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# CLINICAL ARTICLE Endometriosis and associated symptoms among Nigerian women

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#### ABSTRACT

*Objective:* To determine the prevalence of endometriosis and identify associated symptoms among Nigerian women. *Methods:* A cross-sectional study was conducted at a center in Ibadan, Nigeria, between October 2008 and December 2010. All women aged 18–45 years scheduled for their first diagnostic laparoscopy for gynecologic indications were enrolled. Participants completed a previously validated self-administered questionnaire. Endometriosis was diagnosed on the basis of visual evidence. *Results:* Among 239 women analyzed, 115 (48.1%) had endometriotic lesions. Endometriosis was more common among women reporting dysmenorrhea and pelvic pain than among those not reporting these symptoms (20/28 [71.4%] vs 95/211 [45.0%]; P = 0.009). Women who reported dysmenorrhea were significantly more likely to have endometriosis than were those without dysmenorrhea (90/171 [52.6%] vs 25/68 [36.8%]; P = 0.027). The risk of endometriosis was not significantly increased in women with one pain symptom (odds ratio [OR]1.69; 95% CI 1.13–6.52) or three (OR 4.87; 95% CI 1.88–12.82) pain symptoms ( $\chi^2_{trend} = 15.5$ ; P < 0.001). In a multivariate logistic regression model, only pain other than dysmenorrhea or dyspareunia independently predicted endometriosis (P = 0.017). *Conclusion:* Endometriosis is fairly common among Nigerian women. Efforts to increase the awareness of endometriosis among the public, researchers, and clinicians are needed.

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## 1. Introduction

Endometriosis occurs when endometrial tissue is located in sites other than the endometrial lining of the uterus. Although it typically involves pelvic organs, it can also affect extra pelvic structures, such as the chest [1]. Several hypotheses have been proposed, but none can fully explain all types and locations of endometriosis [2]. The symptoms are mainly attributable to the response of endometrial glands (wherever their location) to cyclic hormonal stimulation, with subsequent shedding of endometrial tissue during menstruation; the disorder manifests most often as pelvic pain, dysmenorrhea, dyspareunia, and infertility [3].

Commonly reported risk factors for endometriosis include nulliparity, early menarche, a short cycle length, and an irregular menstrual cycle [4,5]. Underweight women are also at a significantly higher risk of developing endometriosis [6]. A family history of cancer has been less consistently reported as a risk factor [7].

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Because surgery is required to confirm the diagnosis, the prevalence of endometriosis in the general population is unknown [3]. Endometriosis is thought to be more prevalent among Asian women than among white women [4]. Endometriosis has been extensively studied among white populations [8,9], but research among African women has been sparse, although the disorder has long been assumed to be uncommon among African women [4,10]. The disease is thought to be associated with affluence; Aimakhu and Osunkoya [10] attributed the low rates among African women to widespread poverty.

Most primary reports on endometriosis among African women have been retrospective reviews of surgical findings (Table 1). In a cross-sectional survey conducted in northern Uganda, Somigliana et al. [16] identified endometriosis on the basis of a history of surgery for endometriosis, or clinical or ultrasonography findings indicative of endometriosis. They found only one case of endometriosis in a cohort of 351 women, giving a prevalence of 0.2% (95% confidence interval [CI] 0.01–0.9%). Kyama et al. [18] conducted a comprehensive review of endometriosis among African women. They concluded that with the increasing pace of globalization, African women are experiencing lifestyle changes and greater economic well-being—factors that promote marriage at a later age, delayed childbearing, and a smaller number of

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Authors	Year	Study design	Setting	Assessment	Prevalence of endometriosis, %
Ekwempu, Harrison [11]	1979	Retrospective	Northern Nigeria	Review of pelvic operations	8.2
Otolorin et al. [12]	1987	Retrospective	Southwest Nigeria	Laparoscopic evaluation for infertility	1.4
Mboudou et al. [13]	2007	Retrospective	Cameroon	Laparoscopic evaluation for infertility	13.5
Ikechebelu, Mbamara [14]	2011	Retrospective	Southeast Nigeria	Review of diagnostic laparoscopies	4.4
Butt et al. [15]	2012	Retrospective	South Africa	Review of elective hysterectomy	0.9
Somigliana et al. [16]	2012	Cross-sectional	Northern Uganda	Gynecologic consultations	0.2 (95% CI 0.01-0.9)
Alabi et al. [17]	2013	Retrospective	Southwest Nigeria	Laparoscopic evaluation	20.0

Primary reports on the prevalence of endometriosis in Africa	a.

Abbreviation: CI, confidence interval.

Table 1

children. This combination of factors will increase the risk of developing endometriosis, with a consequent rise in its prevalence in Africa.

Most reports on endometriosis in Nigeria have been case reports [19, 20], which could support the assumption that the condition is rare. However, two studies from approximately 30 years ago [11,12] indicated that endometriosis could be more common than has been assumed, with reported prevalences of 1.4%–8.2%. Reports from the past decade from Nigeria [17] and elsewhere in Africa [13] indicate that endometriosis could be as prevalent among women of African origin as it is among other populations.

Nigeria participated in the World Endometriosis Research Foundation Global Study of Women's Health, which prospectively recruited symptomatic and asymptomatic women undergoing laparoscopy for the first time. The study collected standardized, comprehensive, and robust epidemiologic information on endometriosis and its associated symptoms with a view to obtaining data about the prevalence, impact, treatment, and risk factors of endometriosis [21–23]. The major objectives of the present secondary analysis were to assess the prevalence of endometriosis among symptomatic Nigerian women and to examine its association with specific symptoms.

## 2. Materials and methods

As part of the Global Study of Women's Health—an international collaborative multicenter study [23]—a cross-sectional analytical investigation with prospective recruitment was conducted at the gynecologic outpatient clinic at University College Hospital, Ibadan, Nigeria, between October 1, 2008, and December 31, 2010. All women aged between 18 and 45 years who were scheduled for their first diagnostic laparoscopy for a gynecologic indication were eligible for inclusion. Women who were postmenopausal and those with a previous diagnosis of endometriosis on laparoscopy were excluded from the study.

Eligible women, who were identified using the elective laparoscopy list and medical records, were approached to participate in the study. A research nurse provided an information leaflet and counseled all eligible women about the study. Written informed consent was obtained from all study participants. Written informed consent was also obtained for surgery. Ethics approval for the study was obtained from the joint Ethics Committee of the University of Ibadan and the University College Hospital. The patients' contact details were collected to enable future studies.

Before surgery, consenting women were requested to complete the Global Study of Women's Health questionnaire [24], a 67-item questionnaire that includes questions about overall health, medical history, menstrual history and contraception, pelvic pain, obstetric history, and family history.The questions about pelvic pain address the presence and type of pelvic pain, the menstrual pattern, the effect of pain on daily activities, and the history of analgesic treatment. The severity of pain is assessed on a numerical rating scale ranging from 0 to 10 [25]. Respondents with dysmenorrhea are asked to provide the average dysmenorrhea score for the last 3 months and the worst dysmenorrhea score during the last 3 months.

In all women, surgery was performed as a day-case procedure. The laparoscopic view was projected onto a screen and the findings were recorded in a standard manner [26] by members of the research team. Endometriosis was diagnosed on the basis of visual evidence of endometriosis at laparoscopy alone, in keeping with the European Society of Human Reproduction and Embryology (ESHRE) guidelines [3]. It was staged according to the revised American Fertility Society classification [27]. At least two members of the research team attended each laparoscopy session. Training sessions on the identification of endometriosis at laparoscopy were organized periodically during the study period.

The data from the completed questionnaires and the laparoscopic findings were entered into an online data entry system. An onset of menstruation at age 13 years or younger was regarded as early menarche. A woman was considered to have pain associated with bowel symptoms if any pelvic pain was accompanied by a change in bowel movement or stool consistency. A woman was considered to have pain and urinary symptoms if any pelvic pain was accompanied by an increased urinary frequency or by pain before, during or after urination. In addition, the number of pelvic pain symptoms–dysmenorrhea, dyspareunia, and pain other than dysmenorrhea or dyspareunia–was determined.

Data analysis was performed with Epi Info version 3.5.1 (Centers for Disease Control and Prevention, Atlanta, GA, USA). The associations between endometriosis and pain symptoms were explored using the  $\chi^2$  and Fisher exact tests as appropriate. The median values for the average and worst pain scoresfor dysmenorrhea in women with and without endometriosis were compared using the independent-sample *t* test. A bivariate analysis was performed for all pain variables, early menarche, spontaneous or induced abortion, analgesic prescription or self-medication for dysmenorrhea. To determine which pain symptoms were predictive of endometriosis, the pain symptoms significantly associated with endometriosis at bivariate analysis were entered into a multivariate regression model. Associations were reported as odds ratios (ORs) and 95% CIs. P < 0.05 was considered statistically significant.

#### 3. Results

A total of 245 women consented to participate in the study. Complete data for analysis were available for 239 women. The age of the participants ranged from 18 to 45 years, with a mean age of  $32.9 \pm$ 5.6 years. Infertility was the major presenting complaint (208 [87.0%] participants), followed by pelvic pain (25 [10.5%]) (Fig. 1).

Evidence of endometriosis was recorded at laparoscopy for 115 (48.1%) women. Women aged 26–35 years accounted for 77 (66.9%) cases of endometriosis and were significantly more likely to have the disorder than were women in other age groups (P = 0.006). Endometriosis was least common among women who were aged 20 years or younger (Table 2).

Table 3 shows the associations between participant characteristics and endometriosis. Early menarche, previous spontaneous or induced abortion, and menorrhagia were not significantly associated with endometriosis. However, women who reported dysmenorrhea were almost twice as likely to have endometriosis as were those who had no dysmenorrhea (P = 0.027). Additionally, women who reported having received an analgesic prescription for dysmenorrhea (P = 0.017), having Download English Version:

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