Phone-Based Information Services and Uterine Fibroid Awareness among Women in Wukari, Taraba State

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Abstract
This study assessed mobile phone-based information services and awareness of uterine fibroids among women in Wukari, Taraba State. A descriptive survey research design was adopted. The target population comprised women of reproductive age (18–49 years) residing in Wukari, Taraba State. A sample of 300 women was selected using a simple random sampling technique. Participants were drawn from health facilities, community centres, and markets within Wukari. Data were collected using a researcher-developed, four-point Likert scale questionnaire and analysed descriptively using mean scores and standard deviation. The findings revealed a low level of awareness of uterine fibroids among women in Wukari. Furthermore, most respondents did not utilise their mobile devices to seek or access relevant and necessary information related to uterine fibroids or other associated health issues. The study recommended, among other measures, that healthcare providers and organisations implement mobile phone-based information services to educate women in the study area. Additionally, community-based interventions should be undertaken to raise awareness of uterine fibroids and promote risk reduction strategies among women in Wukari, Taraba State.

Keywords: Mobile Phone-Based, Information Service, Awareness, Risk Reduction, Uterine Fibroid.

Introduction

The power of information technology is greatly enhanced by communication technology and connectivity, whether through wireless networks, smartphone technology, or cables. Information technology plays a crucial role in enabling access to the internet and the World Wide Web. This access can assist individuals in searching for information related to health concerns or challenges. As computing power and communication become increasingly vital, mobile devices are playing a growing role particularly in the developing world. Mobile learning tools are the result of the convergence of two digital technologies: mobile phones and computers. The use of mobile devices for communication and access to healthcare information has increased exponentially over the past decade (Desouza et al., 2014). Mobile technologies and their applications are becoming increasingly essential in contemporary society. Devices such as smartphones, tablets, and e-book readers connect users instantly to the wider world. Advancements in networking technologies have made it possible for mobile devices and applications to be used effectively in health sciences and communication. According to Desouza et al. (2014), such technologies can significantly enhance learning by offering a rich, collaborative, and conversational experience particularly valuable for

women seeking access to vital health information. As a result, mobile phone-based information services have become an essential tool for accessing health services. Reports from smartphone networks indicate that nearly half the world's population either owns or has access to a mobile phone.

An increasing number of communities, particularly in developing countries like Nigeria, are exploring ways to utilise this medium. Ahmed et al. (2017) noted that mobile phone-based health information technologies and services are being used by individuals to access their health status and concerns in many countries. However, data on the effects of this technology in developing societies such as Taraba, Nigeria, remain limited. In recent years, mobile phone-based technology for accessing health-related information referred to as mobile health (mHealth) has emerged as a means of addressing the limited access to physical health facilities in underserved populations, particularly in rural areas. In a systematic review, Tamrat (2021) highlighted the scope of mHealth in supporting the 'continuum of care' for women, as well as maternal, newborn, and child health. This supports the argument that individuals can ascertain their health status simply by using mobile technologies to make enquiries about relevant health concerns. mHealth programmes, alongside other forms of health education, are now being used to track health-related issues. Khatun et al. (2014) indicated that mHealth services can be used for remote consultations, facilitating referrals and access to health facilities, and promoting timely contact with community health workers. However, as Tamrat (2021) noted, many people still do not use their mobile devices to access health-related information.

Within the context of this study, uterine fibroids represent a significant health concern among women, highlighting the need to explore the role of mobile phone-based information services in raising awareness and facilitating access to health information. Uterine fibroids, or leiomyomas, are benign uterine tumours (Marsh et al., 2013). It is estimated that around 70% of women will develop one or more fibroids by the age of 50, although approximately 30% experience symptoms without necessarily understanding their significance (Baird et al., 2013). Uterine fibroids are a serious public health issue and one of the most common benign gynaecological tumours affecting premenopausal women, often associated with significant morbidity (Sarkoide et al., 2016). While the exact cause remains unknown, risk factors include age, family history, low parity, and obesity. Many women with fibroids are undiagnosed due to the absence of symptoms (Andrea et al., 2013). Symptoms may include abnormal uterine bleeding, pelvic pain, dyspareunia (painful intercourse), urinary or rectal obstruction, and infertility (Zimmermann et al., 2012). These symptoms are thought to result from changes in the myometrium caused by physiological or pathological conditions.

Bowden et al. (2019) and Ezeama et al. (2022) found that while approximately 80% of women with fibroids are aware of the condition and have a basic understanding of it, many do not conduct further research using their mobile devices. People's perceptions of uterine fibroids can significantly impact how quickly they seek treatment. In rural areas, cultural myths and misconceptions often discourage women from seeking medical help, even when they have access to mobile devices and the internet. According to Othman and Al-Hendy (2018), the very mention of "fibroids" instils fear in many African women of reproductive age. Ghant et al. (2015) observed that a lack of general knowledge about fibroids significantly hampers women's ability to manage the condition. If women are unable to differentiate between normal and abnormal menstrual bleeding, or are unaware of fibroid symptoms, they are unlikely to seek treatment.

Uterine fibroids are a major health concern in Nigeria, particularly among women of reproductive age. There is a clear need for the Nigerian healthcare delivery system and health

education curriculum to address fibroid awareness more explicitly (Marissa et al., 2015). In Nigeria, fibroids account for 6.4% of all gynaecological admissions and 21.3% of major gynaecological surgeries (Marissa, 2015). Studies suggest a higher prevalence among Nigerian women compared to other populations, with up to 50% of Black women developing fibroids by their 50s. The highest prevalence is among women aged 30–39 years (47.5%), followed by those aged 20–29 (26.3%) and 40–49 (15.7%). Nulliparous women (those who have never given birth) are particularly at risk, accounting for 61.7% of cases. According to Parker (2017), common symptoms include menorrhagia (heavy menstrual bleeding), abdominal masses, infertility, and pelvic pain. These issues could be more easily managed if women used their mobile devices to seek information and clarification regarding their health. Most patients (95.6%) present with fibroids larger than 12 weeks' gestation, indicating delayed diagnosis and the risk of complications. Myomectomy is the most common treatment, accounting for 83.3% of surgeries, while total abdominal hysterectomy is performed in 11.6% of cases typically among women who have completed their families. Postoperative complications include anaemia (20.7%), wound infections (6.1%), and wound dehiscence (2.0%). The level of awareness of fibroids in Taraba State is poorly documented, but likely to be low, partly because many women do not regularly use their mobile devices to seek health-related information.

Parker (2017) and Divakar (2018) noted that there is no known method for preventing fibroids, but self-education and basic lifestyle changes can reduce risk factors and alleviate symptoms. While such preventive measures are readily available online, women infrequently use their devices to seek this information. Adegbesan-Omilabu et al. (2014) identified several ways to reduce fibroid risk, including understanding factors such as age, family history, ethnicity, diet, and obesity. Parker (2017) also reported that regular exercise can reduce the likelihood of developing fibroids: the more active a woman is, the lower her risk. Weight control is also important. Women are advised to maintain a healthy Body Mass Index (BMI), which is calculated by dividing weight in kilograms by height in metres squared, or weight in pounds by height in inches squared, then multiplied by 703. A healthy BMI is between 18.5 and 25. For those with a BMI above 25, steps should be taken to reduce weight. Laughlin and Stewart (2021) also advised that women recognise complications of fibroids, such as heavy menstrual bleeding, anaemia, abdominal swelling, and bladder or rectal pressure. All the above risk reduction strategies are accessible through various online platforms. This study aims to bridge the gap in healthcare access by promoting the use of mobile devices to address health concerns particularly uterine fibroids among women. It seeks to assess the use of mobile phone-based information services by residents, particularly women, in accessing relevant health information and in evaluating risk reduction strategies for uterine fibroids in Taraba State.

Statement of the Problem

Despite the prevalence of uterine fibroids among women, the condition remains poorly understood, and many women lack access to accurate information regarding its symptoms and treatment options. This lack of awareness, coupled with limited access to healthcare information, worsens the problem, often resulting in delayed diagnoses, inadequate treatment, and poor health outcomes. Wukari, in Taraba State, is a region with limited access to healthcare services, making it a suitable location to explore the impact of mobile phone-based health information services on awareness and risk reduction of uterine fibroids. Women in this area face significant barriers in accessing health information. These include low literacy levels, limited access to healthcare facilities, and cultural and social factors that restrict their mobility and autonomy. However, the use of mobile phones has the potential to bridge this information gap, especially in rural

communities. Mobile phone-based health information services can deliver accurate and timely information about uterine fibroids, empowering women to make informed health decisions and seek medical attention when necessary. Despite this potential, there is a lack of research into the use of mobile phone-based information services for addressing health concerns in Wukari, Taraba State. This study seeks to address this knowledge gap by assessing mobile phone-based information services and the level of uterine fibroid awareness among women in Wukari.

Research Objectives

The main objective of the study is to assess mobile phone-based information services and uterine fibroid awareness among women in Wukari, Taraba State. Specifically, the study aims to:

1. Assess the current level of awareness about uterine fibroids among women in Wukari, Taraba State.
2. Evaluate the extent to which mobile phone-based health information services contribute to awareness of uterine fibroids among women in Wukari, Taraba State.
3. Investigate the level of awareness regarding uterine fibroid risk reduction strategies among women in Wukari, Taraba State.

Research Questions

1. What is the current level of awareness and knowledge of uterine fibroids among women in Wukari, Taraba State?
2. To what extent do mobile phone-based health information services improve awareness and knowledge of uterine fibroids among women in Wukari, Taraba State?
3. What is the level of awareness of uterine fibroid risk reduction strategies among women in Wukari, Taraba State?

Methodology

The study adopted a descriptive survey research design to assess mobile phone-based information services and uterine fibroid awareness among women in Wukari, Taraba State. The study population consisted of women of reproductive age (18–49 years) residing in Wukari. A sample size of 300 women was selected using a simple random sampling technique. Participants were carefully chosen from health facilities, community centres, and markets within Wukari. The data collection instrument was a researcher-designed, four-point Likert scale questionnaire titled "Mobile Phone-Based Information Services and Uterine Fibroid Awareness Questionnaire (MPBISUFAQ"). The questionnaire was structured into three clusters with response options ranging from Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD), assigned values of 4, 3, 2, and 1 respectively. The instrument was validated for both face and content validity. Cronbach's alpha was used to test the reliability of the instrument, yielding a coefficient of 0.75, indicating acceptable reliability. The questionnaire was administered to respondents using a face-to-face approach. Data collected were analysed using Mean and Standard Deviation.

Results

Research Question 1: What is the current level of awareness and knowledge of uterine fibroids among women in Wukari, Taraba State?

Table 1: Awareness level of uterine fibroids.

S/N	Items	Respondents (300)		
		Mean	Stand. Dev.	Decision (2.50)
1	I have heard of uterine fibroids before.	2.52	1.04	Accepted
2	I know the common symptoms of uterine fibroids.	2.02	0.64	Rejected
3	I am aware that uterine fibroids can cause heavy menstrual bleeding.	2.07	0.71	Rejected
4	I know that uterine fibroids can be treated with surgery.	2.88	1.08	Accepted
5	I have ever discussed uterine fibroids with a healthcare provider.	2.08	0.73	Rejected
	Cluster mean	2.34	1.02	Accepted

The results shown in table 1 reveals that the mean response of women in the study area for items 1 and 4 are above the cut-off mean of 2.50, indicating agreement with the items stated. The cluster mean of awareness level of uterine fibroid is below the cut-off mean of 2.50. The result also indicates that items 2,3 and 5 were below the cut-off mean, implying that respondents were not aware of the common symptoms of uterine fibroid, as well as having the need to have discussions with health practitioners as regards uterine fibroid.

Research Question 2: To what extents do mobile phone-based health information services improve the awareness and knowledge of uterine fibroids among women in Wukari, Taraba State?

Table 2: Extents to which mobile phone-based health information services improve the awareness and knowledge of uterine fibroids.

S/N	Items	Respondents (300)		
		Mean	Stand. Dev.	Decision (2.50)
1	The mobile phone-based health information service has increased my knowledge about the causes of uterine fibroids.	2.14	1.12	Rejected
2	I feel more confident in my ability to recognize the symptoms of uterine fibroids after using the mobile phone-based health information service.	1.84	1.12	Rejected
3	The mobile phone-based health information service has provided me with accurate information about the treatment options for uterine fibroids.	2.29	1.22	Rejected
4	I am more likely to seek medical attention if I experience symptoms	2.26	1.26	Rejected

	of uterine fibroids after using the mobile phone-based health information service.			
5	The mobile phone-based health information service has improved my overall understanding of uterine fibroids.	2.16	1.19	Rejected
	Cluster mean	2.24	1.18	Rejected

The results shown in table 2 reveals that the mean response of women in the study area for all the items are below the cut-off mean of 2.50, indicating disagreement with the items, as to what extents do mobile phone-based health information services improve the awareness and knowledge of uterine fibroids among women in Wukari, Taraba State. The cluster mean of the respondents are below the cut-off mean of 2.50, indicating a low extent, and that respondents do not use their mobile devices to seek or access necessary and relevant information as regards uterine fibroid.

Research Question 3: What is the level of awareness regarding uterine fibroid risk reduction strategies among women in Wukari, Taraba State?

Table 3: Awareness level regarding uterine fibroid risk reduction strategies

S/N	Items	Respondents (300)		
		Mean	Stand. Dev.	Decision (2.50)
1	I am aware that regular exercise can help reduce the risk of developing uterine fibroids and other related sickness.	2.84	1.08	Accepted
2	I know that maintaining a healthy weight can help reduce the risk of developing uterine fibroids and other related sickness.	2.83	1.11	Accepted
3	I am aware that eating a diet rich in fruits and vegetables can help reduce the risk of developing uterine fibroids.	2.79	1.26	Accepted
4	I know that avoiding hormonal contraceptives can help reduce the risk of developing uterine fibroids.	2.25	1.25	Rejected
5	I am aware that regular health check-ups can help detect uterine fibroids early, reducing the risk of complications.	2.85	1.13	Accepted
	Cluster mean	2.61	1.17	Accepted

The results shown in table 3 reveals that the mean response of participants in the study area for all the items except 4 is below the cut-off mean of 2.50, indicating a high awareness level and agreement with the stated uterine fibroid risk reduction strategies in Wukari, Taraba State. The cluster mean of respondents is above the cut-off mean of 2.50, indicating that item 1, 2, 3, and 5 are the necessary strategies that should be taken to reduce the risk of having uterine fibroid.

Discussion of Findings

The first research question examined the current level of awareness and knowledge of uterine fibroids among women in Wukari, Taraba State. The results revealed a low level of awareness regarding uterine fibroids. Approximately 70% of respondents were unaware of its symptoms and had never discussed the condition with a healthcare provider, although they were aware that it could be treated surgically. This finding aligns with Baird et al. (2013), who reported that about 70% of women have one or more uterine fibroids by the age of 50, with roughly 30% experiencing signs and symptoms, yet lacking awareness of their implications. This is consistent with the present study, in which around 70% of respondents could not clearly identify the symptoms of uterine fibroids.

The second research question investigated the extent to which mobile phone-based health information services contribute to awareness and knowledge of uterine fibroids among women in Wukari, Taraba State. The findings showed that over 90% of respondents do not use their mobile devices to seek or access essential and relevant information concerning uterine fibroids or other related health issues. This finding is supported by Tamrat (2021), who reported that many individuals do not use their mobile devices to access health-related information that pertains to them.

The third research question assessed the level of awareness regarding uterine fibroid risk reduction strategies among women in Wukari, Taraba State. The results indicated that approximately 85% of respondents agreed with the suggested risk reduction strategies for uterine fibroids and related health concerns, aligning with the preventive measures commonly recommended for similar conditions. This is substantiated by Parker (2017), who stated that regular exercise and weight control reduce the likelihood of developing fibroids, and that the more physically active a woman is, the less likely she is to develop uterine fibroids. This finding is in line with the present study, where respondents agreed that regular exercise, healthy weight maintenance, a balanced diet, and regular medical check-ups are effective ways to reduce the risk of uterine fibroids.

Conclusion

The purpose of this study was to advocate for women to take responsibility for accessing health-related information particularly regarding uterine fibroids through their mobile devices. Mobile phone-based technology has the potential to empower women, especially those of reproductive age and those living in low-income areas, to search for reliable health information. This highlights the need to assess the usage of mobile-based information services by residents, especially women, to access relevant health information and explore strategies for reducing the risk of uterine fibroids in Taraba State. The findings of the study demonstrated a general lack of knowledge about uterine fibroids. Awareness plays a crucial role in improving individuals' understanding of diseases, management strategies, and healthy living. The findings of this study has implication on the the promotion of mobile phone-based information services as a means of improving the quality and reach of healthcare services in Wukari, Taraba State.

Recommendations

The following recommendations are made:

1. Healthcare providers and organizations should consider implementing mobile phone-based information services to educate women in Wukari, Taraba State, about uterine Fibroids, their symptoms, and risk reduction strategies. This can be done through SMS, voice calls, or mobile applications.
2. Health education programs should be developed to target women in Wukari, Taraba State, with specific information about uterine fibroids, their risks and prevention strategies. These programs should be culturally sensitive and tailored to the needs of the target population.
3. Community-based interventions should be conducted to raise awareness about uterine fibroids and to promote risk reduction strategies among women in Wukari, Taraba State. This can be done through community outreach programs, joint periodic health walks organized by concerned stakeholders and partnerships with local organizations.

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