Awareness, Attitudes, and Utilization of Artificial Intelligence for Self-Management of Ovarian Cysts among Women in Nsukka Local Government Area, Nigeria

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Abstract
Despite the growing availability of AI-driven health applications globally, little is known about awareness, attitudes, and practical utilization of Artificial Intelligence (AI) for managing ovarian cysts among women in semi-urban communities of Nigeria. This study investigates these dimensions among women in Nsukka Local Government Area, Nigeria, guided by the Technological Determinism Theory. A quantitative survey of 120 purposively sampled women aged 25–45 years was conducted using a structured questionnaire. Findings reveal moderate awareness of AI in general health management but limited familiarity with AI platforms specific to ovarian cyst self-management. Attitudinal responses were largely positive, reflecting confidence in AI's ability to provide timely, personalized, and reliable support, though participants expressed caution in sharing personal health data due to privacy concerns. Despite this awareness and favorable attitudes, actual utilization of AI tools was very low across all indicators, including symptom monitoring, health data tracking, and interactions with AI chatbots. The study underscores the need for culturally sensitive AI interventions, digital literacy programs, and trust-building measures, offering context-specific evidence to enhance reproductive health self-management in low-resource Nigerian communities.

Keywords: Artificial Intelligence, Awareness, Attitudes, Utilization, Ovarian Cysts, Self-Management

Introduction

Ovarian cysts constitute one of the most common gynaecological conditions affecting women of reproductive age globally, with implications for physical well-being, emotional health, and quality of life (Lotfy et al., 2024). Although many ovarian cysts are benign and self-limiting, their symptoms, such as pelvic pain, menstrual irregularities, and anxiety, often require sustained monitoring and self-management (Mobeen & Apostol, 2025). In low- and middle-income countries, including Nigeria, access to specialised gynaecological care remains low, especially in rural and semi-rural communities, making self-management practices an important component of women's reproductive health (Mariani et al., 2017). Consequently, attention has increasingly shifted towards innovative health technologies that can support women in monitoring symptoms, accessing health information, and making informed decisions about their care.

In recent years, artificial intelligence (AI) has emerged as a transformative force in digital health, enabling personalised health information, symptom tracking, decision support, and predictive analytics through mobile and web-based applications (Bajwa et al., 2021). AI-driven health applications are increasingly being promoted as tools for self-management of chronic and reproductive health conditions, offering users real-time feedback and tailored recommendations.

Globally, studies (Maita et al., 2024; Widjaja et al., 2024) have shown that such technologies can enhance health awareness, improve self-care behaviours, and bridge gaps in healthcare delivery. As smartphone penetration and internet access continue to expand in Nigeria, AI-based health applications hold significant potential for empowering women to actively participate in managing gynaecological conditions such as ovarian cysts.

Despite the growing availability of AI-enabled health applications, existing research has largely concentrated on technological development and clinical effectiveness within high-income settings. There is comparatively limited empirical evidence on how women in developing contexts perceive, understand, and use these technologies for reproductive health self-management. In Nigeria, studies on digital health adoption have focused more broadly on telemedicine or maternal health services, with little attention paid to AI-based applications for specific gynaecological conditions. Moreover, the perspectives of women at the community level, particularly regarding awareness, attitudes, and actual utilisation of AI tools for self-management of ovarian cysts, remain underexplored. This gap motivated the current study with a focus on Nsukka Local Government Area, Enugu State, Nigeria.

Statement of Problem

The increasing integration of artificial intelligence into health applications has created new opportunities for self-management of gynaecological conditions such as ovarian cysts. However, the effectiveness of these AI-based tools largely depends on users' awareness of their existence, positive attitudes towards their use, and actual utilisation. In many low- and middle-income settings, including Nigeria, women continue to experience challenges related to limited access to specialised reproductive healthcare, inadequate health information, and inconsistent follow-up care for ovarian cysts. Despite the growing availability of AI-driven health applications, it remains unclear whether women possess sufficient knowledge of these tools, trust their relevance to reproductive health, or actively use them for managing ovarian cysts.

In Nsukka Local Government Area, there is a noticeable lack of empirical data on women's engagement with AI-based health technologies for ovarian cyst self-management. The absence of such localised evidence makes it difficult for healthcare providers, policymakers, and digital health developers to design interventions that are culturally appropriate, accessible, and effective. Without a clear understanding of women's awareness levels, attitudes, and utilisation patterns, AI-based health solutions risk being underutilised or misaligned with users' needs. Therefore, this study addresses a critical gap by investigating how women in Nsukka Local Government Area perceive and use artificial intelligence for managing ovarian cysts.

Objectives of the Study

The specific objectives of this study are to:

1. Ascertain the level of awareness of women regarding the use of artificial intelligence (AI) in the self-management of ovarian cysts in Nsukka Local Government Area.
2. Examine the attitudes of women towards employing AI technologies for managing ovarian cysts in Nsukka Local Government Area.
3. Determine the extent of utilisation of artificial intelligence (AI) in the self-management of ovarian cysts among women in Nsukka Local Government Area.

Literature Review

Artificial Intelligence

Artificial Intelligence (AI) refers to the simulation of human intelligence by machines, enabling them to perform tasks that traditionally require human cognition, such as reasoning, learning, problem-solving, and decision-making (Shadrach et al., 2024). Kaplan and Haenlein

(2019) emphasise AI's capacity to mimic cognitive functions and adapt over time. Central to these definitions is the idea that AI is not merely automated computation but involves intelligent behaviour, adaptability, and learning, distinguishing it from conventional software. AI is typically classified into several types based on functionality and capability. Narrow or weak AI refers to systems designed to perform specific tasks, such as image recognition, virtual assistants, or diagnostic tools, without general intelligence (Sowri & Banana, 2024). General or strong AI denotes hypothetical machines capable of human-level cognitive reasoning across multiple domains (Exeed College, 2025). In addition, AI can be categorised by operational methodology: rule-based systems that follow programmed logic, machine learning where systems learn from data patterns, and deep learning, a subset of machine learning that employs artificial neural networks for complex pattern recognition and prediction (Sarker, 2022). These types illustrate AI's versatility across diverse sectors, including healthcare, education, finance, and communication.

The impacts of AI are wide-ranging, both positively and negatively. On the positive side, AI enhances efficiency, accuracy, and decision-making; enables predictive analytics; improves healthcare delivery; and supports personalised services (Rahman et al., 2024). For instance, in healthcare, AI facilitates early disease detection (Bacha et al., 2025), optimises treatment planning (Nyambura, 2025), and extends access to remote communities (Yadav, 2021). Beyond health, AI has transformed industries through automation, data-driven insights, and innovative solutions to complex societal problems. Conversely, AI raises concerns including job displacement (Peiwen et al., 2025), privacy and data security issues (Javed, 2025), algorithmic bias, and lack of accountability (Faheem, 2024). These challenges highlight the need for robust regulatory frameworks and responsible deployment to maximise benefits while mitigating risks. Despite its transformative potential, AI remains a subject of debate and controversy. Ethical controversies revolve around autonomous decision-making, transparency, and accountability, particularly in high-stakes areas such as healthcare and law enforcement. There is also concern that overreliance on AI may erode human judgement and critical thinking, while algorithmic bias can exacerbate social inequalities.

Artificial Intelligence in Health Management

Artificial Intelligence (AI) has increasingly transformed the health sector, paralleling its impact in other domains. In healthcare, AI contributes to disease diagnosis, treatment planning, patient monitoring, and health data analysis. According to Topol (2019), AI integrates machine learning, natural language processing, and predictive analytics to interpret complex medical data, supporting clinical decision-making. Beyond automating routine processes, AI encompasses intelligent, adaptive systems capable of learning from patient data, providing personalised recommendations, and anticipating potential health risks.

Globally, a variety of AI tools are employed in healthcare. Diagnostic AI systems analyse medical images, laboratory results, and genetic data, enabling earlier and more accurate disease detection than traditional methods (Khalifa & Albadawy, 2024). Treatment optimisation systems leverage predictive models to recommend personalised interventions, monitor therapeutic responses, and minimise adverse events. Patient-facing applications, including mobile health (mHealth) apps and wearable devices, empower individuals to self-manage conditions, track symptoms, and adhere to medication schedules. Furthermore, AI enhances healthcare system efficiency by automating scheduling, resource allocation, and electronic health record (EHR) management, thereby reducing operational costs and improving service delivery (Mariani et al., 2024).

The integration of AI has particularly reshaped the delivery of personalised health interventions (Akkus et al., 2019). AI has shown considerable promise in supporting lifestyle modifications essential for maintaining optimal reproductive health among women of reproductive age, who experience dynamic physiological and psychological changes. In women's health, AI applications have expanded in areas such as mental health support, prenatal monitoring, and fertility tracking (Gbagbo et al., 2024). Wearable technology and mHealth platforms enable continuous monitoring of key health indicators, including ovulation cycles, heart rate variability, sleep patterns, and dietary habits (Zammit, 2023). Such tools enhance women's capacity to make informed health and lifestyle decisions. Recent innovations in reproductive health illustrate the practical impact of AI. Wearable devices, such as the Oura Ring and the Ava bracelet, monitor physiological changes including temperature, heart rate, and heart rate variability to detect menstruation, ovulation, and luteal phases of the menstrual cycle (Maijala et al., 2019; Nulty et al., 2022). These technologies promote awareness of reproductive milestones, enabling timely and proactive health decisions.

Ovarian Cysts and Artificial Intelligence

Artificial Intelligence (AI) has emerged as a promising tool for supporting self-management of ovarian cysts (Borna et al., 2025). Studies in digital health have shown that AI applications can enhance self-efficacy, improve adherence to monitoring routines, and reduce delays in care by offering real-time feedback based on user-entered data and predictive modelling (Topol, 2019). Research on AI in reproductive health indicates that women's engagement with AI tools depends on factors such as awareness, perceived usefulness, trust, and ease of use. While most AI studies in gynaecology focus on diagnostic imaging and clinical decision support, emerging evidence highlights the potential of AI to support self-management behaviours. For example, adaptive algorithms can analyse symptom patterns over time, predict potential risks, and provide tailored health advice (Babu et al., 2024), thereby reducing reliance on frequent clinic visits. However, challenges persist, including digital literacy, access to smartphones or the internet, data privacy concerns, and the need for culturally appropriate health information. These factors underscore the importance of assessing women's awareness, attitudes, and utilisation of AI for ovarian cyst self-management to ensure effective adoption and meaningful health outcomes.

Empirical Studies

Several studies have increasingly examined women's engagement with digital and artificial intelligence-enabled health technologies, particularly in the context of reproductive and chronic health conditions. Wright et al. (2025) provide a foundational overview of how women with polycystic ovary syndrome (PCOS) engage with digital technologies for condition-specific knowledge, self-management, and social support. Their scoping review identifies artificial intelligence–enabled tools, including conversational agents, as emerging resources within a broader digital health ecosystem. Importantly, the authors demonstrate that women's use of these technologies is shaped by perceived reliability, predictive accuracy, usability, and cultural sensitivity rather than mere availability. While the review establishes the relevance of AI to ovarian-related self-management, its descriptive scope and lack of empirical measurement of awareness, attitudes, and utilisation highlight the need for context-specific investigations.

Building on the role of user perception, Nouh et al. (2025) empirically examine women's knowledge and attitudes towards an advanced ovarian-related technology such as oocyte cryopreservation. Their findings show that moderate knowledge levels coexist with predominantly negative attitudes, which significantly influence perceptions and acceptance.

Although the study does not focus on AI, it underscores a critical insight applicable to AI-based self-management: technological adoption among women with ovarian conditions is strongly conditioned by awareness and attitudinal factors. This reinforces the relevance of examining not only the presence of AI tools but also women's readiness to engage with them.

Evidence from AI-specific health interventions further clarifies how attitudes toward AI are formed. Shaban et al. (2025), through a randomised controlled trial, demonstrate that AI chatbots can significantly improve women's knowledge and attitudes when integrated into structured nursing care. However, the intervention remains clinician-mediated, limiting insights into autonomous self-management. Similarly, Elhadi et al. (2025) report high perceived usefulness of AI in breast cancer screening among Emirati women but persistent reluctance to trust AI without human oversight. Together, these studies suggest that while AI can positively shape knowledge and attitudes, trust and contextual reassurance remain critical to sustained use.

Qualitative studies deepen understanding of the concerns shaping women's engagement with AI. Gatting et al. (2024) reveal that fears of diagnostic errors, rapid technological change, and loss of human involvement strongly influence acceptability, even among women generally supportive of innovation. This perspective aligns with Lennox-Chhugani et al. (2021), who show that women are more willing to accept AI when it serves a clearly defined clinical purpose but remain hesitant towards broader AI-based health applications. Viberg Johansson et al. (2024) further demonstrate that transparency, institutional trust, and human oversight are central to AI acceptance. Collectively, these studies highlight persistent barriers that may similarly affect the uptake of AI tools for self-management. Extending beyond physical health, Turchioe et al. (2023) show that women's openness to AI in mental healthcare is tempered by concerns about data misuse, potential harm, and erosion of the patient–clinician relationship. Their findings emphasise the importance of transparency and user understanding of AI outputs, principles that are equally applicable to AI-driven self-management of ovarian cysts.

The reviewed studies above reveal a consistent pattern: while AI holds promise for supporting women's health, its effective use in self-management contexts remains contingent on awareness, attitudes, trust, and perceived relevance. The limited focus on community-level utilisation, particularly in low- and middle-income settings, underscores the necessity of examining these dynamics among women in Nsukka Local Government Area, Nigeria.

Theoretical Framework

The study is anchored on the Technological Determinism Theory. The theory was originally articulated by Thorstein Veblen (1857–1929) and later expanded and popularised by Marshall McLuhan and Melvin Kranzberg in the 1960s (Asemah et al., 2017). The theory posits that technological innovation is a primary driver of social change, shaping social structures, cultural practices, and human behaviour (Vernyuy, 2024). Central to this perspective is the assumption that technological developments do not merely support society but actively reorganise how individuals think, interact, and respond to their environment. McLuhan's assertion that "the medium is the message" and Kranzberg's emphasis on the non-neutral nature of technology underscore the idea that technological tools influence patterns of perception and behaviour beyond their intended functions. The theory has been widely applied in studies examining the societal impacts of mass media, digital communication, and, more recently, artificial intelligence in sectors such as healthcare, education, and governance.

In the context of healthcare, Technological Determinism has been used to explain how innovations such as telemedicine, electronic health records, and AI-driven diagnostic systems reshape patient–provider relationships, healthcare delivery models, and health decision-making

processes. Applied to the present study, the theory provides a useful framework for examining whether women perceive, accept, and utilise artificial intelligence for the self-management of ovarian cysts.

Methodology

This study adopted a quantitative research design using a survey method to generate data on women's awareness, attitudes, and utilisation of artificial intelligence–based applications for the self-management of ovarian cysts. The study population comprised women aged 25–45 years residing in Nsukka Urban Area, which includes Nru, Ihe/Owerre, and Mkpunanor communities. According to CityPopulation.de (2022), the female population of Nsukka Urban Area is estimated at 133,839, representing approximately 51.7% of the total population. A sample size of 120 respondents was selected using a purposive sampling technique. This approach was considered appropriate because the study focused on women within a specific age bracket who were more likely to have reproductive health experiences and sufficient exposure to digital technologies relevant to the study. The purposive selection ensured that respondents possessed the requisite characteristics and awareness needed to provide valid and relevant data on the subject matter.

Data were collected using a structured questionnaire, which served as the primary research instrument. The questionnaire consisted of close-ended items designed to measure respondents' level of awareness, attitudes, and extent of utilisation of AI-based applications in managing ovarian cysts. The instrument was structured in line with the study objectives and administered directly to the respondents. Data obtained were analysed using descriptive statistical tools, including frequencies, percentages, and mean scores, to summarise responses and identify prevailing trends. Secondary data were also sourced from relevant scholarly articles and online databases to support interpretation and contextualise the findings.

Data Presentation

Table 1. Demographic Characteristics of Respondents

Characteristic	Response	Frequency (n=120)	Percentage (100%)
Age (years)	25–29	32	26.7
	30–34	38	31.7
	35–39	28	23.3
	40–45	22	18.3
Marital Status	Single	44	36.7
	Married	62	51.7
	Divorced/Widowed	14	11.6
Educational Level	Secondary education	24	20.0
	Diploma/NCE	30	25.0
	Bachelor's degree	46	38.3
	Postgraduate degree	20	16.7
Employment Status	Student	22	18.3
	Self-employed	40	33.3
	Public/Private sector employee	38	31.7
	Unemployed	20	16.7
Monthly Income (₦)	Below ₦50,000	34	28.3
	₦50,000–₦100,000	42	35.0
	Above ₦100,000	28	23.3
	Not applicable	16	13.4

Table 1 presents the demographic profile of the 120 respondents surveyed in the study. The age distribution indicates that the majority of participants were within the economically and reproductively active age groups, with women aged 30–34 years constituting the largest

proportion (31.7%), followed by those aged 25–29 years (26.7%). Most respondents were married (51.7%), suggesting a population likely to have heightened reproductive health concerns, while 36.7% were single and 11.6% were divorced or widowed. In terms of educational attainment, a substantial proportion of the respondents possessed tertiary education, with 38.3% holding a bachelor's degree and 16.7% having postgraduate qualifications, indicating a relatively high level of literacy and potential exposure to digital technologies. Employment status shows that the majority were economically active, with 33.3% self-employed and 31.7% engaged in public or private sector employment, while 18.3% were students and 16.7% unemployed. Regarding income, 35.0% earned between ₦50,000 and ₦100,000 monthly, while 28.3% earned below ₦50,000, reflecting varied socioeconomic backgrounds that may influence access to and utilisation of AI-based health applications.

Table 2. Level of Awareness Regarding the Use of Artificial Intelligence (AI) in the Self-Management of Ovarian Cysts

Awareness Item	Very Aware	Aware	Moderately Aware	Slightly Aware	Not Aware
Existence of AI	38 (31.7)	34 (28.3)	22 (18.3)	16 (13.3)	10 (8.4)
AI use in personal health management	32 (26.7)	36 (30.0)	24 (20.0)	18 (15.0)	10 (8.3)
AI platforms for personal health management	24 (20.0)	30 (25.0)	28 (23.3)	22 (18.3)	16 (13.4)
AI platforms for self-management of ovarian cysts	18 (15.0)	26 (21.7)	30 (25.0)	24 (20.0)	22 (18.3)

Table 2 indicates a generally moderate level of awareness among respondents regarding the use of artificial intelligence (AI) in the self-management of ovarian cysts. Awareness was highest for the general existence of AI, with a majority of respondents reporting being either very aware or aware, suggesting that AI as a concept is relatively familiar to the study population. A comparable pattern was observed for awareness of AI use in personal health management, reflecting growing exposure to digital health technologies. However, awareness declined when respondents were asked about specific AI platforms for personal health management and was lowest for AI platforms designed for the self-management of ovarian cysts, where higher proportions of respondents reported only moderate, slight, or no awareness. This gradient underscores a clear gap between general awareness of AI and knowledge of its specialized applications in reproductive health.

Table 3. Attitudes of Women toward Employing AI for Managing Ovarian Cysts

Attitude Item	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
I feel AI can improve self-management of ovarian cysts	40 (33.3)	36 (30.0)	18 (15.0)	14 (11.7)	12 (10.0)
I feel confident AI technologies are reliable in the management of ovarian cysts	32 (26.7)	38 (31.7)	22 (18.3)	16 (13.3)	12 (10.0)
I feel AI provides timely information for the management of ovarian cysts	36 (30.0)	40 (33.3)	20 (16.7)	12 (10.0)	12 (10.0)
AI provides personalized information for self-management of ovarian cysts	30 (25.0)	34 (28.3)	26 (21.7)	18 (15.0)	12 (10.0)
I am comfortable sharing my personal information on AI to assist me in managing ovarian cysts	24 (20.0)	30 (25.0)	28 (23.3)	20 (16.7)	18 (15.0)

Table 3 reveals a substantial proportion of respondents either strongly agreed or agreed that AI can improve the self-management of ovarian cysts and provide timely and reliable information, indicating confidence in the functional benefits of AI-enabled health technologies. Similarly, perceptions of AI's capacity to deliver personalized information attracted more favorable than unfavorable responses, although a noticeable proportion of respondents remained undecided, suggesting partial uncertainty about advanced AI functionalities. In contrast, attitudes were more cautious regarding the sharing of personal information on AI platforms, with relatively higher levels of disagreement and indecision, reflecting persistent concerns about data privacy and security. The result implies an overall positive attitude among women toward employing artificial intelligence (AI) for managing ovarian cysts.

Table 4. Extent of Utilization of Artificial Intelligence (AI) in the Self-Management of Ovarian Cysts

Utilization Item	Very High Extent	High Extent	Moderate Extent	Low Extent	Very Low Extent
Use of AI-based health applications to monitor ovarian cyst symptoms	6 (5.0)	10 (8.3)	18 (15.0)	36 (30.0)	50 (41.7)
Reliance on AI tools for information or guidance on ovarian cyst management	8 (6.7)	12 (10.0)	20 (16.7)	34 (28.3)	46 (38.3)
Use of AI platforms to track health data related to ovarian cysts	5 (4.2)	9 (7.5)	16 (13.3)	38 (31.7)	52 (43.3)
Consultation of AI tools before or alongside visiting healthcare professionals	7 (5.8)	11 (9.2)	22 (18.3)	35 (29.2)	45 (37.5)
Use of AI-driven recommendations for lifestyle or symptom management	6 (5.0)	10 (8.3)	19 (15.8)	37 (30.9)	48 (40.0)
Interaction with AI chatbots or virtual assistants for ovarian cyst–related support	4 (3.3)	8 (6.7)	14 (11.7)	36 (30.0)	58 (48.3)

Table 4 demonstrates a very low level of utilization of artificial intelligence (AI) in the self-management of ovarian cysts among women in Nsukka Local Government Area, despite the relatively high awareness and positive attitudes reported in earlier tables. Across all utilization indicators, the majority of respondents reported low or very low extent of use, particularly in the areas of symptom monitoring, health data tracking, and interaction with AI-based chatbots, where fewer than one-fifth of respondents indicated moderate to high utilization. Even the use of AI tools for information seeking and decision support alongside professional healthcare was minimally practiced, suggesting that awareness of AI and favorable perceptions have not translated into actual behavioral adoption.

Discussion of Findings

The study primarily investigates the level of awareness, attitudes, and Utilization of Artificial Intelligence for Self-Management of Ovarian Cysts among Women in Nsukka Local Government Area, Nigeria. The findings indicate that women in Nsukka Local Government Area demonstrate a moderate level of awareness regarding the use of artificial intelligence (AI) for self-managing ovarian cysts. As reflected in Table 2, general awareness of AI and its application in personal health management was higher than awareness of specialized AI platforms for ovarian cyst management, suggesting that women are familiar with AI conceptually but less so with condition-specific tools. This pattern aligns with Wright et al. (2025), who noted that women's engagement with digital health technologies is influenced by perceived reliability and usability rather than mere availability. From a theoretical standpoint, this awareness gradient can be interpreted through Technological Determinism, where exposure to AI as a social and

technological force shapes knowledge but does not automatically translate into specialized understanding.

In terms of attitudes, Table 3 reveals a predominantly positive disposition toward AI-enabled ovarian cyst self-management. Most respondents agreed that AI can provide timely, personalized, and reliable support, reflecting confidence in the functional potential of these technologies. However, hesitancy was observed regarding the sharing of personal health information, underscoring ongoing privacy concerns. These findings resonate with Shaban et al. (2025) and Elhadi et al. (2025), who found that trust, human oversight, and perceived safety are critical determinants of women's acceptance of AI in health contexts. The results suggest that while Technological Determinism emphasizes the influence of technology on behavior, adoption is mediated by attitudinal and socio-cultural factors, highlighting that exposure alone is insufficient to drive engagement.

Despite moderate awareness and favorable attitudes, Table 4 demonstrates very poor utilization of AI tools for ovarian cyst self-management, with most respondents reporting low or very low use across all measured indicators. This gap between awareness, positive attitudes, and actual use reflects structural, cultural, and technological barriers, including limited access, low digital literacy, and concerns about privacy and reliability. Consistent with findings by Gatting et al. (2024) and Viberg Johansson et al. (2024), women's engagement with AI is constrained by trust and contextual factors, suggesting that technological availability does not automatically reshape health behavior. In line with the principles of Technological Determinism, these results imply that while AI has the potential to reorganize health practices, its effective adoption is contingent upon supportive infrastructure, user confidence, and meaningful integration into everyday self-management routines.

Conclusion

This study demonstrates a clear disconnect between awareness, attitudes, and actual utilization of artificial intelligence (AI) for the self-management of ovarian cysts among women in Nsukka Local Government Area. While respondents exhibited moderate awareness of AI and generally positive attitudes toward its potential benefits, the extent of practical use remains very low. These findings highlight that awareness and favorable perceptions alone are insufficient to drive adoption, with structural barriers, privacy concerns, and limited access to specialized AI tools constraining meaningful engagement. The results underscore the relevance of Technological Determinism in understanding health behavior, suggesting that while technological innovations have the capacity to influence social practices, their impact is contingent on contextual, cultural, and infrastructural factors. This study contributes uniquely to the literature by providing context-specific empirical evidence on AI awareness, attitudes, and utilization for ovarian cyst self-management in a Nigerian community setting contrary to previous studies that largely focus on high-resource settings or condition-specific interventions other than for ovarian cyst self-management.

Implications of the Findings

The moderate awareness and positive attitudes toward AI suggest that women are receptive to technology-mediated self-management, highlighting an opportunity for health authorities to leverage AI for enhancing reproductive health outcomes. Also the very low utilization levels indicate that mere availability of technology is insufficient; interventions must address structural, educational, and trust-related barriers to ensure meaningful adoption. Furthermore, the study underscores the importance of culturally sensitive AI design, integrating

privacy safeguards and human oversight to build confidence and encourage sustained engagement.

Limitations of the Study

The study relied on self-reported data**,** which may be influenced by social desirability or recall bias. Second, the cross-sectional design limits the ability to infer causal relationships between awareness, attitudes, and utilization. In addition, the study focused exclusively on women in Nsukka Local Government Area**,** potentially limiting generalizability to other geographic and socio-cultural settings. Future research could address these limitations by employing mixed-method designs**.** The studies could expand to multiple local government areas or compare urban and rural contexts to enhance generalizability.

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