



**INTERNET-BASED HEALTH INFORMATION ACCESS AND UTILIZATION FOR
PERSONAL HEALTHCARE AMONG PATIENTS AT FEDERAL UNIVERSITY
DUTSIN-MA (FUDMA) CLINIC, NIGERIA**

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Abstract

Access to reliable internet-based health information has become increasingly critical for patient empowerment and healthcare decision-making in the digital age. This study examine the access and utilization of internet-based health information for personal healthcare among patients at the Federal University Dutsin-Ma (FUDMA) Clinic, Katsina State, Nigeria. Adopting a survey research design, the study focused on understanding how patients access and use online health information resources. Population was 120 patients who actively visit the clinic and use the internet for health-related purposes, ad total enumeration sampling was used. The primary data collection tool was a self-structured questionnaire. The findings revealed that 45% of patients regularly access internet-based health information, with the primary uses being medication advice (60%) and self-diagnosis (55%). However, barriers such as poor internet connectivity (70%), lack of digital literacy (45%), and limited access to devices (30%) were identified. The study concludes that while internet-based health information is moderately accessible, significant barriers hinder its full utilization. The study recommends improving internet accessibility, providing digital literacy training, and addressing technological barriers to enhance the use of online health information resources among patients.

Keywords: Internet-based health information, healthcare, digital literacy, patient access

Introduction

Worldwide, the use of internet-based health information has become a significant trend in personal healthcare management, with over 5 billion people accessing health-related resources online (World Health Organization [WHO], 2023). The growing availability of digital technologies has transformed the healthcare landscape, enabling individuals to seek medical information, monitor symptoms, and make informed decisions about their health without direct reliance on healthcare professionals. Internet-based health information sources, including websites, online forums, mobile health applications, and telemedicine platforms, have been credited with improving health literacy, promoting preventive care behaviors, and enhancing patient engagement in managing chronic and acute conditions (Smith, Johnson & Lee, 2023). Studies show that patients who actively access and use online health information demonstrate improved health outcomes, better medication adherence, and a greater sense of empowerment in their healthcare journeys (Anderson, Wang & Patel, 2022).

In developed countries, access to and utilization of internet-based health information is widespread, with approximately 80% of adults in the United States and Europe reportedly searching for health-related content online regularly (Garcia, Kim & Osei, 2023). In the United States, research reveals that about 65% of patients use online health information to supplement professional advice, leading to more informed consultations and improved doctor-patient relationships (Chen et al., 2024). Similarly, in Europe, national eHealth strategies have integrated online health information platforms into primary healthcare systems, resulting in enhanced patient education and a 25% reduction in unnecessary hospital visits (Perez & Muller, 2023). In Asia, countries like South Korea and Singapore have successfully implemented national health portals, with over 70% of patients utilizing government-endorsed websites for health management (Kawasaki et al., 2023).

In Africa, however, the access and utilization of internet-based health information is still evolving, with significant disparities across countries due to infrastructural limitations, low digital literacy, and uneven internet penetration rates. About 40% of urban populations in sub-Saharan Africa access health information online, compared to less than 20% in rural areas (Adebayo, Okafor & Mensah, 2023). South Africa stands out, with digital health initiatives contributing to an increase in online health information usage among 55% of its urban

population (Ncube et al., 2023). In contrast, countries like Nigeria, Kenya, and Ghana are still developing comprehensive eHealth strategies, with most online health information access driven by mobile phone technologies rather than structured government platforms (Adelakun & Dairo, 2023).

In Nigeria, the growing access to smartphones and mobile internet has expanded opportunities for patients to seek health-related information online. Recent studies estimate that around 45% of Nigerian adults use the internet to search for information related to symptoms, medications, and preventive healthcare (Ogunlana et al., 2023). Despite this growth, challenges such as limited health literacy, concerns about information credibility, and varying levels of internet access across regions continue to affect the effective utilization of internet-based health information (Okeke & Balogun, 2023). At Federal University Dutsin-Ma (FUDMA) Clinic in Katsina State, patients increasingly rely on digital sources for personal healthcare decisions, particularly among the younger population who are more familiar with internet technologies (Ibrahim et al., 2023). However, empirical data on the extent, patterns, and impact of internet-based health information utilization among these patients remains limited.

This study aims to examine the access and utilization of internet-based health information for personal healthcare among patients at FUDMA Clinic. By exploring patients' patterns of online health information-seeking behavior, the study will provide valuable insights into the role of internet-based resources in shaping healthcare decisions. The findings will contribute to the growing body of knowledge on digital health practices in Nigeria and offer recommendations for improving the quality and accessibility of online health information for better healthcare outcomes.

Statement of the Problem

Access to reliable health information is essential for informed decision-making, disease prevention, and effective personal healthcare management. With the rapid growth of digital technologies, the internet has become a major source of health information for patients globally. Internet-based health resources, including medical websites, online support groups, and mobile health applications, offer opportunities for patients to enhance their health literacy, manage chronic conditions, and make proactive healthcare choices. Research indicates that access to credible online health information can improve patient engagement, promote adherence to treatment plans, and empower individuals to adopt healthier lifestyles.

Despite these potential benefits, the extent to which patients at Federal University Dutsin-Ma (FUDMA) Clinic access and utilize internet-based health information for personal healthcare remains unclear. Many patients continue to rely solely on traditional healthcare consultations without fully leveraging the wealth of digital health information available to them. Additionally, challenges such as limited digital literacy, concerns about the credibility of online health information, inadequate internet access, and cultural factors may hinder effective utilization of internet-based health resources by patients at FUDMA Clinic.

Therefore, this study seeks to examine the access and utilization of internet-based health information for personal healthcare among patients at FUDMA Clinic.

Research Questions

1. To what extent do patients in FUDMA Clinic access internet-based health information for personal healthcare?
2. How do patients utilize internet-based health information in managing their personal healthcare in FUDMA Clinic?
3. What are the challenges affecting the access and utilization of internet-based health information among patients in FUDMA Clinic?

Literature Review

The purpose of this section is to provide context for the research study, highlight gaps in the existing knowledge, and demonstrate how the current study will contribute to the field of healthcare and digital health information. It helps researchers understand the scope of prior work, identify trends, and build a theoretical framework that supports their research questions.

Access to Internet-Based Health Information

The internet has transformed how individuals access health information, offering vast resources ranging from medical databases to patient support communities. Access to online health information empowers patients to make informed decisions, manage chronic conditions, and engage more actively in their healthcare journeys (Eysenbach, 2021). Studies show that factors such as internet availability, digital literacy, socioeconomic status, and educational background significantly influence patients' ability to access credible online health information (Wang &

Zhang, 2022). Rural populations and individuals with lower socioeconomic status often face greater challenges in accessing reliable online resources, exacerbating health disparities (Smith & Brown, 2023).

Healthcare providers have also observed a rise in patients presenting information obtained from the internet during consultations, reflecting the growing role of online resources in shaping patient perspectives (Johnson et al., 2022). However, concerns remain about the quality, credibility, and accuracy of internet-based health information, underscoring the need for improved digital health literacy among users.

Utilization of Internet-Based Health Information for Personal Healthcare

The utilization of online health information goes beyond simple information seeking—it often influences health behaviors, treatment adherence, and patient-physician communication. Research shows that patients use internet resources to understand symptoms, explore treatment options, seek second opinions, and prepare for medical appointments (Murray & López, 2021). Many patients report feeling more empowered and confident when they come prepared with knowledge obtained online (Chiu & Martin, 2022). However, the extent and effectiveness of utilization vary significantly. Some patients effectively integrate online information into their personal healthcare management, while others may experience confusion or misinformation (Anderson & Lee, 2023). Factors such as trust in online sources, health literacy, and prior health knowledge influence how patients interpret and apply internet-based health information (Nguyen & Silva, 2022).

Benefits of Accessing Internet-Based Health Information

Access to online health information offers several benefits for patients. It enhances autonomy, enabling patients to take a proactive role in managing their health conditions (Baker et al., 2021). Internet resources can also provide emotional support through online patient communities, helping individuals cope with chronic illnesses and mental health challenges (Ferguson & Davis, 2023). In addition, educational materials available online can improve medication adherence, promote healthy lifestyle choices, and assist in chronic disease management (Liu & Kim, 2022). Studies have also highlighted the role of mobile health (mHealth) applications and wearable technologies in providing real-time health data,

reminders, and teleconsultations, further enriching patients' engagement with their healthcare (Patel & Owens, 2021).

Barriers to Access and Utilization of Internet-Based Health Information

Despite the advantages, several barriers limit the effective access and utilization of internet-based health information. Digital divides persist, particularly affecting older adults, low-income populations, and individuals in remote areas (Crawford & Hassan, 2023). Lack of digital literacy, language barriers, and difficulty distinguishing credible sources from misinformation are major challenges (Knight & Wallace, 2022). Another barrier is the overwhelming volume of online information, which can lead to information overload, anxiety, and poor decision-making (Taylor & Wong, 2021). Moreover, some patients may mistrust online health resources or experience conflict between online advice and medical recommendations, resulting in confusion and reduced adherence to treatment plans (O'Connor et al., 2023).

Trends in Internet-Based Health Information Utilization

Emerging trends in the field highlight a move toward more personalized and interactive digital health experiences. Artificial intelligence (AI) chatbots, personalized health portals, and wearable technology are increasingly being integrated into personal healthcare management (Chen & Rivera, 2022). Telehealth services have also expanded, especially after the COVID-19 pandemic, making healthcare consultations and patient education more accessible online (Adams & Mitchell, 2021). Additionally, healthcare organizations are developing official online platforms and mobile apps to offer patients validated, up-to-date health information, addressing concerns about misinformation and promoting digital health literacy (Gonzalez & Hart, 2023). Another growing trend is the emphasis on participatory healthcare, where patients actively engage in shared decision-making, leveraging online resources as a tool to participate meaningfully in their care plans (Singh & Patel, 2022).

Future Directions for Research and Practice

Future research should focus on strategies to improve digital health literacy, particularly among vulnerable populations. There is a need for interventions that teach patients how to evaluate the credibility of online health information and apply it appropriately (Ramirez & Stewart,

2023). Furthermore, integrating internet-based health information into formal healthcare delivery systems can bridge the gap between patients' online experiences and their interactions with healthcare providers (Morgan & Lewis, 2022). Healthcare professionals should also receive training on how to engage with internet-informed patients, addressing their concerns without dismissing the information they bring. Policymakers can contribute by supporting initiatives that ensure equitable access to digital health resources, including affordable internet access, public education campaigns, and regulations that promote quality control in online health content (White et al., 2023).

While internet-based health information has become an indispensable resource for many patients, challenges related to access, quality, and application must be addressed. By empowering patients with digital health literacy, strengthening provider-patient communication, and ensuring equitable access, the full potential of internet-based health information in enhancing personal healthcare outcomes can be realized.

Theoretical Framework

The Technology Acceptance Model (TAM), developed by Davis (1989), is a widely used framework to understand the factors that influence individuals' acceptance and usage of new technologies. TAM focuses on two primary factors: Perceived Ease of Use (PEOU) and Perceived Usefulness (PU). These constructs are crucial in understanding how patients adopt and utilize internet-based health information for personal healthcare.

Key Constructs of TAM

- **Perceived Ease of Use (PEOU):** This refers to the degree to which an individual believes that using a particular technology would be free of effort. In the context of accessing internet-based health information, PEOU encompasses the simplicity, accessibility, and user-friendliness of online health platforms, mobile applications, and websites. The more effortless it is for patients to navigate and understand health-related online content, the more likely they are to use it regularly for managing their health (Venkatesh et al., 2003).
- **Perceived Usefulness (PU):** This refers to the degree to which an individual believes that using a particular technology would enhance their performance or in this case,

improve their healthcare management. For patients, the perceived usefulness of internet-based health information could be linked to factors such as the quality of the health information, the ability to make informed decisions, and the impact on managing chronic conditions, treatment adherence, and overall health outcomes (Davis, 1989).

The model suggests that both PEOU and PU positively influence the Behavioral Intention to Use (BIU), which in turn affects the actual Use Behavior (UB) of technology. For instance, if patients perceive online health information as easy to use and believe that it will enhance their ability to manage their health, they are more likely to use it regularly and actively (Turel & Serenko, 2021).

Application of TAM to Healthcare

The TAM has been successfully applied to understand how patients utilize health technologies, including internet-based health information. Studies have shown that PEOU and PU play significant roles in the acceptance and use of digital health resources. For example, patients who find it easy to access health information online and perceive it as beneficial to their health management are more likely to use the internet for health-related purposes (Gao et al., 2015).

In the context of internet-based health information, the PEOU could refer to factors such as the ease of accessing online health resources, the intuitive design of websites and apps, and the clarity of health-related content. On the other hand, PU might relate to how patients believe that accessing online health information can improve their knowledge about health conditions, facilitate better decision-making, and complement the care provided by healthcare professionals.

Extensions and Critiques of TAM

While TAM has been widely used and validated in many contexts, some scholars argue that the model's focus on perceived ease and usefulness may overlook the influence of external factors, such as social influence, trust in online health information, and self-efficacy (Venkatesh et al., 2012). These factors may also significantly influence patients' intention to use online health information.

For instance, patients' trust in the credibility and accuracy of internet-based health information may moderate their perceptions of its usefulness. Similarly, self-efficacy, or an individual's

belief in their ability to successfully use digital tools to manage their health, can significantly impact their adoption of online health resources (Chen & Lin, 2023).

Relevance to the Current Study

The TAM provides a robust framework for understanding patients' behaviors in accessing and utilizing internet-based health information. By focusing on Perceived Ease of Use and Perceived Usefulness, this model helps to explain why some patients are more likely to embrace internet-based health resources than others. Understanding these factors is critical for improving the design and accessibility of health information websites and apps, as well as enhancing health education and patient support strategies.

For this study, the TAM will guide the exploration of how patients perceive online health information and the barriers or facilitators that affect its use. Identifying the key drivers of PEOU and PU can lead to actionable insights for improving the accessibility, usability, and impact of internet-based health information, thereby enhancing patient self-management and healthcare outcomes.

Methodology

The study adopted a survey research design, which is appropriate for gathering structured data from a defined group of individuals to gain insights into their characteristics, experiences, or perceptions. The population for this study consisted of 120 patients who actively visit the FUDMA Clinic for medical treatment. Given that the study aimed to gather data on a specific behavior (accessing and utilizing internet-based health information), the target population includes patients who have internet access and use it for health-related purposes. The clinic's records were used to identify patients who have had recent visits, the researchers employed a total enumeration technique, which involves including all members of the population in the study rather than selecting a sample, random sampling was used to select participants. The estimated sample size for the study was 120 patients, which is sufficient to provide meaningful insights while ensuring that the findings can be generalized to a broader population of patients at the FUDMA Clinic.

The primary tool for data collection was a self-structured questionnaire, which was designed to capture various aspects related to patients' access and utilization of internet-based health

information. The data collected were primary data, meaning they were original and directly obtained from the patients. The data were then analyzed using descriptive statistical techniques, including frequencies, percentages, means, and standard deviations, to summarize and interpret the responses. These techniques helped to identify trends in how patients access and use internet-based health information. UKASHATU H. MUSA, HASSAN USMAN, SAHABI, M. KABIR

For further analysis, SPSS software (version 26.0) was used to analyze the data. SPSS is a widely used tool in health and social science research for statistical analysis, ensuring accurate and reliable results.

Results

The findings of this research study are presented in this section, which explores the access and utilization of internet-based health information for personal healthcare among patients at Federal University Dutsin-Ma (FUDMA) Clinic, Katsina State, Nigeria. A total of 120 copies of the questionnaire were administered to patients attending the clinic, with 100 valid responses returned, resulting in an 83.3% response rate. Descriptive statistics, including frequency counts, percentages, means, and standard deviations, were used to analyze the data, which focus on three key aspects: the extent of access to internet-based health information, the ways in which patients utilize the information, and the challenges they face in accessing and utilizing such information.

Research Question One: To what extent do patients at FUDMA Clinic access internet-based health information for personal healthcare?

Table 1: Extent of Access to Internet-Based Health Information

Frequency of Access	Frequency (N)	Percentage (%)	Standard Deviation
Regularly access	45	45%	0.60
Occasionally access	35	35%	0.45
Rarely access	15	15%	0.50
Never access	5	5%	0.30

Source: Researcher's Field Survey, 2025

The results indicate that 45% of patients regularly access internet-based health information, while 35% access it occasionally, and 15% rarely access such information. Only 5% of the patients do not access internet-based health information at all. The standard deviations show a moderate variability in the extent of access, suggesting that while a significant portion of patients engage with online health resources, a substantial number still have limited access. This implies that internet-based health information is somewhat accessible to the patients at FUDMA Clinic, though it may not be universally utilized.

Research Question Two: How do patients utilize internet-based health information in managing their personal healthcare at FUDMA Clinic?**Table 2: Utilization of Internet-Based Health Information**

Utilization of Information	Frequency (N)	Percentage (%)	Standard Deviation
Used for self-diagnosis	55	55%	0.65
Used for medication advice	60	60%	0.60
Used for lifestyle changes	50	50%	0.55
Used for general health information	40	40%	0.50

Source: Researcher's Field Survey, 2025

The findings show that 60% of patients utilize internet-based health information primarily for medication advice, followed by 55% using it for self-diagnosis, and 50% for lifestyle changes. Only 40% of the patients use the internet for general health information. The standard deviations indicate a moderate spread in the responses, with most patients focusing on practical aspects like medication and self-diagnosis. This suggests that patients at FUDMA Clinic primarily rely on online resources to manage their health-related concerns directly, which highlights the potential role of the internet in supplementing healthcare services.

Research Question Three: What are the challenges affecting the access and utilization of internet-based health information among patients at FUDMA Clinic?

Table 3: Challenges to Access and Utilization of Internet-Based Health Information

Utilization of Information	Frequency (N)	Percentage (%)	Standard Deviation
Used for self-diagnosis	55	55%	0.65
Used for medication advice	60	60%	0.60
Used for lifestyle changes	50	50%	0.55
Used for general health information	40	40%	0.50

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Source: Researcher's Field Survey, 2025

The results indicate that poor internet connectivity (70%) is the most significant challenge patients face when accessing internet-based health information. This is followed by a lack of digital literacy (45%) and limited access to devices (30%). A smaller proportion (20%) reported challenges related to misinformation on health websites. The standard deviations suggest that the variability in responses is relatively high, particularly with regard to internet connectivity and digital literacy issues. These findings indicate that while patients at FUDMA Clinic may recognize the potential of the internet for health information, significant barriers exist, especially concerning technological and informational accessibility.

Discussion

Research Question One: Access to Internet-Based Health Information

The findings suggest that while a large portion of patients (45%) regularly access internet-based health information, there is still a notable proportion (35%) who access it occasionally, and 15% who rarely engage with it. This indicates that internet-based health information is moderately accessible but not universally utilized. This finding is consistent with previous

studies (Ani, Okon & Ahiauzu, 2018), which highlight that internet access for health purposes is increasing but still limited by factors like availability and individual internet usage habits.

Research Question Two: Utilization of Internet-Based Health Information

The data shows that the majority of patients use internet-based health information for medication advice (60%) and self-diagnosis (55%), which aligns with the trend of patients becoming more proactive in managing their health through online resources (Aina & Ajiferuke, 2022). However, a smaller proportion uses the internet for general health information, suggesting that the patients might be more focused on specific health needs rather than holistic wellness. This reflects the growing role of the internet in supporting decision-making in healthcare (Bankole & Oludayo, 2022).

Research Question Three: Barriers to Access and Utilization

The significant challenges identified in the study—poor internet connectivity (70%), lack of digital literacy (45%), and limited access to devices (30%)—underscore the need for infrastructural improvements and training programs. The issue of misinformation (20%) is also a concern, emphasizing the need for patients to be educated on how to discern reliable sources of health information (Ani, 2022). Addressing these barriers through improved internet services, digital literacy programs, and better access to devices would likely enhance the use of internet-based health information among patients.

Conclusion

This study reveals that while patients at FUDMA Clinic have access to and use internet-based health information, various challenges such as poor connectivity, digital literacy, and limited access to devices impede its full utilization. The findings suggest that enhancing internet infrastructure, providing digital literacy training, and improving access to reliable health information can significantly improve healthcare outcomes for patients at the clinic.

Recommendations

For Improving Access to Internet-Based Health Information, the study recommended that there is need to increase the regular use of internet-based health information, FUDMA Clinic should work towards improving internet accessibility. This can be achieved by partnering with local

internet service providers to enhance connectivity within the clinic. Offering free or subsidized internet access for patients would encourage more consistent use of online health resources. Additionally, the clinic could set up dedicated spaces or kiosks with high-speed internet access for patients who might not have personal internet-enabled devices.

For Enhancing Utilization of Internet-Based Health Information, the study recommended that patients primarily use the internet for specific purposes like medication advice and self-diagnosis, FUDMA Clinic should create more targeted educational resources that guide patients in utilizing the internet for comprehensive health management. This could involve providing easy-to-understand online guides or hosting informational sessions that teach patients how to use the internet for preventive care and general health information. Encouraging a broader usage pattern of online health resources could lead to better health outcomes for patients.

For Overcoming Barriers to Access and Utilization, the study recommended that poor internet connectivity, lack of digital literacy, and limited device access, FUDMA Clinic should introduce digital literacy training programs for patients. These programs should focus on basic internet navigation, identifying reliable health information sources, and using devices effectively. Additionally, the clinic could collaborate with tech organizations or local businesses to provide affordable or loaner devices for patients in need. Tackling these barriers will help improve both access to and the effective use of internet-based health information among patients.

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