Assessing The Level of Awareness of Endometriosis among Pakistani Females: A Cross-Sectional Study

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Abstract- BACKGROUND: Endometriosis is a painful disease identified by unusual tissue growth external to the uterine cavity. Common symptoms include excessive, heavy menstrual bleeding, painful sexual intercourse, short menstrual cycle, and dyspareunia.

OBJECTIVE: This study assesses the level of awareness of endometriosis among Pakistani women.

MATERIAL AND METHODS: A cross-sectional study was conducted among university-going students in multiple disciplines. The study sample size was 325, calculated using Cochran's formula with 95% confidence and a 4% margin of error. Convenience sampling was used to recruit adult female residents of Pakistan aged 18 or older who were willing to participate voluntarily.

RESULT: Out of 325 participants, 92% were unmarried, while only 8 % were married females. 4.3% of the total participants reported having endometriosis. 95.7 % were reported to have no diagnosis related to endometriosis. 4.6% reported having a family member diagnosed with endometriosis, while the majority, 95.4%, denied any family history. Among those who had a family history of endometriosis, 2.7% reported their immediate family members being diagnosed with this condition. Of the 325 participants, 13.5% rated their knowledge as very poor, and 20.0% rated their understanding as poor. The largest group, 42.2%, rated their knowledge as fair.

CONCLUSION: This study's findings reveal fundamental gaps in Pakistani women's understanding and awareness of endometriosis. By offering education and awareness programs on these aspects, it is possible to increase awareness, focus efforts on early diagnosis, improve management outcomes, and enhance the quality of life for women with endometriosis.

Index Terms- Dysmenorrhea, Endometriosis, Young adults, Females

INTRODUCTION

According to the World Health Organization (WHO), endometriosis is a chronic, debilitating condition affecting 10% of the total population across the globe, which is estimated to be around 190 million women of reproductive age (1,2). In Asia, it was reported to be prevalent among 15% of women (3). A study conducted in Pakistan assessing the prevalence of this condition found that 55% of the population was affected (4). Endometriosis is a painful disease identified by unusual tissue growth outside the uterine cavity (5,5,7). The WHO classifies endometriosis into superficial and deep categories. The superficial classification encompasses involvement of pelvic lining tissues, ovaries, and fallopian tubes, whereas the deep classification affects the recto-vaginal septum, bladder, and bowel (2,8). In Pakistan, endometriosis is a prevailing health concern among women and occurs between the ages of 21 and 30 years; however, it is not given the necessary consideration (8). Primary symptoms of endometriosis are dysmenorrhea, back pain, and chronic pelvic pain (CPP) (9,10). Common symptoms include excessive heavy menstrual bleeding, painful sexual intercourse (9,11), fragments of endometrial lining during menses, short interval menstrual cycle (9-12), and dyspareunia (8). The most devastating consequence that can affect a female is infertility (8,12). Also, symptoms like abdominal bloating, weak immune response, and GIT problems showed a strong association with endometriosis (10). One study revealed that dysmenorrhea is the symptom that typically occurs, and it generally affects mental health, promoting psychological issues such as depression or anxiety, and physical exhaustion in 71% (13). Another study revealed that the extent of dysmenorrhea in university-going females was found to be 64.7% (14). 70-93% of the adolescents suffering from dysmenorrhea experience poor performance in school, 20-40% miss school due to worse pain, and 40% are not able to pay attention and focus properly (15, 16). The studies focusing on menstrual symptoms reported that pain and cramps are common features in adolescents, while many experience symptoms like mental or behavioral changes before the menstrual cycle (7, 17). Some non-modifiable risk factors of endometriosis include the menstrual cycle duration, early menarche, family history, and certain genetic variants. Modifiable factors that may affect the condition include smoking, body mass index, low parity, physical inactivity, and exposure to heavy metals and pesticides (3).

It is assumed that endometriosis affects approximately 10–15% of the population of women of childbearing age and 2–5% of women after menopause, which amounts to 176 million women in the whole world. (7, 9, 11)

The diagnosis of the disease is based on accurate history and assessment, followed by the use of various imaging techniques (20), most commonly ultrasound, MRI, and laparoscopy (8). Laparoscopic imaging has been considered the gold standard for diagnostic purposes, with histological confirmation, according to the European Society of Human Reproduction and Embryology (ESHRE) (1). The medical agencies reported that endometriosis is a condition that cannot be eliminated, as the etiology is unknown, but the symptoms and pain intensities are treatable. Management strategies for endometriosis can be hormonal therapy, NSAIDs, aerobic activity, and dietary modifications (12). As suggested by the evidence, patients with endometriosis also avail of psychological therapies like progressive muscle relaxation (PMR) training, mindfulness treatment, yoga, and psychological training, which showed improvements in their pain level (21). Physiotherapy offers a variety of options and has the added benefit that patients may be able to perform it independently at times. Stretching, electrotherapy, yoga, isometric exercises, manual therapy targeting the pelvic and lumbar regions, progressive relaxation exercises (PRE), and self-relaxation are among the physical therapy techniques that may positively affect the management of dysmenorrhea symptoms. The study also stated that these treatments could be useful as an alternative treatment regimen for the management of symptoms in women suffering from endometriosis. (22,23)

Endometriosis has a significant impact on women's health, but being a complex disease, it has been majorly stigmatized and misunderstood. This study aims to evaluate the awareness of endometriosis among Pakistani females. This study will enhance understanding of the disease and encourage the target population to consult a specialist if they experience symptoms. This is considered essential, as it can prompt early referral and the identification of findings, increase awareness, reduce health-related problems, and improve patient outcomes. In conclusion, addressing the knowledge gap regarding endometriosis in Pakistan is not merely an academic purpose; it is also an essential step that will lead to the enhancement of women's health and well-being, the establishment of a more informed society, and the provision of the necessary support and treatment for those affected by this condition.

MATERIAL AND METHOD:

A cross-sectional survey was conducted over six months among adult women residing in Pakistan. The study comprised a total sample of 325 participants, recruited through both online and in-person approaches. Online data was collected via a Google Form distributed through various social media platforms. At the same time, physical questionnaires were made available during university events and classroom sessions to enhance reach and participation across diverse educational backgrounds.

Only participants who met the inclusion criteria were included in the study. Eligible participants were adult females aged 18 years or older, university-going, residing in Pakistan, and willing to participate voluntarily. Females below 18 years of age, non-residents of Pakistan, and those with severe mental or physical health conditions that could interfere with their participation were excluded from the study. These exclusion parameters were set to minimize potential confounding variables that might independently affect awareness levels, such as cognitive impairments or lack of accessibility.

A convenience sampling technique was used to recruit participants. The sample size of 325 was calculated using the NCSS software based on Cochran's formula, with a z-score of 1.96, a confidence level of 95%, a margin of error of 4%, and a sample proportion (p) of 83.9%, informed by a prior study conducted among Polish women (41).

Data were collected using a self-administered questionnaire, developed following an extensive literature review to ensure content relevance and clarity. The questionnaire comprised 11 items, divided into three primary sections: socio-demographic details (age, marital status); family history of endometriosis (personal diagnosis or a diagnosis in first-degree relatives); and an awareness assessment. The awareness section assessed prior knowledge of endometriosis, understanding of its causes, symptoms, diagnosis, and treatment options, and a self-rated level of knowledge.

To ensure accessibility and convenience for participants, both web-based and print versions of the questionnaire were provided. This mixed-mode approach helped capture data from a broader population of university-going women despite varying availability and technological access.

The data were collected after obtaining informed consent from all participants, following approval of the study by the ASC (PT-004*/08/2024)*. A brief preliminary screening was included in the questionnaire to confirm eligibility against the inclusion criteria. Participation was voluntary, ensuring confidentiality throughout the process.

All collected data were analyzed using SPSS version 26.0. Descriptive statistics were used to report frequencies and percentages for demographic variables, including age, marital status, and family history. Additional variables, including awareness, symptom recognition, and understanding of endometriosis-related aspects, were also assessed to determine the overall awareness levels among participants. This analysis aimed to identify knowledge gaps and inform potential strategies to increase awareness of endometriosis among Pakistani women.

RESULT

This cross-sectional study was conducted among a diverse group of female participants to assess Pakistani females' awareness and knowledge of endometriosis. Out of 325 participants, 92% were unmarried, while only 8 % were married females. It was revealed that research dominantly involved younger, unmarried individuals. The marital status of females is a significant factor, as it reflects their level of perception regarding awareness and experiences of endometriosis.

Table 1: Demographic Information of participants (N=325)		
Variables	**N**	**%**
Age, mean (SD)	22.7815 (3.58387)	
Age categories		
<=16.00	1	0.3
17.00 -19.67	42	12.9
19.68 -23.33	178	54.8
23.34 -27.00	86	26.5
27.01 -30.67	12	3.7
34.35-38.00	2	0.6
38.01-41.67	3	0.9
45.35+	1	0.3
Total	325	100.0
Marital status		
Married	26	8.0
Unmarried	299	92.0

Table I: Demographic information of participants

Among participants, 4.3% reported having endometriosis. 95.7 % were reported to have no diagnosis related to endometriosis. 4.6% of the total study participants reported having a family member diagnosed with endometriosis, while the majority, 95.4%, denied any family history. Among those who had a family history of endometriosis, 2.7% reported their immediate family members being diagnosed with this condition.

Table II: Family History of Endometriosis (N=325)		
Variables	**N**	**%**
1: Do you have Endometriosis?		
Yes	14	4.3
No	311	95.7
2: Do you have any family members (mother, sister, aunt) diagnosed with endometriosis?		
Yes	15	4.6
No	310	95.4
3: If yes, specify the relationship:		
None	308	94.8
Mother	6	1.8
Sister	3	0.9
Aunt	3	0.9
Others	5	1.5
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Table II: Family History of Endometriosis

Table 3: Assessing the level of Awareness regarding Endometriosis

Variables	N	%
1. Have you heard about Endometriosis		
Yes	277	69.8
No	98	30.2
2. Causes of Endometriosis		
Genetic factor	101	31.1
Hormonal factor	237	72.9
Environmental factor	66	20.3
I do not know	53	16.3
3. Symptoms of Endometriosis		
Pelvic pain	193	59.4
Heavy menstrual bleeding	195	60.0
Infertility	109	33.5
I do not know	45	13.8
4. Endometriosis is typically diagnosed by		
Blood test	22	6.8
Hormonal profile	78	24
Ultrasound	125	38.5
Laparoscopy	68	20.9
I do not know	76	23.4
5. Treatments of Endometriosis		
Pain relief medication	122	37.5
Lifestyle modification	145	44.6
Regular exercise	112	34.5
Hormonal therapy	157	48.3
Surgery	103	31.7
I do not know	58	17.8

Table III: Assessing the level of Awareness regarding Endometriosis

69.8% of respondents were previously aware of the condition, while 30.2% were uninformed about it. Hormonal factors were identified as the cause by 72.4%, genetic factors by 31.1%, and environmental factors by 20.3%, while 16.3% did not know the cause of endometriosis. 60.0% of females reported heavy menstrual bleeding, 59.4% experienced commonly associated symptoms related to endometriosis, 33.5% were facing infertility issues, and 13.8% were not familiar with the symptoms. According to the participants' knowledge, the most common diagnostic methods were ultrasound (38.5%) and hormonal profile testing (24%). A small segment of participants (20.9%) believed that laparoscopy and blood tests could be beneficial; 6.8% held the same view. Due to uncertainty about the condition, 23.4% of participants were unsure about the diagnostic methods. While assessing the transparency of participants about the treatment options, 48.3% of them recognized the role of hormonal therapy, lifestyle modifications 44.6%, and pain relief medications 37.5% in coping with endometriosis. Surgery was also considered as a treatment option by 31.7% of females, while 17.8% did not know the treatment options provided. Overall, knowledge of endometriosis varied among participants. Of the 325 participants, 13.5% rated their knowledge as very poor, and 20.0% rated their understanding as poor.

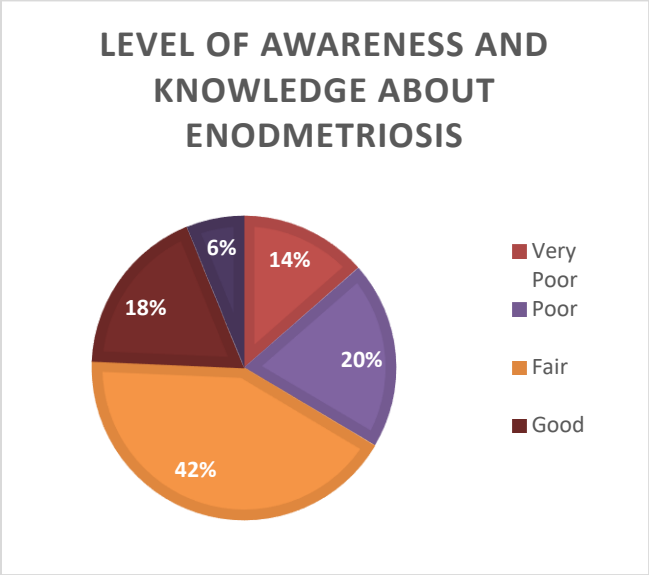

Figure I: Assessment level of knowledge and awareness of endometriosis

The largest group, 42.2%, rated their knowledge as fair, suggesting that although awareness of the condition is widespread, significant knowledge gaps remain. The percentage distribution of participants about 'the level of knowledge and awareness of endometriosis' is represented.

CONCLUSION

This research finding of this study highlights some of the core deficits in Pakistani women's endometriosis knowledge and awareness. By providing education and awareness programs on these facets, it is feasible to increase awareness, reduce delays in diagnosing the condition in its early stages, and improve management outcomes and quality of life for women with endometriosis. Such efforts are crucial when addressing endometriosis for a broader social cause, as well as to minimize associated stigma and ensure that endometriosis receives the recognition it deserves as a health issue of concern to society.

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