Journal of Obstetrics, Gynecology and Cancer Research | ISSN: 2476-5848

Endometriosis: A Six-Year Epidemiological Study

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Article Info

10.30699/jogcr.9.3.335

Received: 2023/10/16;
Accepted: 2024/01/07;
Published Online: 15 May 2024;

Use your device to scan and read the article online

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ABSTRACT

Background & Objective: The etiology of endometriosis is unknown and many hormonal, inflammatory, genetic and environmental factors are effective in the formation of endometriosis. The present study investigated the epidemiology of endometriosis in patients referred to ShohadayeTajrish Hospital in six years.

Materials & Methods: This descriptive study performed on endometriosis Iranian women who referred to ShohadayeTajrish Hospital between 2016 and 2022. The sample size of this study was determined using the census method, and 711 patients. For analysis, SPSS version 22 was used, and results were reported as mean ± SD.

Results: Finally, 711 patients enrolled in this study and the average age of patients was 34.69± 7.53 years and the mean age of onset of disease was 29.97±4.61years. More than 55% of patients had a healthy weight and normal body mass index. 17.72 percent of patients had a history of infertility in their life's.

Conclusion: Endometriosis patients' life in many aspects, including their job, lifestyle, education, marital status and health care is affected.

Keywords: Endometriosis, Epidemiology, Prevalence, Pregnancy

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Introduction

Endometriosis is a condition in which tissue similar to the lining of the uterus grows outside of it, resulting in symptoms such as chronic pelvic pain, painful periods, painful intercourse, and infertility **(1-5)**.

Endometriosis is a common gynecological disorder affecting an estimated 10% of reproductive-aged women worldwide, with higher rates reported in infertile women **(4-9)**. It is characterized by the growth of endometrial tissue outside the uterus, causing chronic pelvic pain, dysmenorrhea, dyspareunia, and infertility **(7-11)**. The economic burden of endometriosis is substantial, with estimated annual healthcare costs of $119 billion globally **(3)**.

In the United States, the prevalence of endometriosis is estimated to be between 6-10% of women of reproductive age **(8-12)**. With an annual incidence rate of 1-2% **(5)**. In Iran, the reported prevalence of endometriosis varies widely, ranging from 2% to 40% of women of reproductive age **(6, 7)**.

Despite the high prevalence and significant impact of endometriosis on the quality of life and economic productivity of affected women, there is still a limited understanding of the epidemiology and risk factors for the condition, particularly in the context of Iran **(10-13)**. This lack of knowledge and awareness about endometriosis in Iran can lead to underdiagnosis, delayed diagnosis, and inadequate treatment, resulting in unnecessary suffering and long-term complications for women **(14-16)**. Therefore, identifying the epidemiological patterns and risk factors for endometriosis in Iranian women is essential for improving diagnosis and management strategies, enhancing public health awareness, and ultimately reducing the burden of the disease on individuals and society **(9, 17)**.

Methods

This study is a descriptive studyperformed on endometriosis Iranian women who referred to

ShohadayeTajrish Hospital affiliated to Shahid Beheshti University of Medical Sciences, Tehran, Iran between 2016 and 2022. The study was approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences (IR.SBMU.MSP.REC.1395.362). The sample size of this study was determined using the census method, and 711 patients diagnosed with endometriosis were included in this study.

All patients diagnosed with endometriosis by ultrasound, MRI, or surgery were included in the study. Demographic and clinical data of patients, such as age, body mass index, place of residence, education level, marital status, type of pregnancy, and its outcome were collected by a single interviewer through face-to-face interviews at the outpatient clinic after the diagnosis of endometriosis was confirmed. The data were entered into an Excel spreadsheet and analyzed using statistical methods.

For analyzing used SPSS software version 22, and results were reported as mean ± SD.

Results

Finally, 711 patients enrolled in this study and the average age of patients was 34.69± 7.53 years (min:14 and max:55) and the mean age of onset of disease was 29.97±4.61(min: 16 and max 54). Table 1 shows descriptive characteristics of patients.

Table 1. Epidemiological and Demographical Characters

Characters	Frequency
Marriage status	
Single	151 (21.23%)
Married /relationship	560 (78.76%)
Occupational status	
Unemployed	464(65.26%)
Employed	247 (34.74%)
Educational status	
Illiterate	14 (1.97%)
Diploma	150 (21.10%)
Bachelor	326 (45.85%)
Master and doctorate	221 (31.08%)
BMI	24.88±3.94
<18.5 (underweight)	17.51± 0.65 (n=33, 4.64%)
18.5 to <25 (healthy weight)	22.72± 1.80(n=392, 55.13%)
25.0 to <30 (overweight)	27.65± 1.36(n=229, 32.21%)
30 to < 35 (Class 1)	32.45± 1.25(n=53, 7.45%)
35 to < 40 (Class 2)	39.25± 1.29(n=4, 0.57%)
Place of living	
Capital	309 (43.46%)
County	289 (40.65)
Village	109 (15.33%)
Abroad	4 (0.56%)
Family History	
Yes	60 (8.43%)
No	651 (91.57%)
History of Pregnancy	
Yes	505 (71.02%)
No	206 (28.98%)
History of Infertility	

Characters	Frequency
Yes	126 (17.72%)
No	585 (82.28%)
History of Abortion	
Yes	111 (15.61%)
No	600 (84.39%)
Ectopic pregnancy	
Yes	9 (2.27%)
No	702 (98.73%)
History of death uterine	
Yes	21(2.96%)
No	690(97.04%)

Discussion

Cardoso-1 and colleagues from Argentina, in a retrospective study of 237 patients over 6 years, examined the demographic factors of age [29-39], body mass index [18.5-24.9], and symptoms. The average time to diagnosis was 5 years. Endometrioma and deep infiltrating endometriosis (DIE) had the highest prevalence **(17)**. In study Eisenberg, Weil **(18)** which examined the epidemiology of endometriosis based on data from 2 million participants, the prevalence age was 40-44 with an average age of 34, and infertility was present in 37% of patients **(18)**. Al-Jefout, Alnawaiseh **(19)** from the University of Arabia in 2018 reported a prevalence of endometriosis of 1.5% in a study of 3572 individuals with an average age of 20-29 and irregular and long menstrual periods of equal to or greater than 7 days. Endometriosis was reported more in divorced individuals **(19)**. Parasar, Ozcan and Terry **(20)** study from Boston Women's Hospital in 2017 reported that early menarche, short menstrual periods, higher height to waist ratio, and higher body mass index are associated with a higher incidence of endometriosis. Pregnancy, higher body mass index, and smoking reduce the incidence of the disease **(20)**. Alshammari, Alrajhi **(21)** reported on a retrospective cohort study of 460 patients who presented to a university hospital over 5 years, with an average age of 31.9 years and a peak incidence of 35–45 years. The incidence was less in pregnant patients and those who had undergone cesarean section **(21)**. In their literature review, Smolarz, Czerw **(22)** found that 10-15% of women in the peak age range of 25-45 have endometriosis, and 7% have a family history of the disease. It is diagnosed in 20% of women during tubal ligation and in 17% after oophorectomy surgery. It has the highest prevalence in Asian women and the lowest in Black women **(22-24)**.

Conclusion

Endometriosis patients' life in many aspects, including their job, lifestyle, education, marital status, pregnancy and childbirth and health care is affected.

Acknowledgments

None.

Authors' Contribution

Study concept and design: BN and SN; Drafting of the manuscript: BN and SN; Critical revision of the manuscript: BN and MA; Statistical analysis: SN. All the authors have given final approval of the version to be published.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial or non-financial interest in the subject or materials discussed in the manuscript.

Data Reproducibility

The data set presented in the study is available on request from the corresponding author during submission or after its publication.

Ethical Approval

This study was approved by the ethical committee of Shahid Beheshti University of Medical Sciences, Tehran, Iran.

Funding/Support

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Informed Consent

All participants filled out and signed an informed consent form to participate in the study.

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How to Cite This Article:

Nouri, B., Naz Agili, S., Arab, M. Endometriosis: A SixYear Epidemiological Study. J Obstet Gynecol Cancer Res. 2024;9(3):335-9.

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