



Full length article



Deep infiltrating endometriosis-related quality of life after laparoscopic excision: A prospective cohort study from Latin America using validated questionnaires

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ABSTRACT

Introduction: Deep infiltrating endometriosis (DIE) is associated with substantial impairment in health-related quality of life (HRQoL), affecting pain, emotional well-being, sexual functioning, and daily activities. Previous studies have shown that laparoscopic surgical excision may improve HRQoL in women with symptomatic DIE. However, evidence simultaneously assessing disease-specific and generic HRQoL using minimal clinically important differences (MCID) -based interpretation in Latin American women with DIE remains limited. We therefore aimed to evaluate changes in HRQoL at 6 and 12 months after laparoscopic excision of DIE in two high-volume Latin American referral centers, using the Endometriosis Health Profile-30 (EHP-30), including its sexual intercourse module, and the EuroQol-5D (EQ-5D), applying their MCID thresholds.

Materials and Methods: This prospective cohort study was conducted at two academic referral centers in Colombia and Argentina between 2021 and 2023. Women with imaging-confirmed deep infiltrating endometriosis undergoing laparoscopic excision after failed medical therapy, or as first-line treatment due to organ involvement, were included. HRQoL was assessed preoperatively and at 6 and 12 months postoperatively using the validated EHP-30, including its sexual intercourse module, and EQ-5D questionnaires. Surgical findings were classified using the Enzian classification system, complications according to Clavien–Dindo, and HRQoL changes were interpreted using established MCID thresholds.

Results: Of 159 eligible patients, 120 completed baseline and at least one postoperative assessment. Mean age was 36.7 years, and 47.5% had previous endometriosis surgery. At 6 months, all EHP-30 domains improved significantly ($p < .001$), with the greatest median reductions in pain (−29.54; 95% CI, −36.36 to −27.27), control and powerlessness (−29.17; 95% CI, −41.66 to −20.83), and sexual functioning (−20.00; 95% CI, −30 to −10). Improvements were sustained at 12 months, with changes meeting or exceeding the published MCID thresholds in all domains, except control and powerlessness, which fell just short of one of the two available thresholds. The EQ-5D index improved at 6 months (+0.28; 95% CI, 0.21–0.42) and 12 months (+0.35; 95% CI, 0.18–0.42; both $p < .001$), exceeding the proposed MCID at both timepoints. Major postoperative complications (Clavien–Dindo grade $\geq$ III) occurred in 8.3% of patients.

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Conclusion: This Latin American cohort showed sustained, clinically meaningful improvements in multiple HRQoL domains, including sexual functioning, after laparoscopic excision of DIE. Interpreting changes from validated disease-specific and generic instruments against MCID thresholds supports the role of surgical excision in symptomatic DIE refractory to medical therapy.

1. Introduction

Deep infiltrating endometriosis (DIE) is a severe form of endometriosis that significantly impacts the quality of life of women of reproductive age. This chronic condition is characterized by the presence of endometrial tissue outside the uterus, which can cause severe pain, organ dysfunction, and, in many cases, infertility [1]. These symptoms negatively impact social, mental, and physical well-being. Additionally, the impairment of health-related quality of life (HRQoL) can significantly affect professional and private relationships, sexuality, social contacts, family planning due to infertility, and psychological well-being [2].

Although it is possible to treat and control endometriosis-related pain symptoms with medical treatment and diet, a subset of patients remains refractory to this [1]. For patients with persistent symptoms despite medical therapy, surgical management remains an important therapeutic option to improve pain symptoms and quality of life [3].

When evaluating surgical outcomes, it is essential to use specific tools that accurately measure changes in HRQoL. The Endometriosis Health Profile–30 (EHP–30) is a disease specific validated and widely used questionnaire to assess quality of life in women with endometriosis. This instrument measures five key dimensions: pain, control and powerlessness, emotional well-being, social support, and self-image [4]. Additionally, the EuroQol–5D (EQ–5D) [5] is one of the most commonly used generic questionnaires to measure HRQoL and health state utility (HSU).

Recent studies have shown significant improvements in postoperative quality of life in patients with deep endometriosis using the EHP–30. Surgical excision has been shown to reduce pain scores and improve emotional well-being and self-image on the EHP–30 [6,7], and to improve EQ–5D scores postoperatively [8].

Regional evidence remains more limited. Prospective Brazilian cohorts have documented postoperative improvement on the EHP–30, but with follow-up no longer than six months and without MCID-based interpretation [9–11].

To our knowledge, no Latin American study has combined a disease-specific and a preference-based generic instrument with MCID-based interpretation in women undergoing surgery for DIE.

We therefore aimed to evaluate changes in HRQoL at 6 and 12 months after laparoscopic excision of DIE in two high-volume Latin American referral centers, using the EHP–30 (including its sexual intercourse module) and the EQ–5D, applying their MCID thresholds.

2. Methods

2.1. Study design and settings

We conducted a prospective, bicentric cohort study of women with DIE assessed from before surgery to one year postoperatively. Patients were recruited between September 2021 and February 2023 at the gynecologic endoscopy outpatient clinics of Clínica del Prado (Medellín, Colombia) and Hospital Italiano de Buenos Aires (Argentina); follow-up ended in March 2024. Both institutional review boards approved the protocol, and participants provided written informed consent before surgery. The study complied with the Declaration of Helsinki (2013 revision) and local regulations, and is reported according to the STROBE statement [12].

2.2. Participants and eligibility criteria

Women aged 16–60 years old, with DIE confirmed by ultrasonography or magnetic resonance, who were treated with dienogest and anti-inflammatory diet at least for 4–6 months and did not achieve adequate symptom control or were recommended surgery as a first treatment option (ureteral obstruction and/or intestinal obstruction).

Patients were excluded if: did not consent, did not complete the baseline instruments, or completed neither the 6- nor the 12-month assessment.

2.3. Variables and measurement

Clinical and sociodemographic characteristics were obtained by manual review of electronic medical records: age, parity, duration of symptoms before surgery, number of previous surgeries, symptoms, and prior hormonal therapy received.

Baseline characteristics, surgical Enzian classification [13], surgical procedure, Clavien-Dindo complications [14], hospital stay, return to usual activities, and subsequent treatment were summarized descriptively.

Primary outcomes were DIE-related quality of life, measured with the validated Spanish version of the EHP–30 [15] and its sexual intercourse module, and health state utility, measured with the EQ–5D [5]. Both were assessed at baseline (presurgical assessment) and at 6 and 12 months after surgery. Questionnaires were emailed at each timepoint; patients who did not respond within 30 days were contacted by telephone up to three times, and after an approved script was read, consenting patients completed both questionnaires verbally.

The EHP–30 and its optional module comprise ordinal items with five response options (never, rarely, sometimes, often, always), yielding domain scores from 0 to 100, where higher scores indicate greater impact of endometriosis on daily functioning and psychosocial well-being [4]. A global score was computed as the mean of the five core domain scores [16], and medians are reported. MCIDs for the EHP–30 have not been established in Latin America; we relied on the data reported in the 2024 systematic review by Jones [17] and her previous publication on responsiveness of the questionnaire [18].

The EQ–5D consists of ordinal items with three options (no problems, some problems, and extreme problems). Based on the time-trade-off technique, the overall questionnaire score can reach a maximum value of 1 point, which represents a state of ideal health, 0 represents the valuation of death, and negative values represent health states with a valuation worse than death [5].

Converting health states into an index requires a value set. For Argentine patients we used the Argentinean value set [19] and, in the absence of a specific value set, the Hispanic value set for Latin Americans for Colombian patients [20].

Because these tariffs are anchored on different population preferences, their indices are not on a common metric and cannot be pooled. As we used the EQ–5D as a patient-reported outcome measure rather than to derive quality-adjusted life years, a single metric was required. For the primary analysis we therefore re-scored the unmodified health-state responses of all patients with the French value set [21], the tariff under which the only endometriosis-specific minimal clinically important difference (MCID) for the EQ–5D index was derived [22]. A secondary analysis by country, applying each locally recommended tariff, is also reported.

Table 1

Baseline characteristics of the study participants (n = 120).

Characteristic (N = 120)	TOTAL (N = 120)	Completed follow up at 12 m (N = 101)	Attrition at 12 m (N = 19)	p
Years (SD)	36.7 (5.77)	36.6 (5.67)	37.3 (6.29)	0.600
BMI (SD)	25.6 (4.53)	25.7 (4.7)	25.1 (3.4)	0.620
Parity (%)				0.274 ^d
0	56 (46.7)	50 (49.5)	6 (31.5)	
1	37 (30.8)	29 (28.7)	8 (42.1)	
2	21 (17.5)	16 (15.8)	5 (26.3)	
3 or more	6 (5)	6 (5.94)	0	
Symptom Duration (IQR, n = 112) ^a	36 (12–60)	36 (12–60)	36 (12–60)	1
Endometriosis prior surgery (%)				0.094 ^d
0	63 (52.5)	57 (56.44)	6 (31.58)	
1	48 (40)	36 (35.64)	12 (63.16)	
2 or more	9 (7.5)	8 (7.92)	1 (5.26)	
Symptoms (%)				0.210
Dysmenorrhea	96 (80)	83 (82.18)	13 (68.42)	
Dyspareunia	86(71.6)	72 (71.29)	14 (73.68)	0.832
Chronic pelvic pain	82(68.3)	66 (65.35)	16 (84.21)	0.105
Dyschezia	67 (55.8)	59 (58.42)	8 (42.11)	0.189
Dysuria	12 (10)	11 (10.89)	1 (5.26)	0.688
Rectal bleeding	6 (5)	6 (5.94)	0 (0)	0.588
Infertility	13 (10.8)	10 (9.9)	3 (15.79)	0.431
Previous Hormonal Treatment (n = 118) ^b	82 (69.5)	67 (67.68)	15 (78.95)	0.328
Endometriosis health profile 30 (EHP30) (Core questionnaire)				0.074
Pain	62.5 (45.5–75)	63.63 (47.7–75)	50 (41–77.2)	1
Control and Powerlessness	75 (50–87.5)	75 (54.1–87.5)	75 (33.3–91.6)	
Emotional Wellbeing	62.5 (45.8–75)	62.5 (45.8–75)	62.5 (45.8–95.8)	1
Social Support	50 (31.25–71.8)	50 (31.2–68.7)	43.5 (25–81.2)	0.483
Self Image	66.6 (41.6–91.6)	66.6 (41.6–83.3)	66.6 (41.6–100)	1
Global	61.9 (47–74.8)	61.9 (50.8–74)	59.7 (42.5–82.8)	0.744
EHP30 Sexual domain (n = 115) ^c	75 (50–90)	75 (50–90)	85 (60–100)	0.304
EuroQol–5D (IQR)				0.349
Global	0.47 (0.15–0.78)	0.48 (0.15.–0.78)	0.63 (0.15–0.78)	

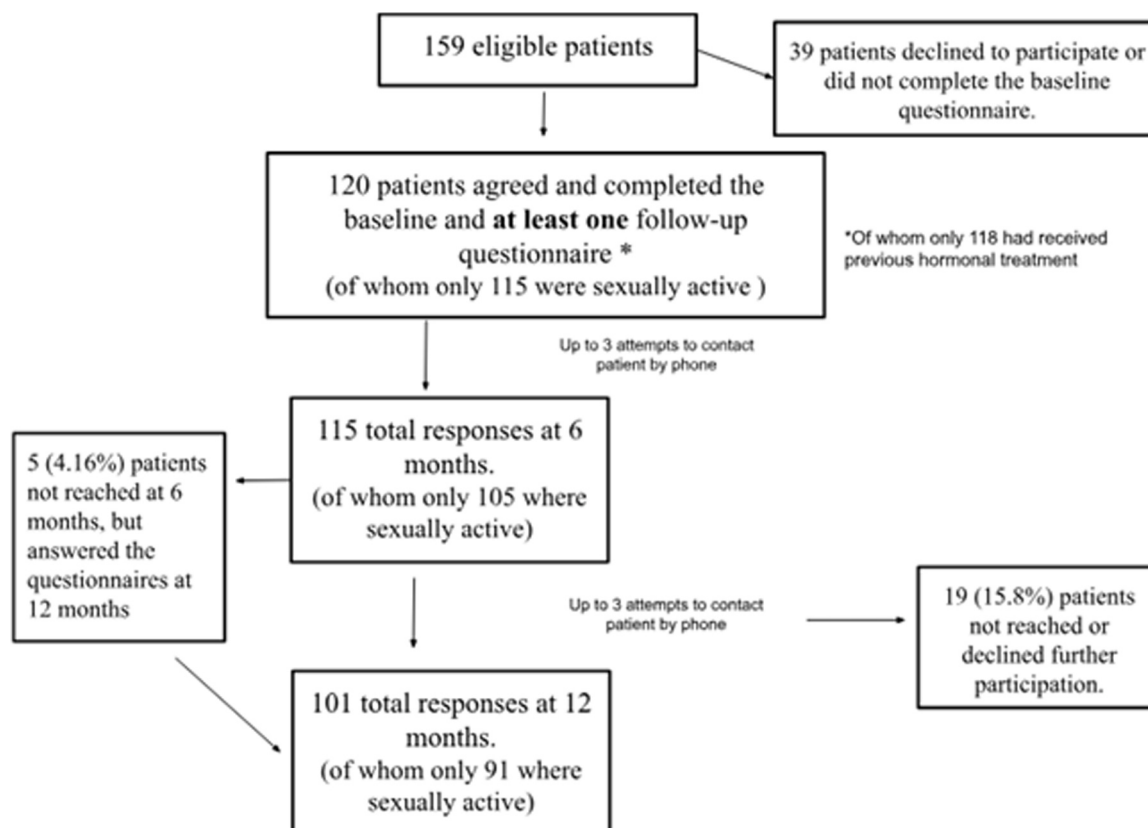
^a Information was available for only 112 patients.^b Of 120 patients, 118 answered of previous hormonal treatment. Mean duration of prior hormonal therapy: 12 months (IQR: 6–24 months)^c Of 120 patients, only 115 had sexual intercourse.^d Non parametric trend test.**Fig. 1.** Flow of study participants.

Table 2
Surgical Enzian.

Surgical Enzian	n	(%)
P (peritoneum)	0	70 (58.33)
	1	30 (25)
	2	13 (10.83)
	3	7 (5.83)
O (Ovary) L/R	0	53 (44.17)
	1	19 (15.83)
	2	40 (33.33)
	3	8 (6.67)
T (Tube) L/R	0	43 (35.83)
	1	18 (15)
	2	31 (25.83)
	3	25 (20.83)
	M	1 (0.83)
	X	2 (1.67)
A (rectovaginal space/retrocervical area)	0	52 (43.33)
	1	21 (17.5)
	2	38 (31.67)
	3	9 (7.5)
B (Uterosacral ligaments, cardinal, pelvic side walls) L/R	0	31 (25.83)
	1	22 (18.33)
	2	61 (50.83)
	3	6 (5)
C (rectum)	0	50 (41.67)
	1	21 (17.5)
	2	29 (24.17)
	3	20 (16.67)
FA (adenomyosis)	0	92 (76.67)
	1	28 (23.33)
FB (bladder)	0	113 (94.17)
	1	7 (5.8)
FI (intestinum)	0	112 (93.33)
	1	8 (6.67)
FU (ureter)	0	107 (89.17)
	1	13 (10.83)
F Diaphragm	0	0

2.4. Surgical treatment protocol

According to the symptoms and the findings on MRI or dynamic ultrasound, a patient-specific surgical plan was developed. All procedures were performed laparoscopically by gynecologic staff surgeons experienced in this condition. For patients with rectal or bladder nodules, multidisciplinary teams including colorectal surgeons or urologists, respectively, were involved.

2.5. Bias

Clinical data extraction from medical registries was performed by a researcher and independently corroborated by a second researcher. Outcome data was obtained by trained gynecologists and stored in a prespecified database regularly audited for completeness.

2.6. Study size

Sample size was calculated for 90% power to detect the 24.8-point MCID in the pain subscale reported by Jones et al. [17], assuming an intrapersonal correlation of 0.5 and standard deviations of 21.6 at baseline and 26.8 after treatment [17]. The alpha error was adjusted for six comparisons (five core dimensions plus sexual intercourse; $0.05/6 = 0.0083$). Based on these parameters, a minimum of 30 participants with complete data would be required for analysis.

2.7. Statistical methods

Descriptive analyses used frequencies and percentages for categorical variables, and medians with interquartile ranges or means with standard deviations for continuous variables, as appropriate. Changes in questionnaire scores were summarized as the median of the paired

Table 3
Surgical Procedures, Mean operative Time, Clavien-Dindo surgical complications, median hospital stay and time to return to usual activities and post surgical hormonal treatment.

Surgical Procedures ^a (%)	Adhesiolysis	69(57.5)
	Ureterolysis	61(50.8)
	Total Hysterectomy	47(39.2)
	Unilateral uterosacral nodule resection	37(30.8)
	Bilateral uterosacral nodule resection	39(32.5)
	Unilateral ovarian cyst resection	34(28.3)
	Bilateral ovarian cyst resection	23(19.2)
	Salpingectomy	26(21.7)
	Rectal Shaving	21(17.5)
	Discoid rectal resection	20(16.7)
	Segmental rectal resection	22(18.4)
	Bladder nodule resection	7 (5.83)
Operative time, min Median (IQR)		150 (120–240)
Surgical Complications (%) (Clavien-Dindo)	I	5 (4.17)
	II	1 (0.83)
	IIIA	0
	IIIB	9 (7.5)
	IVA	1 (0.83)
	IVB	0
Hospital Stay, days Median (IQR)		1 (1-3)
Return to usual activities, days Median (IQR)		21 (15-30)
Postoperative Surgical Treatment	Dienogest	63 (52.5)
	Drospirenone 4 mg	13 (10.8)
	OCPs ^b (E + P continuous)	5 (4.2)
	NO, seeking pregnancy	7 (5.8)
	NO, hysterectomy with bilateral adnexectomy	29 (24.1)
	GNRH Agonists	3 (2.5)

^a In 68.4% of cases, between 3 and 4 procedures were performed per patient.
^b OCPs: oral contraceptive pills

within-patient differences (follow-up minus baseline), with 95% confidence intervals obtained by bootstrap of the sample median (20,000 replications, percentile method) among patients with complete data at each timepoint. Paired differences were tested with the Wilcoxon signed-rank test.

Two exploratory analyses were added at the request of peer review: median changes from baseline to 12 months according to uterine preservation versus concomitant hysterectomy, and according to post-operative hormonal therapy. Because these were not prespecified and involve multiple scales in a single-arm cohort, they are reported as median differences by subgroup without hypothesis testing.

3. Results

Of 159 eligible patients, 120 (75.5%) consented and completed the baseline questionnaires and at least one follow-up assessment (Table 1, Fig. 1). Mean age at surgery was 36.7 years (SD 5.77), 56 patients were nulliparous, mean symptom duration was 36 months, and 57 (47.5%) had undergone at least one prior procedure for endometriosis. The most frequent preoperative symptoms were dysmenorrhea (80%), dyspareunia (71.6%), and chronic pelvic pain (68.3%); dyschezia affected 55% and infertility 10.8%. Nearly 70% had received hormonal treatment for at least one year before surgery. Patients completing 12-month follow-up did not differ significantly from those lost to follow-up.

Surgical procedures, #Enzian classification, operative time, and Clavien–Dindo complications are detailed in Tables 2 and 3. All patients underwent complete surgical management for DIE. The most frequent procedures were hysterectomy (47, 39.2%), segmental bowel resection (22, 18.3%), rectal shaving (21, 17.5%), and discoid bowel resection (20, 16.7%); ureteral reimplantation was required in 4 patients (3.3%). Median operative time was 150 min (IQR 120–240), and patients

Table 4

EHP-30 and EuroQol-5D results with the MCID interpretation.

EHP-30	MCID ^a		Baseline (month 0) N = 120 (IQR)	6 months N = 115 (IQR)	12 months N = 101 (IQR)	Changes at 6 months relative to baseline (CI 95%) (n = 115) ^b	Changes at 12 months relative to baseline (CI 95%) (n = 101) ^c	Exceeded the proposed MCID ^a ? (✓/✗)	
	Jones et al.	Van de Burgt et al.						Jones et al.	Van de Burgt et al.
Pain	-24.8	-11.5	62.5 (45.5–75)	25 (4.54–45.45)	25 (0–40.90)	–29.54 (–36.36 to –27.27) p < .001	–36.36 (–43.18 to –29.54) p < .001	✓	✓
Control and powerlessness	-35.2	-12.5	75 (50–87.5)	29.16 (4.16–58.33)	25 (8.33–50)	–29.16 (–41.66 to –20.83) p < .001	–33.33 (–45.83 to –25) p < .001	✗	✓
Emotional Well- Being	-7.6	-5.5	62.5 (45.8–75)	41.66 (25–58.33)	41.66 (20.83–62.5)	–12.5 (–20.83 to - 8.3) p < .001	–16.66 (–25 to –12.5) p < .001	✓	✓
Social support	1.7 ^d	–10	50 (31.25–71.8)	37.5 (25–56.25)	31.25 (18.75–43.75)	–12.5 (–25 to –6.25) p < .001	–18.75 (–25 to –12.5) p < .001	. ^d	✓
Self - image	-9.9	-3.2	66.6 (41.6–91.6)	33.33 (16.66–75)	33.33 (8.33–66.66)	–16.66 (–25 to –8.33) p < .001	–16.66 (–25 to –8.33) p < .001	✓	✓
Global	NR ^e		61.9 (47–74.8)	34.24 (15.83–57)	32.72 (14.62–49.01)	–19.84 (–26.32 to –14.39) p < .001	–22.91 (–32 to –17.53) p < .001	-	-
Sexual	NR ^e	–4.4	75 (50–90)	35 (10–70)	42.5 (10–67.5)	–20 (–30 to –10) p < .001	–20 (–30 to –15) p < .001	-	✓
EuroQol-5D TTO^e	0.26 ^a		0.47 (0.15–0.78)	0.87 (0.71–1)	0.87 (0.73–1)	+0.28 (0.21–0.42) p < .001	+0.35 (0.18–0.42) p < .001	✓	✓

MCID: minimal clinical important difference.

^a MCID published by Jones in her systematic review for EHP30 [17] and by Aubry [22] for the EQ-5D.^b At the six-month follow-up, 115 patients completed the assessment, of whom only 105 were sexually active.^c At the twelve-month follow-up, 101 patients completed the assessment, of whom only 91 were sexually active.^d Not interpretable. Jones postulates on her publication of responsiveness [18]: “Only one scale of the main EHP-30 questionnaire failed to demonstrate sensitivity to change or responsiveness. This is possibly because the questionnaire items are too broad to detect subtle changes or because many of the instrument's items are not relevant to the clinical trial.”^e Not reported by the authors.

resumed usual activities after a median of 21 days (IQR 15–30).

Clavien-Dindo grade III or higher complications occurred in 10 patients (8.3%): intestinal or bladder injury and rectovaginal or vesicovaginal fistulas (grade IIIB), and post-hysterectomy vault bleeding (grade IV). Postoperative hormonal therapy was continued in 70.1% of patients; the remainder had undergone hysterectomy with bilateral salpingo-oophorectomy (24.1%) or were attempting pregnancy (5.8%). No patient who underwent bilateral salpingo-oophorectomy received hormone replacement therapy during the first 12 months.

Table 4 and Fig. 2. show the distribution of scores across all scales of the EHP-30 and the EQ-5D for each time point. Patients demonstrated statistically significant and clinically important improvement in all scales of the EHP-30 at 6 months postoperatively, including the sexual domain, which persisted for the duration of their one year of follow-up when compared with their baseline scores preoperatively (all p < .001).

From preop to postop (6 months), the smallest median reduction was reported for social support (–12.5; 95% CI, –25 to –6.25), and emotional wellbeing (–12.5; 95% CI, –20.83 to - 8.3) whereas the largest reductions occurred in pain (–29.54; 95% CI, –36.36 to –27.27), control and powerlessness (–29.16; 95% CI, –41.66 to –20.83) and the sexual domain (–20; CI, –30 to –10).

After one year post surgical intervention, reductions were slightly greater across all scales except for self-image and the sexual domain, which remained stable. Median changes in all EHP-30 scales met or exceeded the published MCID thresholds, except for control and powerlessness, which exceeded the threshold reported by van de Burgt et al. but fell just short of that reported by Jones et al. [17].

The EQ-5D index also improved significantly at 6 months (+0.28; 95% CI, 0.21–0.42) and 12 months (+0.35; 95% CI, 0.18–0.42; both p < .001), exceeding the 0.26 MCID [22] at both time points. The

EQ-5D results by centre, applying each locally recommended tariff, are reported in [Supplementary Table1](#).

In a sensitivity analysis restricted to 96 patients with data at all three timepoints, 6-month improvements were slightly larger and 12-month changes essentially unchanged; further improvement between 6 and 12 months persisted only for pain, emotional well-being, and EQ-5D ([Supplementary Table 2](#)).

Two post hoc exploratory stratifications were performed ([supplementary tables 3 and 4](#)). Median changes at 12 months were numerically larger after concomitant hysterectomy (n = 40) than after uterine-sparing surgery (n = 61) across all EHP-30 scales, with the largest divergence in sexual functioning (–40 vs –15) and control and powerlessness (–50 vs –29.16). Changes according to postoperative hormonal therapy (n = 70) versus none (n = 31) were identical in control and powerlessness and social support and slightly larger without hormonal therapy in the remaining scales, most notably pain (–45.45 vs –31.81).

4. Discussion

In this cohort of 120 patients with DIE, we observed substantial and sustained improvements across all EHP-30 domains and in the EQ-5D index at 12 months, with changes meeting or exceeding the MCID thresholds available for each instrument. The only exception was control and powerlessness, which fell just short of that reported by Jones et al. [17]. These results are closely aligned with the growing body of evidence that surgical excision improves quality of life in women with endometriosis.

Consistent with Rindos et al. [6], who reported longer follow-up, the largest postoperative improvements occurred in pain and in control and

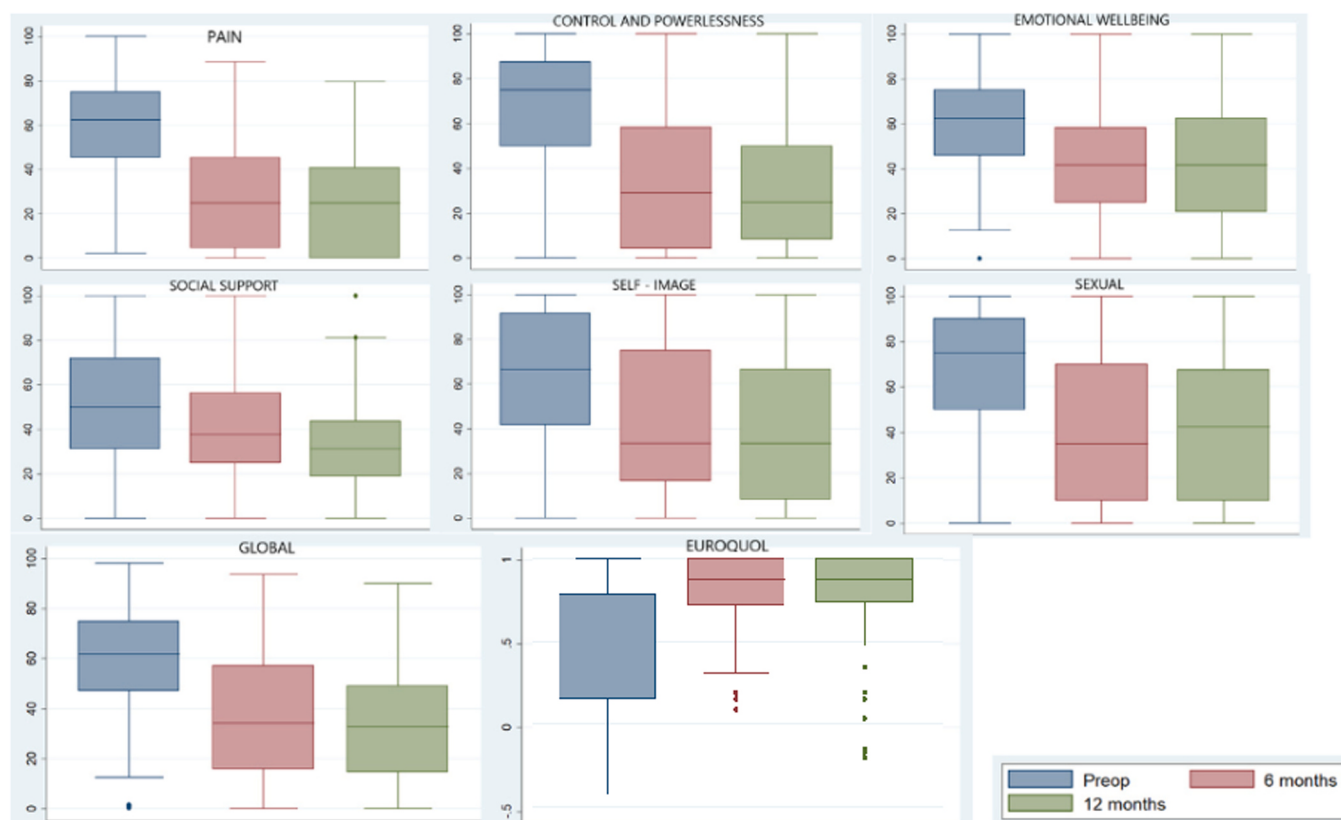


Fig. 2. EHP 30 and EuroQol-5D graphics at baseline, at 6 months and 12 months post surgical procedure.

powerlessness. To these we add the EHP–30 sexual domain, profoundly affected by the disease yet frequently underreported, and the interpretation of changes against MCID thresholds, of direct utility for preoperative counseling. Whereas this study found no difference between surgical approaches, improvements across all EHP–30 scales were numerically larger after concomitant hysterectomy than after uterine-sparing surgery in the present cohort. This comparison was exploratory and not formally tested: allocation was clinically determined, so the groups differ in baseline indication and are not exchangeable.

A recent review [7] also emphasized the heterogeneity of available studies and the inconsistent use of validated instruments; none of the included studies interpreted postoperative changes against MCID thresholds. By combining a disease-specific instrument (EHP–30) with a generic measure (EQ–5D) and anchoring changes to established thresholds, the present study offers a more clinically interpretable assessment of postoperative improvement.

As in the BSGE cohort [8], patients underwent complex procedures including discoid and segmental bowel resection, with comparable complication rates. That study included over 5000 patients and confirmed the benefit of surgery but did not assess quality of life with disease-specific questionnaires. Our work complements those findings by showing not only reductions in pain but also multidimensional gains across emotional, psychosocial, and sexual domains.

Comparable data from Latin America remain limited. Two Brazilian surgical cohorts, of 102 women with endometriosis of all forms [9] and 139 women stratified by superficial versus deep disease [11], reported improvement across EHP–30 domains in the same direction, but with follow-up no longer than six months.

This is one of the first prospective studies from two high-volume Latin American referral centers to assess postoperative quality-of-life changes at 12 months, using both the EHP–30 and the EQ–5D with

MCID-based interpretation. Interpretation based solely on statistical significance may overestimate clinical relevance. MCID-based interpretation provides a more patient-centered framework.

We also used detailed surgical phenotyping using the updated 2021 Enzian classification [13] and the procedures performed in concordance to these findings. Despite a high proportion of advanced disease requiring complex bowel procedures, complication rates remained comparable to international benchmarks.

In addition, the inclusion of the sexual domain of the EHP–30—a domain rarely reported in the literature—represents an additional strength, given its high clinical relevance in women with deep infiltrating endometriosis.

This study has limitations. Recruitment at tertiary referral centers may have introduced selection bias toward more severe disease, and attrition reached 15.8% at 12 months, addressed in a balanced-sample sensitivity analysis (Supplementary Table 2). Although surgical technique was standardized, a substantial proportion of patients continued postoperative hormonal therapy, reflecting real-world multimodal management; improvement therefore cannot be attributed to surgery alone. Changes were of similar magnitude by hormonal therapy status, but the untreated group comprised women after bilateral adnexectomy or seeking pregnancy and is not a no-treatment comparator. These exploratory analyses were not prespecified and are hypothesis-generating. Finally, no endometriosis-specific MCID has been derived under a Latin American value set; the pooled EQ–5D index was re-scored with the French tariff to permit comparison against the only available disease-specific threshold, at the cost of applying societal weights that do not represent the populations studied. Results by center under locally recommended tariffs are provided so readers may judge the influence of the valuation scheme.

5. Conclusions

This bicentric Latin American cohort showed sustained, clinically important improvements after laparoscopic excision of DIE across multiple quality-of-life domains, including sexual functioning, which is infrequently evaluated. Anchoring changes from both disease-specific and generic instruments to MCID thresholds supports the role of surgical excision in symptomatic DIE refractory to medical therapy. Further research should validate MCID thresholds in Latin American populations, extend follow-up beyond 12 months, and compare surgical and non-surgical approaches with standardized measures.

CRedit authorship contribution statement

Agustina Lucila Larrea: Writing – review & editing, Writing – original draft, Visualization, Project administration, Methodology, Investigation, Data curation. **Edwin Gomez Ibarra:** Investigation, Data curation, Conceptualization. **Carolina Rendon Restrepo:** Data curation. **Lila Cuesta Roa:** Data curation. **Diego Fernando Rojas-Gualdron:** Methodology, Formal analysis, Data curation. **Elsa Maria Vasquez Trespalacios:** Formal analysis. **Sergio Adrian Terrasa:** Writing – review & editing, Methodology, Formal analysis, Data curation. **Claudia López Ruiz:** Validation, Supervision, Investigation, Conceptualization. **Victorio Tomas Viglierchio:** Validation, Project administration, Conceptualization. **Jose Fernando de los Rios:** Validation, Supervision, Conceptualization.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the author(s) used ChatGPT to assist with language refinement, spelling and grammar correction, and identification of minor editorial inconsistencies. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the published article.

Ethics statement

IRB Approval: This study was approved by the ethics committee of Clinica del Prado on May 25, 2021 and Hospital Italiano de Buenos Aires on August 20, 2021. Informed consent was obtained from all research participants.

Prior presentation

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the

online version at [doi:10.1016/j.eurox.2026.100485](https://doi.org/10.1016/j.eurox.2026.100485).

Data availability

Data is available from the authors upon reasonable request.

References

- [1] CM, Bokor A, Heikinheimo O, Horne A, Jansen F, Kiesel L, et al. ESHRE guideline: endometriosis. *Hum reprod open* 2022;2022(2):hoac009.
- [2] Moradi M, Parker M, Sneddon A, Lopez V, Ellwood D. Impact of endometriosis on women's lives: a qualitative study. *BMC Women's Health* 2014;14(1):123.
- [3] Kho RM, Andres MP, Borrelli GM, Neto JS, Zanluchi A, Abrão MS. Surgical treatment of different types of endometriosis: comparison of major society guidelines and preferred clinical algorithms. *Best Pract Res Clin Obstet Gynaecol* 2018;51:102–10.
- [4] Jones G, Kennedy S, Barnard A, Wong J, Jenkinson C. Development of an endometriosis quality-of-life instrument: the Endometriosis HealthProfile-30. *Obstet Gynecol* 2001;2:258–64.
- [5] EuroQol Group. EuroQol—a new facility for the measurement of health-related quality of life. *Health Policy* 1990 Dec;16(3):199–208.
- [6] Rindos NB, Fulcher IR, Donnellan NM. Pain and quality of life after laparoscopic excision of endometriosis. *J Minim Invasive Gynecol* 2020;27(7):1610–7. e1.
- [7] Arcoverde FVL, Andres MP, Borrelli GM, Barbosa PA, Abrão MS, Kho RM. Surgery for endometriosis improves major domains of quality of life: a systematic review and meta-analysis. *J Minim Invasive Gynecol* 2019;26(2):266–78.
- [8] Byrne D, Curnow T, Smith P, et al. Laparoscopic excision of deep rectovaginal endometriosis in BSGE endometriosis centres: a multicentre prospective cohort study. *BMJ Open* 2018;8:e018924.
- [9] Nogueira Neto J, Gonçalves Melo V, Silva Lima LC, et al. Improved quality of life (EHP-30) in patients with endometriosis after surgical treatment. *Rev Assoc Med Bras* 2023;69(8):e20230316.
- [10] Lavor CB, Vieira Neta FA, Viana Junior AB, Medeiros FC. The impact of surgical treatment for deep endometriosis: metabolic profile, quality of life and psychological aspects. *Rev Bras Ginecol Obstet* 2024;46:e-rbgo42.
- [11] Servidoni ACP, Andres MP, Azevedo RR, Orlandi CC, Abrão MS. Evaluation of quality of life before and after endometriosis surgery. *J Minim Invasive Gynecol* 2025;32(11):S108. Abstract form 14816.
- [12] Von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The strengthening of reporting of observational studies in epidemiology (strobe) statement: guidelines for reporting observational studies. *J Clin Epidemiol* 2008;61(4):344–9.
- [13] Keckstein J, Saridogan E, Ulrich UA, Sillem M, Oppelt P, Schweppe KW, et al. The #Enzian classification: A comprehensive non-invasive and surgical description system for endometriosis. *Acta Obstet Gynecol Scand* 2021;100(7):1165–75.
- [14] Dindo D, Demartines N, Clavien PA. Classification of surgical complications: a new proposal with evaluation in a cohort of 6336 patients and results of a survey. *Ann Surg* 2004;240(2):205–13.
- [15] Mari-Alexandre J, García-Oms J, Agababyan C, Belda-Montesinos R, Royo-Bolea S, Varo-Gómez B, et al. Toward an improved assessment of quality of life in endometriosis: evaluation of the Spanish version of the Endometriosis Health Profile 30. *J Psychosom Obstet Gynecol* July 3 2022;43(3):251. 7.
- [16] Jones G, Jenkinson C, Kennedy S. The Endometriosis Health Profile User Manual: user manual for the EHP-30 and the EHP-5. Oxford (UK): Nuffield Department of Obstetrics & Gynaecology and Health Services Research Unit. Second ed. University of Oxford; 2020.
- [17] Jones GL, Budds K, Taylor F, Musson D, Raymer J, Churchman D, et al. A systematic review to determine use of the Endometriosis Health Profiles to measure quality of life outcomes in women with endometriosis. *Hum Reprod Update* 2024;30(2):186–214.
- [18] Jones G, Jenkinson C, Kennedy S. Evaluating the responsiveness of the endometriosis health profile questionnaire: the EHP-30. *Qual Life Res* 2004;13:705–13.
- [19] Augustovski FA, Irazola VE, Velazquez AP, Gibbons L, Craig BM. Argentine valuation of the EQ-5D health states. *Value Health* 2009;12(4):587–96.
- [20] Zarate V, Kind P, Chuang LH. Hispanic valuation of the EQ-5D health states: a social value set for Latin Americans. *Value Health* 2008;11(7):1170–7.
- [21] Chevalier J, de Pouvoirville G. Valuing EQ-5D using time trade-off in France. *Eur J Health Econ* 2013;14:57–66.
- [22] Aubry G, Panel P, Thiollier G, Huchon C, Fauconnier A. Measuring health-related quality of life in women with endometriosis: comparing the clinimetric properties of the Endometriosis Health Profile-5 (EHP-5) and the EuroQol-5D (EQ-5D). *Hum Reprod* 2017;32(6):1258–69. <https://doi.org/10.1093/humrep/dex057>.