

Improved quality of life (EHP-30) in patients with endometriosis after surgical treatment

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SUMMARY

OBJECTIVE: This study aimed to evaluate the quality of life of patients with endometriosis before and after surgical treatment.

METHODS: An observational, longitudinal, and prospective study was conducted with 102 women with pelvic pain and endometriosis that was unimproved by clinical treatment and indicated for surgical treatment. The patients' quality of life was assessed using the 30-item Endometriosis Health Profile (EHP-30) questionnaire before and 3 and 6 months after surgery. The statistical tests were analyzed using the Statistical Package for Social Sciences version 17.0, and the Friedman test was used.

RESULTS: There was a reduction in EHP-30 scores 3 and 6 months after surgery compared to before surgery, as well as 6 months after surgery compared to 3 months after surgery, in the central questionnaire (PART 1) and in Sections A, B, C, E, and F ($p < 0.0001$). For Section D, there was a reduction in scores 6 months after surgery compared to before surgery ($p < 0.0001$).

CONCLUSION: Surgical treatment of endometriosis improves quality of life in several areas assessed by the EHP-30 questionnaire.

KEYWORDS: Endometriosis. Surgical procedure. Quality of life.

INTRODUCTION

Endometriosis is a common benign gynecological disorder defined by the presence of fibrotic lesions outside the uterine cavity that are morphologically similar to the endometrium, most commonly in the organs of the female pelvis^{1,2}. The clinical presentation of this pathology is mainly characterized by pelvic pain and infertility; its etiology is undefined, and its overall incidence is approximately 10% in women of reproductive age^{3,4}.

The delay in the diagnosis of endometriosis leads to chronic pelvic pain, centralization of pain, anxiety, and depression, with consequent suffering and loss of quality of life as the disease progresses^{5,6}. To assess the quality of life of patients with endometriosis, three instruments have been developed to date: the *Endometriosis Health Profile Questionnaire* (EHP-30) developed by Jones et al.; the instrument developed by Colwell et al. 1998; and the instrument developed by Bodner et al. in 1997^{7,8}. Of these, only the EHP-30 includes items that were generated directly from interviews with patients. The relevance of this method for the construction of its items arises from literature findings that indicate that patients' evaluations of their

health and well-being differ from those performed by health professionals^{7,8}.

This study aimed to evaluate in the most diverse ways the quality of life of women with endometriosis that was unsuccessfully clinically managed and who underwent surgical treatment.

METHODS

This is a longitudinal and prospective analytical study of the evolution of the quality of life of women with endometriosis who underwent surgical treatment between September 2020 and May 2022.

The inclusion criteria were as follows: patients from the chronic pelvic pain and endometriosis outpatient clinic of the São Domingos Hospital, São Luís, Maranhão, Brazil, who voluntarily sought treatment; had a clinical picture and imaging test results compatible with endometriosis of various forms; were clinically treated for more than 3 months with no improvement in pain; had indications for surgical treatment via laparoscopy with intraoperative confirmation and pathological anatomy

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consistent with endometriosis; and agreed to participate in the study and signed an informed consent form.

The following patients were excluded from the study: those with suspected endometriosis alone or with infertility without pain; those with suspected endometriosis with or without pelvic pain that was not confirmed during laparoscopy and/or histological analysis; those who did not return for outpatient follow-up; those with previous or ongoing neoplastic pathologies; those with incomplete surgeries, major uncontrolled psychiatric disorders, or surgical or spontaneous menopause; those who underwent robotic surgeries; and those who refused to participate in the study.

The validated Portuguese-language version of the EHP-30 questionnaire was administered on the day of admission for surgery and 3 and 6 months after the surgical procedure, at the outpatient level⁸.

The EHP-30 consists of a central questionnaire comprising 30 items that evaluate 5 dimensions (pain, control and powerlessness, emotional well-being, social support, and self-image) and a modular questionnaire comprising 23 items distributed across 6 scales (sexual relations, work, medical profession, infertility, relationship with children, and treatment)⁸. Each scale yields a score from 0 to 100, and lower scores indicate better quality of life⁷. The prospective examination of the patients' quality of life entailed three applications of the questionnaire: during the preoperative period and 3 and 6 months after surgery.

The surgical procedures entailed the removal of all endometriotic lesions, according to Koninckx et al.⁹, and the Working Group of the ESGE, ESHRE, and WES et al.¹⁰. The endometriomas were treated according to the Working Group of the ESGE, ESHRE, and WES et al.¹¹.

The data were organized using Microsoft Excel 2010[®] software for the preparation of databases, tables, and graphs. The statistical tests were analyzed using the Statistical Package for Social Sciences (SPSS) version 17.0. Absolute and relative frequency measurements were used to quantify the numerical and categorical variables. The Kolmogorov-Smirnov test was used to assess the normality of the EHP-30 questionnaire data. Since the distribution of the data was nonnormal, nonparametric data are expressed as the median (25th–75th percentile). For the comparisons among the different time points (before and 3 and 6 months after surgery), the Friedman test was used, followed by the Dunn posttest. Spearman's correlation was used to assess the correlation between the degree of endometriosis and the EHP-30 scores.

This study was evaluated and approved by the Research Ethics Committee of São Domingos Hospital through the Brazil Platform, with the Research Ethics Appraisal Certificate (CAAE) number 11808919.2.0000.5085, process approval number 3.334.498.

RESULTS

The final sample consisted of 102 patients with a mean age of 35.96 ± 6.309 years of whom 34 (33.3%) were single and 68 (66.6%) were married. Regarding color, 18 (17.6%) patients were white, 70 (68.6%) were brown, and 14 (13.8%) were black. Regarding the classification of endometriosis according to the rASRM, 9 (8.8%) patients had minimal endometriosis, 18 (17.6%) had mild endometriosis, 35 (34.3%) had moderate endometriosis, and 40 (39.3%) had severe endometriosis (Table 1).

The types of surgery that the patients underwent were as follows: 21 (20.5%) underwent endometriosis, 30 (29.5%) underwent endometriosis+myomectomy, 23 (22.6%) underwent endometriosis+hysterectomy, 23 (22.5%) underwent endometriosis+rectosigmoidectomy+hysterectomy, and 5 (4.9%) underwent endometriosis+myomectomy+rectosigmoidectomy (Table 1).

Table 1. Characteristics of patients before and 3 and 6 months after laparoscopic surgical treatment of all forms of endometriosis.

Variables	No. (%)	Standard deviation
All cases	102 (100%)	-
Age	-	35.96±6.309
Marital status		
Single	34 (33.3%)	-
Married	68 (66.6%)	-
Race		
White	18 (17.6%)	
Brown	70 (68.6%)	
Black	18 (17.6%)	
rASRM classification of endometriosis		
Stage I (minimum)	9 (8.8%)	
Stage II (mild)	18 (17.6%)	
Stage III (moderate)	35 (34.3%)	
Stage IV (severe)	40 (39.3%)	
Surgeries performed		
Edt alone	21 (20.5%)	
Edt+mio	30 (29.5%)	
Edt+hta	23 (22.6%)	
Edt+hta+rectosig	23 (22.6%)	
Edt+mio+rectosig	5 (4.9%)	

rASRM: revised endometriosis classification of the American Society of Reproductive Medicine; Edt: endometriosis; mio: laparoscopic myomectomy; hta: total hysterectomy and bilateral laparoscopic salpingectomy; rectosig: laparoscopic rectal, segmental, or shaving rectosigmoidectomy.

The EHP-30 data are shown in Table 2. There were reductions in the scores 3 and 6 months after surgery compared to presurgery, and at 6 months after surgery compared to 3 months after surgery, on the questionnaire (Part 1) and on Sections A, B, C, E, and F ($p < 0.0001$). For Section D, there was a reduction 6 months after surgery compared to before surgery ($p < 0.0001$).

There was no moderate or strong correlation between the degree of endometriosis and the EHP-30 quality of life scores before surgery and 3 and 6 months after surgical treatment (Spearman's correlation).

DISCUSSION

Due to the lengthy diagnostic process and consequent loss of quality of life for women with endometriosis, it is necessary to evaluate the quality of life of patients with symptomatic endometriosis along several parameters to improve their prognosis and offer both medical and multidisciplinary care^{3,12,13}. As the results of this study show, in addition to providing a good prognosis for clinical symptomatology, surgical management led to a significant improvement in the quality of life 3 and 6 months after surgical treatment of endometriosis for the women who participated in this study.

Most of the participants were between 30 and 40 years old, reflecting a delay in diagnosis and treatment similar to what has been reported worldwide⁶. The participants were predominantly brown, compatible with the mixed ethnicities of the region where the study was conducted (the extreme north of Brazil), and the most common marital status was married.

Regarding the classification of endometriosis according to the rASRM, approximately 73.6% of the cases were moderate and severe, showing that the more advanced forms of this pathology are difficult to control with clinical treatment;

this finding is reinforced by the fact that most of the patients required more comprehensive surgeries, such as myomectomies, hysterectomies, or rectosigmoidectomies.

Next, we will analyze other endometriosis studies that assessed quality of life with the EHP-30 questionnaire. Our study did not aim to compare clinical and surgical treatments, as the failure of clinical treatment was an inclusion criterion; however, it seems that both surgery and clinical treatment are valuable options to improve the harmful impact of dysmenorrhea associated with endometriosis¹⁴.

Among the prospective studies that evaluated the treatment of intestinal endometriosis with surgeries performed by a multidisciplinary team experienced with the management of endometriosis, the results indicated significant improvement in quality of life 1 year after the surgical procedure, with no difference between the types of intestinal approach¹⁵. In a study that included only patients with deep endometriosis with or without intestinal resection, both groups showed a significant improvement in quality of life after surgery^{16,17}.

Furthermore, in a prospective study that evaluated quality of life in 22 patients with deep endometriosis who underwent surgical treatment, the EHP-30 results showed significant improvement for the items pain, control and powerlessness, emotional well-being, social relationships, sexual relations, and relationships with medical providers, but no significant changes in self-image, work, or relationships with the children^{18,19}. Although both that study and our study were prospective and had equivalent study durations, our study had a larger sample and included patients with all forms of endometriosis, not just deep endometriosis, and we observed significant improvement in all areas except relations with medical providers; in this area, improvement was noted only between the preoperative scores and the scores 6 months after surgery.

Table 2. Evaluation of quality of life (EHP-30) in patients before and 3 and 6 months after laparoscopic surgical treatment of all forms of endometriosis.

EHP-30	Before surgery	3 months after surgery	6 months after surgery	p-value
Part 1	46.67 (29.16–46.67) ^{ab}	16.25 (8.33–30) ^{ac}	7.5 (3.198–15.83) ^{bc}	<0.0001
Section A	35 (10–60) ^{ab}	10 (0–25) ^{ac}	0 (0–10) ^{bc}	<0.0001
Section B	50 (0–62.50) ^{ab}	0 (0–25) ^{ac}	0 (0–12.50) ^{bc}	<0.0001
Section C	50 (20–75) ^{ab}	15 (0–50) ^{ac}	7.5 (0–15) ^{bc}	<0.0001
Section D	0 (0–0) ^b	0 (0–0)	0 (0–0) ^b	<0.0001
Section E	41.66 (0–66.66) ^{ab}	16.66 (0–25) ^{ac}	0 (0–8.33) ^{bc}	<0.0001
Section F	50 (25–75) ^{ab}	25 (6.25–56.25) ^{ac}	6.25 (0–25) ^{bc}	<0.0001

EHP-30: 30-item Endometriosis Health Profile; Friedman test, followed by the Dunn posttest. ^aSignificant difference according to Dunn's posttest before surgery and 3 months after surgery; ^bsignificant difference according to Dunn's posttest before surgery and 6 months after surgery; ^csignificant difference according to Dunn's posttest between 3 months after surgery and 6 months after surgery.

Studies have shown that removal of the unaffected uterus does not seem to improve the quality of life of patients with endometriosis^{18,20}. A study that evaluated the quality of life of 61 patients who underwent surgical treatment that included the removal of the foci of endometriosis, hysterectomy, and oophorectomy compared with that of a group without hysterectomy and ovarian preservation found significant improvement on all 5 scales of the EHP-30 at 4 weeks postsurgery, and this improvement persisted for up to 6.8 years²⁰. Although this was a longer observation period than that of our study, the results are in agreement with our findings.

In a multicenter, randomized clinical trial, we investigated the differences between the conventional robotic and laparoscopic pathways in the surgical treatment of endometriosis. Patients with all forms of endometriosis were evaluated. One of the comparison variables was quality of life, measured with the EHP-30 questionnaire; we found no difference between these two pathways, and both groups showed improved quality of life⁵. In the present study, our sample included patients with all forms of endometriosis, and the results were similar, but we did not include patients who underwent robotic surgery.

A literature review showed that endometriosis impairs quality of life, especially in the domains of pain and psychological and social functioning, and that therapies alleviate symptoms and improve the quality of life of these patients, but further research is needed to evaluate the impact of endometriosis on patients' lives²¹. In this study, we confirmed that surgical treatment improves the quality of life of patients with surgical indications for the treatment of endometriosis that has not been relieved by clinical treatment. The cases were not separated by the type of surgical intervention performed. All patients who underwent the removal of peritoneal, ovarian, or deep

endometriosis with or without hysterectomy or rectal, segmental, or shaving rectosigmoidectomy were included, providing an overview of all patients who require surgical therapy.

Based on the results obtained and analyzed, surgery offers a good prognosis for improving the quality of life of women with endometriosis, and it is justified to relieve the suffering, limitations of daily activities, and anxiety and depression that affect patients with endometriosis⁶.

In conclusion, when indicated for women with endometriosis, surgery generally improves their quality of life in several areas analyzed by the EHP-30 questionnaire.

AUTHORS' CONTRIBUTIONS

JNN: Conceptualization, Formal Analysis, Funding acquisition, Investigation, Methodology. **VGM:** Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **LCSL:** Conceptualization. **CMBO:** Conceptualization, Data curation, Project administration, Resources, Software, Supervision, Validation, Writing – original draft, Writing – review & editing. **MVLRC:** Conceptualization. **LMRSG:** Data curation, Project administration, Resources, Software, Supervision, Validation. **GIMF:** Data curation, Project administration, Resources, Software, Supervision, Validation. **LCS:** Data curation, Project administration, Resources, Software, Supervision, Validation. **PCL:** Data curation, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. **ECRM:** Formal Analysis, Funding acquisition, Investigation, Methodology, Supervision.

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