The Comparison of Chronic Pelvic Pain, Dysmenorrhea, Dyspareunia, Dysuria, and Dyschezia Intensity in Patients with Endometriosis Stage

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ABSTRACTS

Women with endometriosis often experience symptoms of pain and infertility. Endometriosis was typically confirmed only by laparoscopic examination, causing delayed identification and continued symptom progression. This phenomenon can lead to impair the quality of life. This study aimed to compare the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia between women who diagnosed with stage I/II of endometriosis and those with stage III/IV of endometriosis. This is a cross-sectional study, including 64 subjects selected by purposive sampling technique. The subjects were grouped into 32 women with stage I/II endometriosis and 32 women with stage III/IV endometriosis, based on the American Society for Reproductive Medicine (ASRM) endometriosis staging criteria. The Numeric Pain Rating Scale (NRS) and a questionnaire are used to evaluate the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia. Data were analyzed with SPSS 25. The result demonstrated that there is no significant relationship between the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia and the stage of endometriosis with P-values >0.05. In conclusions, the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia cannot be applied to diagnosing either the severity or stages of endometriosis.

Keywords: Chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, dyschezia, endometriosis stage

Introduction

Endometriosis is one of the most common gynecological problems among women, often related to pain and infertility (1). This condition appears when the cells form abnormal tissue resembling endometrium, including glandular or stromal cells, that grow outside the pelvic cavity or in other inappropriate locations (2–4). Symptoms of endometriosis include chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, dyschezia, and subfertility, though not all women will experience all these symptoms. These symptoms can significantly impact health-related quality of life (5). Previous studies have reported that 25% of women with endometriosis have dysmenorrhea, 24% have dysuria symptoms, 11% experience dyspareunia symptoms, 2% experience bleeding or dyschezia, and 16% experience pelvic pain (6). These pains can limit daily activities, decrease the quality of life, and make the treatment of endometriosis crucial (7). Endometriosis remains undiagnosed in many women. It leads to the symptoms persisting and worsening, disrupting their quality of life (8). However, pain-related endometriosis, like dysmenorrhea, can also occur in women without this condition. Laparoscopic examination remains the primary method for diagnosing most cases of endometriosis (9).

The prevalence of endometriosis in the female reproductive population is approximately 6-8%, and generally, it is estimated that 1 in 10 women experience endometriosis (10,11). Pain-related endometriosis is due to a combination of visceral and somatic pain, including the number, size, and location of endometriotic implants, plaques, endometrium, adhesions, and leading to varying experiences among patients (9,12).

Several methods exist for assessing the pain caused by endometriosis. The Numeric Rating Scale (NRS) is one of these methods that can be

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used for various types of pain, such as chronic pelvic pain, dysmenorrhea, dyspareunia, dyschezia, and dysuria (13).

Previous research has indicated no correlation between the severity of pain in endometriosis and its classification by the American Society for Reproductive Medicine (ASRM) (14). Research on the relationship between the type of pain and the stage of endometriosis found no significant correlation (15). However, other studies have suggested that women experiencing severe dysmenorrhea tend to have severe endometriosis. The study also compared the pain intensity of endometriosis patients in stages I/II and III/IV. It found that only the type of dysmenorrhea pain had a significant difference (16). Therefore, researchers are interested in investigating differences in the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia in endometriosis patients of stages I/II and III/IV.

Material and Methods

Research Design: This was an analytical observational study with a cross-sectional design. The study was conducted at Dr. Moewardi General Hospital from July to October 2020.

Research Subjects: A non-probability purposive sampling technique was used in this study. The sample size was determined using a formula with parameters Z=1.65, d=0.1, and p=0.1, resulting in 32 subjects for each group. Thus, 64 subjects were included in this study, categorised as 32 women diagnosed with stage I/II endometriosis and 32 women with stage III/IV endometriosis. Inclusion criteria are women clinically diagnosed with endometriosis after undergoing laparoscopy and reproductive-aged women (15 - 49 years) who provided informed consent. Meanwhile, the exclusion criteria are women diagnosed with other conditions during laparoscopy, such as pelvic inflammatory disease (PID) or Polycystic Ovary Syndrome (PCOS).

Classification of Endometriosis: Endometriosis stages are classified based on the ASRM four-stage systems as follows: stages I (minimal), II (mild), III (moderate), and IV (severe). This classification accounts for the adhesion and implantation values of the lesions, factoring in their appearance, size, location, depth of invasion, and adhesion (17). Moreover, the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia was evaluated by using the NRS and questionnaires.

Statistical Analysis: Data were analysed by bivariate using the Chi-square test to compare the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia between women diagnosed with stage I/II of endometriosis and those with stage III/IV of endometriosis using the Statistical Product and Service Solution (SPSS) 25 software. A p-value of <0.05 was considered statistically significant.

Ethical Clearance: Ethical clearance for this study was granted by the Health Research Ethics Committee of the Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Jawa Tengah, Indonesia, under approval number 101/ UN27.06.6.1/ KEPK/ 2020, dated July 27, 2020.

Results

Data were collected from patients who complained about sub-fertility attending the outpatient clinic at Dr Moewardi General Hospital from July to October 2020. A total of 64 women were categorized as 32 women diagnosed with stage I/II endometriosis, and 32 women with stage III/IV endometriosis were included in the analytic population. 80% of the research subjects were aged ≥37 years old. Almost all participating subjects had a high school or college education (98,4%). More subjects experienced milder pain than severe pain in all variables, respectively. The complete distribution of the characteristics of study subjects can be seen in Table 1.

Table 2 shows that there are no significant analysis results on variables of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia. P-values >0.05 showed on all variables for chronic pelvic pain (0.412), dysmenorrhea (0.316), dyspareunia (0.157), dysuria (0.740), and dyschezia (0.740), respectively. Women with endometriosis experience chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia with a mild intensity more than severe intensity.

Discussion

The pathogenesis of endometriosis remains enigmatic (18). Studies have shown that women with endometriosis are ten times more likely to experience dysmenorrhea, twice as likely to have dyspareunia, seven times more likely to have dyschezia, and 13 times more likely to experience pelvic pain (6,19). The primary mechanism of pelvic pain involves peripheral nerve pathways, the spinal cord, and specific brain regions (20).

Table 1: Characteristics of Research Subjects Showed Age, Education, Age of Menarche, Stage, Chronic Pelvic Pain, Dysmenorrhea, Dyspareunia, Dysuria, and Dyschezia

Characteristics	Frequency	Percentage (%)
Age (years)		
<37	51	80.0
≥37	13	20.0
Education		
< High School	1	1.6
≥ High School/ University	63	98.4
Age of Menarche (years)		
≤11	7	10.9
>11	57	89.1
Stage		
I/II	32	50.0
III/IV	32	50.0
Chronic Pelvic Pain		
Mild Pain	45	70.4
Severe Pain	19	29.6
Dysmenorrhea		
Mild Pain	34	53.1
Severe Pain	30	46.9
Dyspareunia		
Mild Pain	47	73.4
Severe Pain	17	26.6
Dysuria		
Mild Pain	53	82.8
Severe Pain	11	17.2
Dyschezia		
Mild Pain	53	82.8
Severe Pain	11	17.2

Moreover, neuropathic pain or neuroinflammation is considered a type of pain associated with endometriosis (21).

Increasing sympathetic nervous system activity can triggered by pain, considered a stress source, inducing changes in neuromediators, hormonal secretions, and neuroendocrine functions (22). The intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia in endometriosis is attributed to elevated levels of prostaglandins, increased expression of nerve growth factors, an increased density of nerve fibres, angiogenesis, and changes in uterine innervation (23). Understanding these complex processes and their interplay may prove crucial for advancing our knowledge of endometriosis pathogenesis and improving therapeutic strategies for managing pain associated with this condition.

Results demonstrated that there is no significant difference between the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia with the endometriosis stage following laparoscopy. This finding aligns with previous research. Schilep et al. (15) reported no significant relationship between this type of pain and the stage of endometriosis. Similarly, the study conducted by Vercellini et al. (14) found no association between the severity of endometriosis pain and the stage according to the ASRM classification. However, research by Apostolopoulos et al. (16) reported that only the intensity of dysmenorrhea showed a significant difference between stages I/II and III/IV, indicating that women with advanced endometriosis are more likely to experience severe dysmenorrhea. Advanced endometriosis (stage

Table 2: Results of Bivariate Analysis of Differences In Chronic Pelvic Pain, Dysmenorrhea, Dyspareunia, Dysuria, and Dyschezia With Endometriosis Stage

Characteristics	Stage I/II		Stage III/IV		p
	n	%	n	%	
Chronic Pelvic Pain					
Mild Pain	21	46.7	24	53.3	0.412
Severe Pain	11	57.9	8	42.1	
Dysmenorrhea					
Mild Pain	19	55.9	15	44.1	0.316
Severe Pain	13	43.3	17	56.7	
Dyspareunia					
Mild Pain	26	55.3	21	44.7	0.157
Severe Pain	6	35.3	11	64.7	
Dysuria					
Mild Pain	26	49.1	27	50.9	0.740
Severe Pain	6	54.5	5	45.4	
Dyschezia					
Mild Pain	27	50.9	26	49.1	0.740
Severe Pain	5	45.4	6	54.5	

III/IV) also correlates positively with reduced fertility or sub-fertility rates (1).

The inconsistent relationship between pain and endometriosis stage is likely due to the intensity of the pain being affected by the interaction between endometriotic lesions and sensory nerve fibres rather than just the type and extent of implants alone (15). However, it is essential to note that this study's limitation was not examining hormonal markers such as prostaglandin hormones, which can also influence pain.

The clinical implication of this study is that there is no association between the intensity of pain and the endometriosis stage. Further research and exploration of hormonal markers about pain may offer valuable insights for understanding the pain mechanisms in endometriosis.

In conclusion, the intensity of chronic pelvic pain, dysmenorrhea, dyspareunia, dysuria, and dyschezia cannot be applied to diagnosing either the severity or stages of endometriosis.

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