among health professionals at Federal Medical Centre Abuja, where 83.7% of respondents demonstrated an average level of internet use proficiency.

Also, data in table 3 shows the extent of internet usage, indicating that 63% of the respondents use the internet to check or verify health information on existing/emerging diseases, drugs and medication, professional updates, and general health information for patient care. This aligns with the findings of Emmanuel and Dan-Muhammadu (2017), showing that health professionals primarily use the internet for professional updates, communication with patients, drug/medication information, disease trend monitoring, among other purposes. This is consistent with Koller *et al.,* (2001), which highlighted the main areas of internet use during consultations as information retrieval on drugs, patient-specific details, vaccination recommendations, and travel advice. It also resonates with the interviewees' responses, as some mentioned searching for medical terminology, diseases, viruses, diagnosis, treatment protocols, clinical findings, and updates on current practices in the field.

Subsequently, table 4 shows that 37.3% of the respondents used the internet for sharing information, academic purposes, notifying and updating colleagues on any information, and online consultations with patients. This finding is consistent with Dahiru (2018) submission on the use of internet facilities for health communication and information sharing in Ahmadu Bello University Teaching Hospital (ABUTH). The study indicated that respondents utilized internet facilities such as emails, intranet, websites, and Facebook for communication and information sharing to enhance healthcare service delivery in the hospital.

The second research question pertains to the various types of internet services utilized by medical personnel for professional purposes. table 5 data reveals that 43.7% of the respondents utilized Google Scholar. This aligns with Adeleke *et al.,* (2015), who found in their study on computer and internet use among tertiary healthcare providers and trainees in a Nigerian Public hospital that a majority used Google Scholar for accessing professional information updates. Conversely, this contrasts with the findings of Adomi *et al.,* (2011) regarding the internet usage by medical practitioners in private hospitals in Warri, where resources like Medline/PubMed were predominantly used. It also differs from Oriogu *et al.,* (2017), where 69.4% of respondents reported using only African Journal Online (AJOL). Furthermore, these results contrast with Ajuwon (2006) findings on physicians' use of the internet for patient care in a teaching hospital in Ibadan, where 99% of respondents utilized Medline/PubMed for professional purposes.

Similarly, table 6 indicates that 32.3% of respondents used WhatsApp for professional purposes. This is supported by the responses of interviewees one, two, four, and five who stated, "we use WhatsApp for sharing information." this aligns with the findings of Hamamadeh *et al.,* (2022) on the effects of internet and social media use on the work performance of physicians and nurses in workplaces in Palestine, where the majority of participants utilized WhatsApp for professional purposes. The data is also consistent with one of the assumptions of the Uses and Gratification Theory, which posits that "the audience is conceived as active," allowing them to decide which media to use and for what purpose. However, this contrasts with the results of Gallant et al., (2011) on promoting participatory medicine with social media,

where respondents predominantly used Facebook, Twitter, or YouTube for professional purposes.

Furthermore, table 7 indicates that 32% of the respondents rarely use email for professional purposes, which contrasts with the findings of Masters (2008) on doctors' reasons for using the internet and the factors influencing their usage, where the majority of the participants focused mainly on the use of email for professional purposes. Similarly, a finding of Shabi *et al.,* (2011a) on physicians' utilization of internet medical databases at tertiary health institutions in Osun state also showed that respondents used email mainly for professional purposes.

Conclusion and Recommendations

Based on the findings of this research, we conclude that internet services are essential facilities for the daily professional activities of medical personnel. There has been an increased utilization of internet services by medical personnel at Abuja general hospitals for research, information sharing, diagnosis, and medications in recent years.

Based on the findings of this research, it is recommended that healthcare facilities should be provided with adequate internet services and protocols by the government, sponsors, and stakeholders for effective work purposes. Additionally, school curricula for medical students should be revised to include courses related to the use of communication technologies in the medical field for practice and research.

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