

Assessment of Knowledge and Management of Endometriosis among Healthcare Professionals in Nigeria

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ABSTRACT

Background: Endometriosis is a common gynecological condition with significant impacts on women's health and well-being. Adequate knowledge and management of endometriosis are crucial for effective patient care.

Objectives: To assess the knowledge, attitudes, and management practices regarding endometriosis among healthcare professionals in a tertiary hospital in Southeast Nigeria.

Methods: A descriptive cross-sectional study was conducted among healthcare professionals (doctors, nurses, and medical laboratory scientists). Data were collected using a structured questionnaire assessing socio-demographics, knowledge, attitudes, and management practices.

Results: A total of 125 healthcare professionals participated. Knowledge of endometriosis varied, with significant knowledge gaps observed in some areas. A high proportion of participants had heard of endometriosis, but knowledge gaps existed regarding risk factors, diagnostic methods, and complications. Most participants believed endometriosis is a significant public health issue and expressed interest in further training. Common management challenges included lack of patient awareness, limited access to diagnostic tools, and financial constraints.

Conclusion: This study highlights the need for improved education and training on endometriosis among healthcare professionals in Nigeria

Keywords: Endometriosis, Healthcare Professionals, Knowledge, Management.

INTRODUCTION

Endometriosis is a chronic gynecological condition characterized by the presence of endometrial-like tissue outside the uterus, leading to symptoms such as pelvic pain, dysmenorrhea, and infertility. Globally, it affects approximately 10% of women of reproductive age, significantly impacting their quality of life and reproductive health ^[1].

In Nigeria, the prevalence of endometriosis has been increasingly recognized. A recent study conducted by Onyemereze et al., ^[2] at a tertiary hospital in Southeast Nigeria reported a prevalence rate of 24.47% among women with fertility challenges. Despite this notable prevalence, awareness and understanding of endometriosis among Nigerian women remain suboptimal. The same study found that only 57.24% of participants were aware of the condition, with a mere 16.86% understanding its etiology and 19.48% recognizing its symptoms. Healthcare providers were identified as the primary source of information, underscoring the pivotal role they play in disseminating knowledge about the disease ^[2]. In a related study, Onyemereze et al., ^[3] reported the risk factors of endometriosis.

Healthcare professionals' knowledge and management practices concerning endometriosis are critical in ensuring timely diagnosis and effective treatment. A cross-sectional study assessing Nigerian doctors' knowledge, attitude, and practice regarding endometriosis revealed significant gaps. While all respondents had heard of endometriosis, 85% were uncertain about its prevalence. Notably, 66% believed that medical treatment alone was sufficient for management, and only 10% referred cases to gynecologists. This indicates a potential underestimation of the complexity of endometriosis management and the necessity for specialized care ^[1].

The underdiagnosis and mismanagement of endometriosis in Nigeria can be attributed to several factors, including limited awareness among healthcare providers, inadequate training, and insufficient diagnostic facilities. The National Hospital Abuja's Department of Obstetrics and Gynecology, for instance, offers specialized services in uro-gynecology and endoscopy, maternal-fetal medicine, reproductive endocrinology, and gynecologic oncology. However, the availability of such specialized services is limited, and not all healthcare facilities in Nigeria are equipped with the necessary expertise or equipment to diagnose and manage endometriosis effectively ^[4].

Efforts to bridge these knowledge and practice gaps are evident in the initiatives undertaken by organizations such as the EndoSurvivors International Foundation (ESIF). ESIF is dedicated to improving the lives of women living with endometriosis in Nigeria through awareness, education, research, advocacy, and support. Their programs aim to educate both the public and the medical community, promoting early diagnosis and intervention, which are crucial for favorable patient outcomes ^[5].

Despite these efforts, challenges persist. A report highlighted that the lack of awareness among Nigerian women contributes to the rising prevalence of endometriosis in the country. The report emphasized the need for increased education and awareness campaigns to address misconceptions and promote early medical consultation for menstrual pain and related symptoms ^[6].

MATERIALS AND METHODS

Study Design

This research utilized a descriptive cross-sectional design to assess the knowledge and management of endometriosis among healthcare professionals working in a teaching hospital in Southeast Nigeria. The study design was chosen to allow for a systematic and detailed collection of data about the participants' understanding, diagnostic practices, and management strategies related to endometriosis.

Study Area

The study was conducted at a tertiary teaching hospital located in Southeast Nigeria. The hospital serves as a referral center for surrounding states and provides a wide range of healthcare services, including gynecology and obstetrics. It is a hub for multidisciplinary healthcare professionals, including doctors, nurses, and medical laboratory scientists, making it a suitable location for the study.

Study Population

The study population consisted of healthcare professionals working in departments directly or indirectly involved in the diagnosis, treatment, and management of endometriosis, such as gynecology, obstetrics, family medicine, nursing, and laboratory sciences. Participants included:

- **Medical doctors:** Gynecologists, obstetricians, general practitioners, and resident doctors.
- **Nurses and midwives:** Particularly those working in gynecology and obstetrics units.
- **Medical laboratory scientists:** Involved in hormonal assays and other diagnostic evaluations relevant to endometriosis, etc.

Inclusion and Exclusion Criteria

Inclusion Criteria:

- Healthcare professionals with at least one year of work experience.
- Professionals currently practicing at the teaching hospital during the study period.
- Individuals who provided informed consent to participate in the study.

Exclusion Criteria:

- Healthcare professionals on leave or unavailable during the study period.

- Professionals who declined to provide consent.

Sampling Technique

A stratified random sampling technique was employed to ensure adequate representation of healthcare professionals across various departments. The strata included gynecology, obstetrics, nursing, and laboratory departments. Proportional allocation was used to determine the number of participants from each stratum, followed by simple random sampling to select individual participants.

Data Collection Instruments

Data were collected using a structured, self-administered questionnaire developed based on an extensive review of the literature. The questionnaire was divided into three sections:

- **Section A:** Socio-demographic characteristics (age, gender, years of experience, professional designation).
- **Section B:** Assessment of knowledge about endometriosis, including symptoms, risk factors, diagnostic methods, and treatment options.
- **Section C:** Management practices, including diagnostic protocols, referral patterns, and treatment approaches.

The questionnaire was validated through a pilot test conducted among healthcare professionals in another tertiary hospital outside the study area. Reliability was assessed using Cronbach's alpha, with a value of 0.85 indicating good internal consistency.

Data Collection Procedure

Data collection was carried out over a six-week period by trained research assistants. Questionnaires were distributed to eligible participants during departmental meetings or individual consultations, depending on availability. Participants were given sufficient time (approximately 30 minutes) to complete the questionnaire, after which the research assistants collected the completed forms.

Ethical Considerations

Written informed consent was obtained from all participants after explaining the study objectives, potential risks, and benefits. Participation was entirely voluntary, and participants were assured of the confidentiality of their responses. Data were anonymized to protect the identities of respondents.

Data Analysis

Data were entered into Statistical Package for the Social Sciences (SPSS) version 27 for analysis. Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize socio-demographic characteristics, knowledge levels, and management practices.

- **Knowledge assessment:** A scoring system was developed based on correct responses to knowledge-based questions. Participants' knowledge was categorized as poor, moderate, or good based on predetermined cut-off scores.
- **Management practices:** Responses related to management practices were analyzed and presented using descriptive statistics.
- **Inferential statistics:** Chi-square tests and logistic regression analyses were conducted to identify factors associated with knowledge levels and management practices. A p-value of <0.05 was considered statistically significant.

Limitations of the Study

- Potential recall bias, as participants were required to self-report their knowledge and practices.
- Social desirability bias, as participants might provide answers they perceive as correct or acceptable rather than reflecting their actual knowledge and practices.
- The study was limited to a single teaching hospital, which may affect the generalizability of findings to other settings.

RESULTS

Table 1: Demographic Information

Variable	Frequency (n = 125)	Percentage (%)
Age:		
20–29 years	12	9.60
30–39 years	61	48.80
40–49 years	38	30.40
50 years and above	14	11.20
Gender:		
Male	46	36.80
Female	79	63.20
Marital Status:		
Single	24	19.20
Married	84	67.20
Divorced/Widowed	17	13.60

Professional Role:		
Doctor	49	39.20
Nurse/Midwife	69	55.20
Others	7	5.60
Department:		
Obstetrics and Gynecology	79	63.20
General Practice	08	6.40
Emergency Unit	27	21.60
Others	11	8.80
Years of Professional Experience:		
Less than 5 years	47	37.60
5–10 years	39	31.20
11–15 years	29	23.20
Above 15 years	10	8.00

Table 2: Knowledge of Endometriosis

Variable	Frequency (n = 125)	Percentage (%)
Have you heard of endometriosis?		
Yes	125	100.00
No	00	0.00
What is your primary source of information about endometriosis?		
Medical school training	112	89.60
Professional workshops/seminars	6	4.80
Medical journals or publications	3	2.40
Online platforms	00	0.00
Colleagues	4	3.20
Other	00	0.00
Which of the following best describes endometriosis?		
A condition characterized by abnormal growth of uterine lining outside the	123	98.40

uterus		
A type of cancer affecting the reproductive organs	2	1.60
An infection of the pelvic organs	00	0.00
Not sure	00	0.00
*What are the common symptoms of endometriosis? (Select all that apply) (n = 370)		
Chronic pelvic pain	86	23.24
Painful menstruation (dysmenorrhea)	74	20.00
Pain during sexual intercourse (dyspareunia)	45	12.16
Infertility	67	18.11
Heavy menstrual bleeding	43	11.62
Fatigue	55	14.86
*What are the risk factors for endometriosis? (Select all that apply) (n = 485)		
Early onset of menstruation	118	24.33
Short menstrual cycles	121	24.95
Family history of endometriosis	125	25.77
High estrogen levels	76	15.67
Immune system dysfunction	45	9.28
*Which diagnostic methods are used for endometriosis? (Select all that apply) (n = 296)		
Clinical history and physical examination	45	15.20
Pelvic ultrasound	89	30.07
Laparoscopy	111	37.50
MRI	48	16.22
Not sure	03	1.01
*What complications can arise from untreated endometriosis? (Select all that apply) (n = 351)		

Infertility	123	35.04
Chronic pain	110	31.34
Adhesions or scar tissue	86	24.50
Cancer	32	9.12
Who is most at risk of developing endometriosis?		
Women of reproductive age	125	100.00
Post-menopausal women	00	0.00
Adolescents	00	0.00
I don't know	00	0.00
Are you aware of any myths or misconceptions about endometriosis?		
Yes	54	43.20
No	71	56.80
How would you rate your knowledge of endometriosis?		
Excellent	99	79.20
Good	26	20.80
Fair	00	0.00
Poor	00	0.00

* represents multiple responses

Table 3: Attitude Towards Endometriosis

Variable	Frequency (n = 125)	Percentage (%)
Do you believe endometriosis is a significant public health issue in Nigeria?		
Strongly agree	54	43.20
Agree	36	28.80
Neutral	00	0.00
Disagree	23	18.40
Strongly disagree	12	9.60
How often do you encounter patients with symptoms suggestive of		

endometriosis?		
Frequently	12	9.60
Occasionally	51	40.80
Rarely	44	35.20
Never	18	14.40
Do you feel confident in diagnosing endometriosis?		
Yes	111	88.80
No	14	11.20
Do you believe there is sufficient awareness about endometriosis among healthcare professionals in Nigeria?		
Strongly agree	25	20.00
Agree	31	24.80
Neutral	00	0.00
Disagree	47	37.60
Strongly disagree	22	17.60
Do you think healthcare professionals in Nigeria are adequately trained to diagnose and manage endometriosis?		
Yes	76	60.80
No	49	39.20
In your opinion, how significant is the impact of endometriosis on a woman's quality of life?		
Very significant	90	72.00
Significant	35	28.00
Slightly significant	00	0.00
Not significant	00	0.00
Do you think there is adequate public awareness of endometriosis in Nigeria?		
Yes	35	28.00
No	90	72.00

How important is it to include endometriosis in medical and nursing education curricula?		
Extremely important	48	38.40
Important	69	55.20
Moderately important	08	6.40
Not important	00	0.00

Table 4: Practices in the Management of Endometriosis

Variable	Frequency (n = 125)	Percentage (%)
Have you ever managed or treated a patient with endometriosis?		
Yes	85	68.0
No	40	32.0
*What treatment options do you typically recommend for managing endometriosis? (n = 275)		
Pain management with NSAIDs	80	29.1
Hormonal therapy	60	21.8
Surgical intervention (e.g., laparoscopy)	50	18.2
Lifestyle modifications	30	10.9
Referral to a specialist	40	14.5
Alternative therapies (e.g., acupuncture, herbal medicine)	10	3.6
Not applicable	5	1.8
Do you think the treatment options available in Nigeria are adequate for managing endometriosis?		
Yes	35	28.0
No	90	72.0
*What challenges do you face in managing endometriosis cases? (n = 313)		
Lack of awareness among patients	100	31.9
Limited access to diagnostic tools	80	25.6
Financial constraints of patients	70	22.4
Limited training in endometriosis management	50	16.0

Other	13	4.1
Are there support groups or resources available for patients with endometriosis in your region?		
Yes	30	24.0
No	70	56.0
Not sure	25	20.0
Do you believe improved training on endometriosis is necessary for healthcare professionals in Nigeria?		
Strongly agree	95	76.0
Agree	25	20.0
Neutral	3	2.4
Disagree	2	1.6
Strongly disagree	0	0.0
What strategies do you suggest to improve the diagnosis and management of endometriosis in Nigeria?		
Training and capacity building for healthcare professionals	50	40.0
Improved access to diagnostic tools	30	24.0
Public awareness campaigns	20	16.0
Subsidizing treatment costs	15	12.0
Including endometriosis in healthcare policies	10	8.0
Other	0	0.0
Would you be interested in attending training or workshops on endometriosis management?		
Yes	110	88.0
No	15	12.0

* represents multiple responses

Correlation Analysis

Variable Pair	Correlation Coefficient (r)	Significance (p-value)
Knowledge Score and Years of Practice	0.45	<0.01
Attitude Score and Frequency of Diagnosis	0.52	<0.01

Chi-Square Analysis

Variable Pair	Chi-Square (χ^2)	p-value	Significance
Gender and Confidence in Diagnosis	12.34	0.002	Significant
Knowledge of Endometriosis and Treatment Options	18.45	<0.001	Significant

DISCUSSION

The results of this study assessing the knowledge, attitude, and management practices of healthcare professionals regarding endometriosis in Nigeria provide valuable insights into the state of awareness and clinical approaches to this condition. The findings indicate that, while healthcare professionals are generally aware of endometriosis and its common symptoms, there are significant gaps in the training, resources, and management practices necessary to provide optimal care for patients with this condition.

In this study, the majority of respondents were females (63.2%), which is consistent with the fact that women, particularly nurses and midwives, are often at the forefront of patient care in gynecology and obstetrics. The age distribution also showed that the majority of respondents (48.8%) were aged 30–39 years, suggesting a relatively experienced cohort. These findings are aligned with previous studies in Nigeria, where a higher proportion of healthcare professionals engaged in women's health services were middle-aged ^[1]. The large proportion of healthcare professionals with fewer than five years of experience (37.6%) indicates the potential for early career exposure to training on women's reproductive health, including endometriosis, though additional in-depth training may be needed for better management.

The finding that 100% of respondents had heard of endometriosis is promising, as it highlights a level of awareness among healthcare professionals. This is in contrast to a previous study by Ajayi et al. ^[1], which found that while healthcare professionals in Nigeria were aware of endometriosis, the depth of their knowledge was limited. In this study, 98.4% of participants correctly identified endometriosis as a condition characterized by the abnormal growth of uterine lining outside the uterus, indicating a generally good understanding of its basic definition. However, discrepancies were noted in the identification of risk factors, with family history being the most widely recognized (25.77%), and less awareness of other factors such as immune system dysfunction (9.28%). This is consistent with findings by Onyemereze et al. ^[2], where Nigerian healthcare providers showed variability in their understanding of risk factors associated with endometriosis.

Although most healthcare professionals reported obtaining their knowledge of endometriosis from medical school training (89.6%), there was minimal utilization of other information sources such as professional workshops, journals, or online platforms. This suggests a need for continued professional development and accessible resources beyond formal education, a concern raised by EndoSurvivors International Foundation ^[4], which advocates for ongoing education on endometriosis for Nigerian healthcare providers.

The results of this study indicate that most healthcare professionals recognize endometriosis as a significant public health issue in Nigeria, with 43.2% strongly agreeing with this statement. However, a considerable proportion of participants (37.6%) disagreed with the notion that there is sufficient awareness of endometriosis among healthcare professionals in Nigeria. This finding is consistent with previous reports, such as one by

Obokoh ^[6], which highlighted the lack of awareness among Nigerian healthcare professionals as a major barrier to effective management. The study also showed that the vast majority (88.8%) felt confident in diagnosing endometriosis, yet the reality of infrequent encounters with patients presenting with symptoms of the condition (as reported by 35.2% of participants) suggests that diagnostic confidence may not always translate to frequent clinical practice, further underlining the need for more exposure to cases.

In line with the findings of Ajayi et al. ^[1], the majority of healthcare professionals (68%) reported having managed or treated patients with endometriosis. Pain management with NSAIDs was the most commonly recommended treatment option (29.1%), followed by hormonal therapy (21.8%) and surgical interventions (18.2%). However, a concerning 72% of respondents felt that the treatment options available in Nigeria were inadequate for managing endometriosis. This is consistent with the challenges identified by Ajayi et al. ^[1], who reported that while some forms of management are available, the lack of specialized care and resources for advanced treatment options like laparoscopy remains a barrier.

The study also identified several key challenges faced by healthcare professionals in managing endometriosis, with lack of awareness among patients (31.9%) being the most significant issue, followed by limited access to diagnostic tools (25.6%). These findings align with the concerns raised by Onyemereze et al. ^[2], who emphasized that inadequate diagnostic facilities are a major barrier to effective treatment in Nigeria. Furthermore, only 24% of respondents reported the availability of support groups or resources for endometriosis patients in their regions, indicating a substantial gap in patient support infrastructure.

The study revealed a strong demand for improved training among healthcare professionals, with 76% of participants strongly agreeing that additional training on endometriosis is necessary. This is consistent with the findings of Ajayi et al. ^[1], who also identified inadequate training as a major barrier to optimal endometriosis care. Additionally, the significant correlation between knowledge scores and years of practice ($r = 0.45$, $p < 0.01$) suggests that more experienced healthcare professionals are likely to possess better knowledge of endometriosis, although gaps remain even among those with extensive experience.

The chi-square analysis also revealed a significant relationship between gender and confidence in diagnosis ($\chi^2 = 12.34$, $p = 0.002$), suggesting that female healthcare professionals may feel more confident in diagnosing endometriosis, possibly due to greater exposure to reproductive health issues in their clinical practice. Similarly, the relationship between knowledge of endometriosis and treatment options ($\chi^2 = 18.45$, $p < 0.001$) further reinforces the importance of comprehensive knowledge in determining appropriate treatment practices.

The findings from this study are comparable to those from other regions, particularly regarding the gaps in knowledge and management of endometriosis. Similar studies conducted in other African countries, such as Ghana, have reported similar trends in awareness and treatment practices, with healthcare professionals frequently citing insufficient resources and training as major obstacles ^[1,4]. However, unlike some studies where there was a lack of awareness altogether, the healthcare professionals in this study had a relatively high awareness of endometriosis, but this awareness did not always translate into effective clinical practice, primarily due to systemic challenges such as inadequate diagnostic tools and treatment options.

CONCLUSION

This study provides a comprehensive overview of the current state of knowledge, attitudes, and management practices regarding endometriosis among healthcare professionals in Nigeria. The findings highlight both strengths and significant gaps in the healthcare system's response to this condition. There is a clear need for improved training, increased access to diagnostic tools, and greater public awareness to address the challenges associated with the diagnosis and management of endometriosis. Healthcare professionals' attitudes toward the importance of endometriosis in public health, combined with their recognition of the need for further education, suggest that the Nigerian healthcare system is poised for improvements in this area, provided there is concerted effort to address these challenges through policy changes, training, and increased resource allocation.

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