

Supplementary Online Content

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eTable 1. Baseline Characteristics of the Sample (N = 239)

eTable 2. Follow-Up vs No Follow-Up

eTable 3. Pain Scores and CSI at Baseline and Post-Surgery Follow-Up (N = 239)

eTable 4. Ordinal Regression Between Chronic Pelvic Pain Score at Follow-Up, Controlling for Baseline Chronic Pelvic Pain Score (Excluding People With Bilateral Salpingo-Oophorectomy)

eTable 5. Ordinal Regression Between Chronic Pelvic Pain Score at Follow-up, Controlling for Baseline Chronic Pelvic Pain Score

eTable 6. Ordinal Regression Between Dysmenorrhea at Follow-Up and Variables of Interest, Controlling for Baseline Pain Scores (Excluding Hysterectomy Group)

eTable 7. Multivariable Ordinal Regression Models Before Backward Elimination

eFigure. Chronic Pelvic Pain Scores by Central Sensitization Inventory Group

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. Baseline Characteristics of the Sample (N = 239)

Variable	Summary Statistic, No. (%)
<i>Demographics</i>	
Age, mean±SD, years	34.12±6.92
Education	
College or More (Higher Education)	205 (85.8)
High School or Below	34 (14.2)
Parity	
Parous	72 (30.1)
Nulliparous	167 (69.9)
Partnered (Married or Common-Law)	
Yes	164 (68.6)
No	75 (31.4)
Sexual Orientation	
Heterosexual	206 (86.2)
Lesbian	7 (2.9)
Bisexual	19 (7.9)
None of the above	3 (1.3)
Prefer not to say	4 (1.7)
Gender Identity	
Female	236 (98.7)
Non-binary/genderqueer	3 (1.3)
Currently Working	
Yes	177 (74.1)
No	45 (18.8)
Missing	17 (7.1)
<i>Endometriosis Diagnosis Before the Index Surgery^a</i>	
Previous Histological Diagnosis	
Yes	62 (25.9)
No	177 (74.1)
Previous Surgical Visual Diagnosis of Endometriosis	
Yes	53 (22.2)
No	186 (77.8)
Endometrioma on Ultrasound at Baseline	
Yes	56 (23.4)
No	183 (76.6)
Deep Nodule on Exam or Ultrasound at Baseline	
Yes	17 (7.1)
No	222 (92.9)

Otherwise Clinically Suspected Endometriosis at Baseline	
Yes	86 (36.0)
No	153 (64.0)
<i>Index Surgery</i>	
Surgical Approach	
Laparoscopy	233 (97.5)
Laparotomy	6 (2.5)
Type of Surgery	
Conservative	168 (70.3)
Hysterectomy (with/without bilateral salpingo-oophorectomy)	71 (29.7)
<i>With bilateral salpingo-oophorectomy</i>	<i>8/71(11.3)</i>
<i>Without bilateral salpingo-oophorectomy</i>	<i>63/71(88.7)</i>
Stage	
I/II	122 (51.0)
III/IV	97 (40.6)
Missing	20 (8.4)
<i>Endometriosis Identified on Pathology Report</i>	
Superficial Endometriosis	154 (64.4)
Deep Infiltrating Endometriosis	82 (34.3)
Endometrioma	70 (29.3)
<i>Central Sensitivity Syndromes (CSS)</i>	
CSS total	
0	17 (7.1)
1	39 (16.3)
2	41 (17.2)
3	46 (19.2)
4	33 (13.8)
5	24 (10.0)
6	17 (7.1)
7	17 (7.1)
8	5 (2.1)
9	0 (0)
10	0 (0)
Painful Bladder Syndrome	
Yes	110 (46.0)
No	129 (54.0)
Irritable Bowel Syndrome	
Yes	152 (63.6)
No	87 (36.4)
Abdominal Wall Pain	
Yes	76 (31.8)
No	163 (68.2)

Bladder/Pelvic Floor Tenderness	
Yes	95 (39.7)
No	144 (60.3)
PHQ	
<10	144 (60.3)
>=10	95 (39.7)
GAD	
<10	182 (76.2)
>=10	57 (23.8)
PCS	
<30	155 (64.9)
>=30	84 (35.1)
Fibromyalgia	
Yes	13 (5.4)
No	226 (94.6)
Chronic Fatigue Syndrome	
Yes	7 (2.9)
No	232 (97.1)
Migraines	
Yes	72 (30.1)
No	167 (69.9)
<i>Co-Treatments in Addition to the Index Surgery</i>	
Hormone Use (at time of surgery)	
Yes	120 (50.2)
No	113 (47.3)
Don't know	3 (1.3)
Missing	3 (1.3)
Hormone Use (at time of follow-up)	
Yes	101 (42.3)
No	137 (57.3)
Don't know	1 (0.4)
Counselling	
Yes	65 (27.2)
No	174 (72.8)
Physiotherapy	
Yes	59 (24.7)
No	180 (75.3)
Pain Education Workshop	
Yes	60 (25.1)
No	179 (74.9)

Abbreviations: CSS = Central Sensitivity Syndrome; PHQ = Patient Health Questionnaire; GAD = Generalized Anxiety Disorder; PCS = Pain Catastrophizing Scale.

^aParticipants could have more than one type of endometriosis diagnosis before index surgery.

eTable 2. Follow-Up vs No Follow-Up.

Characteristic	No Follow-Up (N=97)	Follow-Up (N=239)	P Value
	Summary Statistic, No. (%)		
CSI & Pain Scores			
CSI (0-100) Baseline, mean±SD	46.73±17.95	43.79±18.15	.18
CSS Total, mean±SD	3.66±1.95	3.18±2.06	.05
CSS Total			
0	4 (4.1)	18 (7.5)	.06
1	12 (12.4)	39 (16.3)	
2	12 (12.4)	44 (18.4)	
3	21 (21.6)	44 (18.4)	
4	11 (11.3)	31 (13.0)	
5	17 (17.5)	26 (10.9)	
6	15 (15.5)	15 (6.3)	
7	3 (3.1)	18 (7.5)	
8	2 (2.1)	4 (1.7)	
Fibromyalgia			
Yes	3 (3.1)	13 (5.4)	.57
No	94 (96.9)	226 (94.6)	
Chronic Fatigue Syndrome			
Yes	2 (2.1)	7 (2.9)	>.99
No	95 (97.9)	232 (97.1)	
Migraines			
Yes	21(21.6)	72 (30.1)	.14
No	76 (78.4)	167 (69.9)	
Chronic Pelvic Pain			
0-3	13 (13.4)	50 (20.9)	.28
4-6	26 (26.8)	59 (24.7)	
7-10	58 (59.8)	130 (54.4)	
Dysmenorrhea (3 months)			
0-3	6 (6.6)	27 (12.5)	.14
4-6	23 (25.3)	38 (17.6)	
7-10	62 (68.1)	151 (69.9)	
Deep Dyspareunia			
0-3	15 (15.8)	45 (19.6)	.67
4-6	26 (27.4)	65 (28.3)	
7-10	54 (56.8)	120 (52.2)	
Superficial Dyspareunia			
0-3	52 (54.7)	146 (62.9)	.09
4-6	28 (29.5)	43 (18.5)	
7-10	15 (15.8)	43 (18.5)	
Dyschezia			
0-3	38 (39.2)	90 (37.7)	.74

4-6	23 (23.7)	50 (20.9)	
7-10	36 (37.1)	99 (41.4)	
Back Pain			
0-3	4 (4.5)	23 (10.7)	.04
4-6	46 (51.7)	80 (37.4)	
7-10	39 (43.8)	111 (51.9)	
Demographics			
Age, , mean±SD, years	32.98±7.31	34.12±6.92	.18
Hormone Use (Ever)			
Yes	84 (91.3)	211 (90.6)	>.99
No	8 (8.7)	22 (9.4)	
Hormone Use (At time of Surgery)			
Yes	54 (59.3)	120 (51.5)	.22
No	37 (40.7)	113 (48.5)	
Ethnicity			
Caucasian	67 (69.1)	189 (79.1)	.07
Other	30 (30.9)	50 (20.9)	
Education			
College or More (Higher Education)	79 (81.4)	205 (85.8)	.32
High School or Below	18 (18.6)	34 (14.2)	
Parity			
Parous	37 (38.1)	72 (30.1)	.16
Nulliparous	60 (61.9)	167 (69.9)	
Partnered (Married or Common-Law)			
Yes	59 (60.8)	164 (68.6)	.20
No	38 (39.2)	75 (31.4)	
Sexual Orientation			
Heterosexual	81 (83.5)	206 (86.2)	.61
Other or Prefer Not to Say	16 (16.5)	33 (13.8)	
Gender Identity			
Female	95 (97.9)	236 (98.7)	.63
Non-Binary/Genderqueer/Other	2 (2.1)	3 (1.3)	
Currently Working			
Yes	66 (70.2)	177 (79.7)	.08
No	28 (29.8)	45 (20.3)	
GAD, mean±SD	8.74±5.49	6.52±5.43	.001
PHQ, mean±SD	10.89±7.14	8.88±6.10	.02
PCS, mean±SD	26.52±12.55	24.17±12.79	.13
EHP (total score) , mean±SD	24.17±12.79	22.69±10.40	.12
Painful Bladder Syndrome			
Yes	58 (59.8)	110 (46.0)	.03
No	39 (40.2)	129 (54.0)	
Irritable Bowel Syndrome			
Yes	56 (57.7)	152 (63.6)	.32

No	41 (42.3)	87 (36.3)	
Abdominal Wall Pain			
Yes	36 (37.1)	76 (31.8)	.37
No	61 (62.9)	163 (68.2)	
Bladder/Pelvic Floor Tenderness			
Yes	54 (55.7)	95 (39.7)	.01
No	43 (44.3)	144 (60.3)	
Cul-de-Sac Tenderness			
Yes	58 (59.8)	122 (51.0)	.15
No	39 (40.2)	117 (49.0)	
Endometriosis Diagnosis			
Suspected Endometriosis			
Yes	37 (38.1)	86 (36.0)	.71
No	60 (61.9)	153 (64.0)	
Visual Diagnosis of Endometriosis			
Yes	23 (23.7)	53 (22.2)	.78
No	74 (76.3)	186 (77.8)	
Current Endometrioma			
Yes	23 (23.7)	56 (23.4)	>.99
No	74 (76.3)	183 (76.6)	
Current Deep Infiltrating Nodule			
Yes	3 (3.1)	17 (7.1)	.21
No	94 (96.9)	222 (92.9)	
Previous Histological Diagnosis			
Yes	24 (24.7)	62 (25.9)	.89
No	73 (75.3)	177 (74.1)	
Stage			
I/II	49 (57.0)	121 (55.5)	.90
III/IV	37 (43.0)	97 (44.5)	
Treatment			
Surgery			
Hysterectomy group	28 (28.9)	71 (29.7)	>.99
Conservative surgery group	69 (71.1)	168 (70.3)	

Abbreviations: CSI = Central Sensitization Inventory; CSS = Central Sensitivity Syndrome; GAD = Generalized Anxiety Disorder; PHQ = Patient Health Questionnaire; PCS = Pain Catastrophizing Scale; EHP = Endometriosis Health Profile.

eTable 3. Pain Scores and CSI at Baseline and Post-Surgery Follow-Up (N = 239).

Pain score	Baseline	Follow-up	P Value ^a	Effect Size ^f
	No. (%)			
Chronic Pelvic Pain				
0-3	50 (20.9)	120 (50.2)	<.001	.54
4-6	59 (24.7)	63 (26.4)		
7-10	130 (54.4)	56 (23.4)		
Dysmenorrhea (last 3 Months)				
0-3	27 (11.3)	51 (21.3)	<.001 ^b <.001 ^c	.51 ^b .60 ^c
4-6	38 (15.9)	36 (15.1)		
7-10	151 (63.2)	54 (22.6)		
No Menses	23 (9.6)	98 (41.0)		
Deep Dyspareunia				
0-3	45 (18.8)	109 (45.6)	<.001 ^d	.59 ^d
4-6	65 (27.2)	41 (17.2)		
7-10	120 (50.2)	34 (14.2)		
Missing (Not Sexually Active) ^e	9 (3.8) ^e	55 (23.0) ^e		
Dyschezia				
0-3	90 (37.7)	146 (61.1)	<.001	.42
4-6	50 (20.9)	50 (20.9)		
7-10	99 (41.4)	43 (18.0)		
Back Pain				
0-3	48 (20.1)	106 (44.4)	<.001	.44
4-6	80 (33.5)	65 (27.2)		
7-10	111 (46.4)	68 (28.5)		
Questionnaire	Baseline	Follow-up		
	Mean ± Standard deviation			

Central Sensitization Inventory (CSI) (0-100)	43.79±18.15	41.74±18.94	.05	.13
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^aWilcoxon signed rank test for categorical pain variables; Paired sample t-test for CSI

^bExcluding those with no menses

^cClassifying those with no menses as 0-3 score

^dExcluding those not sexually active

^eBaseline question is about not sexually active ever; follow-up question is not sexually active last 3 months

^fWilcoxon signed rank effect size = z/\sqrt{B} ; Paired-sample t-test cohen d = mean/SD

eTable 4. Ordinal Regression Between Chronic Pelvic Pain Score at Follow-Up, Controlling for Baseline Chronic Pelvic Pain Score (Excluding People With Bilateral Salpingo-Oophorectomy).

Variable	P Value	Odds Ratio	95% CI	
			Lower	Upper
Univariable Analyses ^a				
CSI at Baseline (continuous)	.02	1.018	1.003	1.033
Age (years)	.001	.938	.903	.975
Married (Yes vs. No)	.22	.716	.418	1.226
Education (At Least College vs. High School)	.33	.704	.349	1.420
Stage (III/IV vs. I/II)	.90	.964	.562	1.655
Ethnicity (Caucasian vs. Other)	.48	.795	.424	1.493
Parous (Yes vs. No)	.90	1.038	.595	1.811
Surgery (Hysterectomy vs. Conservative Surgery)	.004	.420	.232	.761
Multivariable Model With Significant Variables Before Backwards Elimination				
CSI at Baseline (continuous)	.02	1.018	1.003	1.033
Age	.04	.956	.916	.998
Surgery (Hysterectomy vs. Conservative surgery)	.08	.550	.282	1.071
Multivariable Model With Significant Variables After Backwards Elimination				
CSI at Baseline (continuous)	.03	1.017	1.002	1.032
Age (years)	.001	.940	.904	.976

^aEach row is an univariable analysis that is adjusted for baseline pain scores.

eTable 5. Ordinal Regression Between Chronic Pelvic Pain Score at Follow-up, Controlling for Baseline Chronic Pelvic Pain Score.

Variable	P value	Odds Ratio	95% CI Lower	95% CI Upper
Univariable Model				
Time (between surgery and follow-up)	.374	.981	.941	1.023
Multivariable Model				
Time (between surgery and follow-up)	.392	.982	.940	1.024
CSI at Baseline	.019	1.018	1.003	1.033
Age	.044	.957	.918	.999
Hysterectomy (vs conservative surgery)	.047	.514	.267	.991

eTable 6. Ordinal Regression Between Dysmenorrhea at Follow-Up and Variables of Interest, Controlling for Baseline Pain Scores (Excluding Hysterectomy Group).

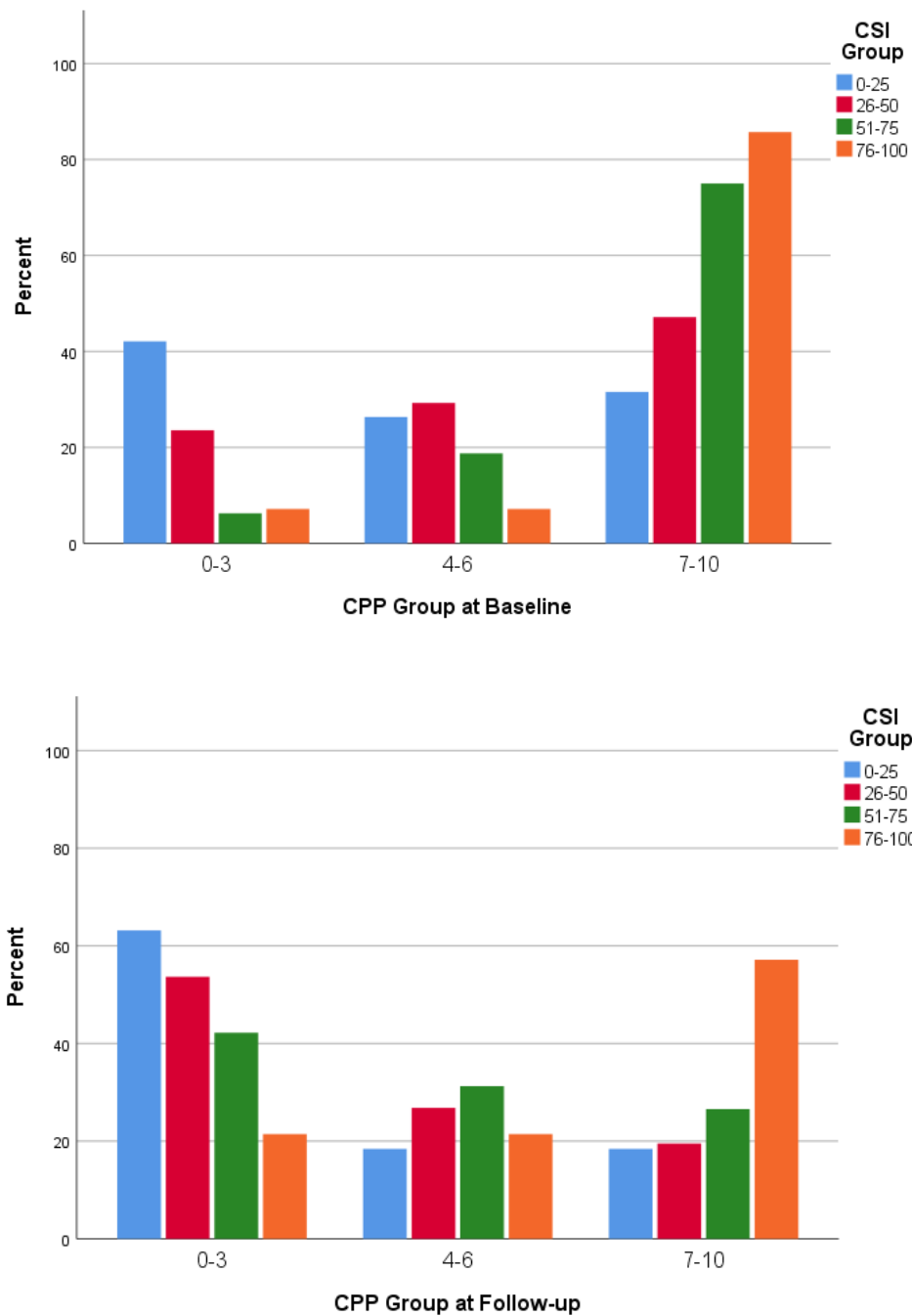
Variable	P Value	Odds Ratio	95% CI	
			Lower	Upper
Dysmenorrhea ^a – Univariable Analyses ^b				
CSI at Baseline (continuous)	.05	1.020	1.000	1.040
Age (years)	.44	.977	.922	1.036
Married (Yes vs. No)	.46	.754	.354	1.604
Education (At Least College vs. High School)	.42	.653	.234	1.820
Stage (III/IV vs. I/II)	.48	.773	.376	1.590
Ethnicity (Caucasian vs. Other)	.18	1.760	.767	4.036
Parous (Yes/No)	.50	1.338	.572	3.134

^aExcluding those without menses at baseline and/or follow-up (e.g., after hysterectomy); n=116

^bEach row is an univariable analysis that is adjusted for baseline pain scores.

eTable 7. Multivariable Ordinal Regression Models Before Backward Elimination.

Variable	P Value	Odds Ratio	Lower 95% CI	Upper 95% CI
Chronic Pelvic Pain				
CSI at Baseline (continuous)	.02	1.018	1.003	1.033
Age	.04	.955	.916	.997
Hysterectomy (vs. conservative surgery)	.06	.528	.274	1.015
Deep Dyspareunia				
CSI at Baseline (continuous)	.008	1.025	1.007	1.045
Age	.07	.954	.906	1.003
Higher Education (At Least College)	.04	.400	.170	.940
Hysterectomy (vs. conservative surgery)	.11	.523	.239	1.146
Dysmenorrhea				
CSI at Baseline (continuous)	.03	1.022	1.002	1.042
Age	.61	.985	.929	1.045
Hysterectomy (vs. conservative surgery)	.001	.051	.009	.269
Dyschezia				
CSI at Baseline (continuous)	.001	1.028	1.011	1.044
Age	.53	.986	.944	1.030
Hysterectomy (vs. conservative surgery)	.04	.474	.236	.949
Back Pain				
CSI at Baseline (continuous)	.02	1.019	1.003	1.034
Higher Education (At Least College)	.05	.482	.233	.999
Hysterectomy (vs. conservative surgery)	.07	.592	.337	1.041



eFigure 1. Chronic Pelvic Pain Scores by Central Sensitization Inventory Group.

The top figure represents the chronic pelvic pain (CPP) scores at baseline and the bottom figure represents the CPP scores at follow-up. The Central Sensitization Inventory (CSI) scores at baseline were divided into four groups and the percentage of people within each CPP group per CSI group was shown.