Pain Assessment After Vaginal Reconstructive Surgeries For Pelvic Organ Prolapse

Original Article

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ABSTRACT

Background: Pelvic organ prolapse (POP) is a common condition affecting women, often requiring vaginal reconstructive surgery to restore pelvic support and improve symptoms. Post-operative pain remains a significant concern, impacting recovery, functional activities, and quality of life. While several studies have evaluated surgical outcomes, limited research has explored the correlation between pain severity, prolapse type, and surgical technique across various daily activities.

Aim: This work aimed to assess post-operative pain experiences in women undergoing vaginal reconstructive surgery for POP and determine whether prolapse severity or surgical techniques influence pain severity. Additionally, the study evaluates pain across multiple activities to provide a functional perspective on post-operative recovery.

Materials and Methods: A total of 69 women diagnosed with POP underwent various vaginal reconstructive procedures, including total vaginal hysterectomy (TVH), perineorrhaphy, anterior colporrhaphy, posterior repair fascia, and sacrospinous fixation. Post-operative pain was assessed across multiple activities, including urination, bowel movements, walking, running, lifting, working, and sleeping. Statistical analysis was conducted to examine the relationship between pain severity, prolapse stage, and surgical type.

Results: Post-operative pain was reported across all assessed activities, with the highest pain levels noted during lifting (49.3%), running (50.7%), and bowel movements (45.5%). Pain was also a significant concern during sleep, affecting 71% of participants. However, no significant correlation was found between pain severity and prolapse type or surgical technique ($p>0.05$ for all comparisons). These findings suggest that individual factors, rather than surgical approach or prolapse severity, may influence pain perception and recovery.

Conclusion: Post-operative pain following vaginal reconstructive surgery for POP is multifaceted and affects various daily activities, but it is not significantly associated with the type of surgery or prolapse severity. This highlights the need for individualized pain management strategies, considering factors beyond surgical technique. Future research should include larger sample sizes, long-term follow-ups, and preoperative pain assessments to improve post-operative care and patient outcomes.

Key Words: Functional recovery, pain assessment, pelvic organ prolapse, post-operative pain, prolapse severity, total vaginal hysterectomy, vaginal reconstructive surgery.

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INTRODUCTION

Pelvic organ prolapse (POP) is a disorder where one or more pelvic organs (i.e., bladder, uterus, small bowel, rectum) descend from their normal position and bulge into or through the vagina[1]. Symptoms include sensations of pressure or pain in the pelvis and/or vagina, urinary incontinence, difficulties with defecation, and uncomfortable intercourse[2]. Major risk factors for POP are older age, high body mass index, increasing parity, and number of vaginal deliveries[3].

POP greatly affects women's well-being and is associated with a diminished quality of life, increased risk of depression and anxiety, and negative body image. Women with POP often report self-consciousness, isolation, and avoidance of sexual intimacy due to embarrassment or shame[4]. While surgery for pelvic organ prolapse can be performed using multiple approaches including robotic, laparoscopic, and vaginal approaches with and without mesh augmentation, 80–90% are performed trans-vaginally without mesh (i.e., transvaginal native tissue repair)[5].

The two most common native tissue procedures for correcting apical prolapse are the sacrospinous ligament fixation (SSLF) and the uterosacral ligament suspension

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(ULS)[6]. Post-operative pain, namely gluteal and posterior thigh pain, is well described for women undergoing SSLF, and generally resolves within 6 weeks for the majority of patients[7].

Post-operative neuropathic pain has also been described for patients undergoing ULS; however, these reports are primarily focused on pain as an immediate post-operative complication but not on outcomes potentially related to the pain, such as return to activity, pain medication use, and functional status[8]. The aim of the study was to assess the pain in women who have undergone vaginal reconstructive surgery for pelvic organ prolapse early post-operative, after one week.

PATIENTS AND METHODS

After ethical committee approval (MS.24.03.2731) and written consents from the patients, this prospective cohort study was performed on total 69 women who attended urogynecology and general gynecology outpatient clinic at the Obstetrics & Gynecology department, Mansoura University Hospital to evaluate the outcomes of surgical management in patients diagnosed with Pelvic Organ Prolapse (POP) over a one-year period, from March 1, 2024, to February 1, 2025, at the Obstetrics and Gynecology Department of Mansoura University Hospital.

Study population:

Patients attending urogynecology and general gynecology outpatient clinic at the Obstetrics & Gynecology department, Mansoura University Hospital with the following inclusion and exclusion criteria.

Inclusion criteria:

1. Patients diagnosed with Pelvic Organ Prolapse (POP) of stage >2 using the globally recognized Pelvic Organ Prolapse-Quantification System (POP-Q).

2. Elective surgical management of POP.

3. Women >40 years of age.

Exclusion criteria:

1. Women with abnormal cervical cytology.

2. Women with abnormal uterine bleeding.

3. Women with gynecological tumors.

4. Women with concomitant medical problems precluding general anesthesia.

5. Women with a prior history of endometriosis.

6. Women with a prior history of non-gynecological pelvic pain.

Methods:

All eligible patients were subjected to the following:

Preoperative assessment:

1. Detailed history taking including:

- Obstetric history (parity, mode of delivery).
- Medical and surgical history.
- Urinary and bowel symptoms.

2. Clinical examination:

- General and abdominal examination.
- Pelvic examination using POP-Q system for staging.

3. Investigations:

- Routine preoperative laboratory tests.
- Pelvic ultrasound to assess pelvic organs.

Surgical intervention:

• The vaginal surgical procedures for pelvic organ prolapse were performed with or without concomitant continence surgery.

• Patients underwent elective surgical management according to clinical indications.

• Surgical procedures included vaginal hysterectomy, anterior or posterior colporrhaphy, sacrospinous fixation, or mesh repair.

Associated with Standard Continence Procedures Like:

1. Kelly's suture.

2. Vaginal mid-urethral sling (MUS) procedures (e.g., transobturator tape).

Postoperative follow-up:

• Patients were followed up postoperatively.

• Assessment included symptom relief, anatomical success (using POP-Q), and quality of life improvement.

Outcome measures:

1.Postoperative examination by the operating surgeon to assess recurrence of prolapse and the anatomical success or failure of the operation (objective outcome).

2. Pelvic pain assessment using a functional pain scale.

3. Evaluation of the quality of life of patients postoperatively.

Sample Size:

Sample size calculation was based on pain change after vaginal reconstructive surgery for pelvic organ prolapse retrieved from previous research[9]. Using G power program version 3.1.9.7 to calculate sample size based on effect size of 0.42, using 2-tailed test, α error=0.05

and power=90.0%, the total calculated sample size was 62 cases and by adding 10% to compensate for possible drop out, the total sample size will be 69 cases.

Ethical Considerations:

The patient data were anonymous. Data presentation were not be by the patient's name but by diagnosis and patient confidentiality was protected. An informed consent was taken from all participants, it was in Arabic language and confirmed by date and time. confidentiality was preserved by assigning a number to patients initials and only the investigator knew it.

• Chi-Square test was used to compare qualitative data between groups as appropriate

• The Spearman's rank-order correlation is used to determine the strength and direction of a linear relationship between two non-normally distributed continuous variables and / or ordinal variables.

Statistical Analysis:

Data analysis was performed by SPSS software, version 26 (SPSS Inc., PASW statistics for windows version 26. Chicago: SPSS Inc.). Qualitative data were described using number and percent. Quantitative data were described using median (minimum and maximum) non-normally distributed data and mean± Standard deviation for normally distributed data after testing normality using Kolmogrov-Smirnov test. Significance of the obtained results was judged at the (0.05) level.

• Chi-Square test was used to compare qualitative data between groups as appropriate

• The Spearman's rank-order correlation is used to determine the strength and direction of a linear relationship between two non-normally distributed continuous variables and / or ordinal variables.

RESULTS

The study population had a mean age of 53.2±9.37 years, ranging from 36 to 75 years, indicating that most participants were middle-aged or older. All participants were multiparous (100%), reinforcing the known risk factor of childbirth for pelvic organ prolapse. Regarding marital status, 85.5% (59/69) of the participants were married, while 14.5% (10/69) were either divorced or widowed. Hypertension was the most common comorbidity, affecting 27.5% (19/69) of the cases, followed by diabetes mellitus (10.1%, 7/69) and ischemic heart disease (7.2%, 5/69). These conditions could influence recovery and pain perception post-surgery (Table1).

Table 1: Demographic, Obstetric, and Medical History:

	N	%
Age / years Mean±SD (Min-MAX)	53.2±9.37 (36-75)	
Parity		
Multipara	69	100.0
Marital status		
Divorced / widow	10	14.5
Married	59	85.5
HTN	19	27.5
Diabetic	7	10.1
Ischemic heart disease	5	7.2

Among the 69 patients, the most prevalent prolapse type was IIIC (29%, 20/69), followed by IIBa (17.4%, 12/69) and IIIBa (17.4%, 12/69). Meanwhile, IIBp and IIIC each constituted 15.9% (11/69) of cases. The least common prolapse types were IIIBp (1.4%, 1/69) and IVC (7.2%, 5/69). The diversity in prolapse severity may influence post-operative pain outcomes (Table 2).

Table 2: Types of Prolapse:

	***N*= 69**	**%**
Type of prolapse		
IIC	8	11.6
IIBa	12	17.4
IIBP	11	15.9
IIIC	20	29
IIIBa	12	17.4
IIIBp	1	1.4
IVC	5	7.2

The most frequently performed procedure was total vaginal hysterectomy (TVH) alone, accounting for 39.1% (27/69) of cases. Other combinations included TVH+PRF (21.7%, 15/69), TVH+PC (13%, 9/69), TVH+BSSF (7.2%, 5/69), and TVH+AC (18.8%, 13/69). The variation in surgical approaches is essential in understanding differences in pain experiences (Table 3).

Table 3: Types of Operations:

	***N*= 69**	**%**
Operation		
TVH	27	39.1
TVH+PRF	15	21.7
TVH+PC	9	13.0
TVH+BSSF	5	7.2
TVH+AC	13	18.8

Post-operative pain levels varied among different activities. Regarding pain with urination, 33.3% (23/69) reported some pain, while 26.1% (18/69) experienced severe pain. For pain with bowel movements, 29% (20/69) suffered severe pain, and 15.9% (11/69) were incapable of functioning due to pain. In terms of pain with walking, 26.1% (18/69) had moderate pain, and

20.3% (14/69) reported severe pain. Running caused severe pain in 29% (20/69) of cases, while 20.3% (14/69) were incapacitated. Pain with lifting followed a similar pattern, with 29% (20/69) experiencing severe pain and 20.3% (14/69) unable to function. Pain while working was moderate in 31.9% (22/69) of cases, while 15.9% (11/69) reported incapacity. For pain during sleep, 44.9% (31/69) experienced some pain, and 26.1% (18/69) had moderate discomfort (Table 4).

Table 4: Pain Degree Distribution:

	***N*= 69**	**%**
Pain with urination		
No pain	8	11.6
Some pain	23	33.3
Moderate pain	12	17.4
Severe pain	18	26.1
Incapable of function because of pain	8	11.6
Pain with bowel		
No pain	5	7.2
Some pain	16	23.2
Moderate pain	17	24.6
Severe pain	20	29.0
Incapable of function because of pain	11	15.9
Pain with walking		
No pain	7	10.1
Some pain	17	24.6
Moderate pain	18	26.1
Severe pain	14	20.3
Incapable of function because of pain	13	18.8
Pain with running		
No pain	7	10.1
Some pain	13	18.8
Moderate pain	15	21.7
Severe pain	20	29.0
Incapable of function because of pain	14	20.3
Pain with lifting		
No pain	2	2.9
Some pain	16	23.2
Moderate pain	17	24.6
Severe pain	20	29.0
Incapable of function because of pain	14	20.3
Pain with working		
No pain	6	8.7
Some pain	16	23.2
Moderate pain	22	31.9
Severe pain	14	20.3
Incapable of function because of pain	11	15.9
Pain with sleeping		
No pain	20	29.0
Some pain	31	44.9
Moderate pain	18	26.1

Spearman's correlation analysis showed no significant relationship between age and pain. For example, the correlation coefficient for pain with urination (r=0.093, P=0.445) and pain with walking (r=0.047, P=0.702) were not significant. The same trend was observed for other activities, suggesting that age does not strongly influence post-operative pain perception (Table 5).

Table 5: Correlation Between Age and Degree of Pain:

			Age (years)
Spearman's rho	pain with urination	*r*	.093
		p value	.445
	pain with bowel	*r*	-.020
		p value	.871
	pain with walking	*r*	.047
		p value	.702
	pain with running	*r*	-.054
		p value	.658
	pain with lifting	*r*	-.019
		p value	.879
	pain with working	*r*	-.025
		p value	.841
	pain with sleeping	*r*	-.019
		p value	.878

The distribution of pain with urination varied across surgical types, with 14.8% (4/27) of TVH patients experiencing no pain compared to 20% (1/5) of TVH+BSSF cases. Among TVH+PRF cases, 40% (6/15) reported some pain, while 33.3% (9/27) of TVH cases experienced severe pain. The chi-square test (χ^2=9.98, *P*=0.868) suggests no significant association (Figure 1).

Pain levels also varied among procedures, with 7.4% (2/27) of TVH cases reporting no pain compared to 20% (1/5) of TVH+BSSF. Severe pain was more common in TVH+PRF (53.3%, 8/15) than in other surgeries. The chi-square test (χ^2=20.56, P=0.196) did not show statistical significance.

40% (2/5) of TVH+BSSF patients had some pain, while 38.5% (5/13) of TVH+AC cases reported moderate pain. Severe pain affected 22.2% (6/27) of TVH cases, and incapacity due to pain was most common in TVH+PC (33.3%, 3/9). The chi-square test (χ^2=8.08, *P*=0.947) indicated no significant relationship.

Severe pain was highest among TVH+AC (38.5%, 5/13) and TVH (25.9%, 7/27) cases. Incapacity due to pain was reported by 38.5% (5/13) of TVH+AC cases. However, the chi-square test (χ^2=16.18, P=0.440) did not show a statistically significant association.

Severe pain was most prevalent in TVH+PC (44.4%, 4/9) cases. The chi-square test (χ^2=10.72, P=0.826) suggests no significant correlation between surgery type and lifting-related pain.

Moderate pain was common across surgeries, with 44.4% (12/27) of TVH cases being affected. Incapacity due to pain was most frequent in TVH+BSSF (60%, 3/5)

cases. The chi-square test (χ^2=15.84, P=0.464) was not statistically significant.

Patients undergoing TVH had the highest percentage of no pain (29.6%, 8/27), while 40% (6/15) of TVH+PRF cases had moderate pain. The chi-square test (χ^2=4.14, *P*=0.845) indicated no significant difference.

The severity of prolapse did not show a significant impact on pain levels across activities. For example, pain with urination had a chi-square value of χ^2=8.46, P=0.389, while pain with walking had χ^2=3.88, P=0.868. Pain with running (χ^2=6.37, P=0.606) and pain with lifting (χ^2=7.06, P=0.531) also lacked statistical significance (Figure 2).

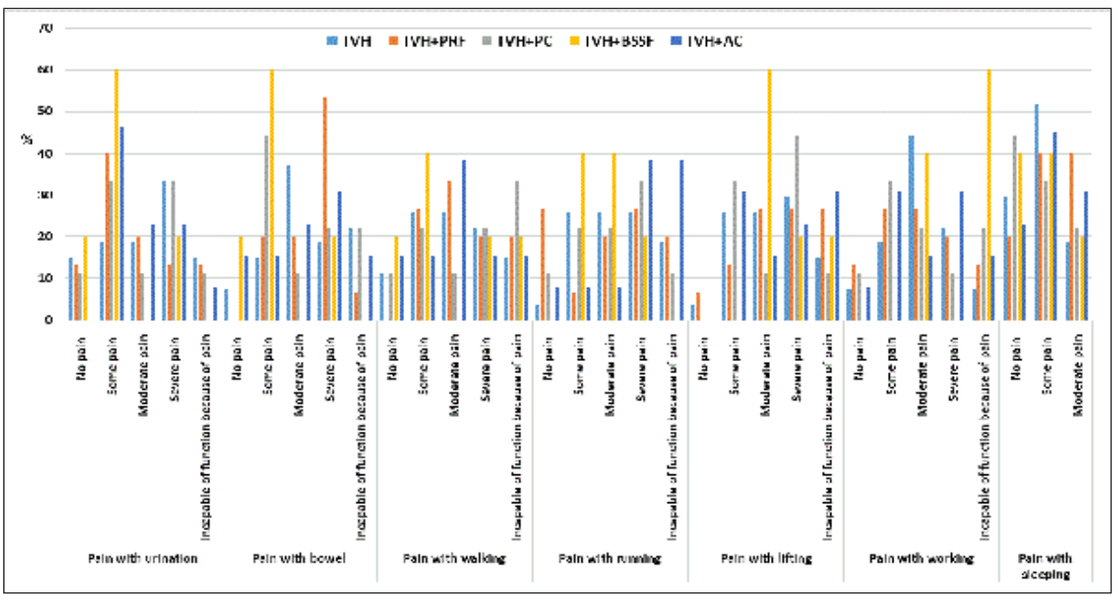

Fig (1): Relation Between Types of Operations and Pain:

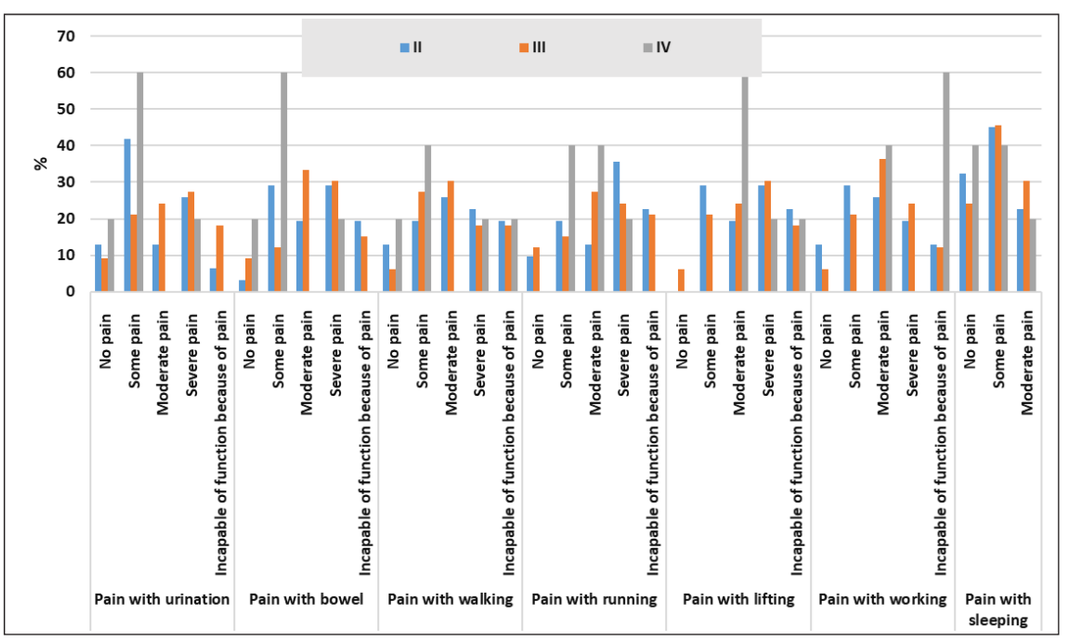

Fig. 2: Relations between types of prolapse and pain.

DISCUSSION

Our study provides a comprehensive evaluation of post-operative pain by assessing pain levels across multiple daily activities, offering a more realistic understanding of functional impairment. It focuses on native tissue repairs, avoiding complications associated with transvaginal mesh. The study also includes various surgical techniques, allowing for a comparative analysis of pain outcomes. Additionally, our use of robust statistical analysis enhances the reliability of findings, and the study contributes valuable insights for personalized post-operative pain management.

The study highlights the post-operative pain as a significant concern for women undergoing vaginal reconstructive surgery for POP. Pain was reported across multiple activities, including urination, bowel movements, walking, lifting, running, and sleeping. However, no statistically significant correlation was found between the type of surgery performed and post-operative pain severity, suggesting that other factors, such as individual pain thresholds and healing responses, may play a greater role. prolapse severity alone does not predict pain outcomes.

Understanding the factors influencing post-surgical pain, including prolapse severity, type of surgery, and individual patient characteristics, is crucial for improving pain management and optimizing recovery outcomes[10].

Although several studies have explored post-operative outcomes following vaginal reconstructive surgery, there is limited research on the correlation between different prolapse types, surgical techniques, and pain severity across various daily activities. Many previous studies have either focused on specific surgical techniques, such as transvaginal mesh repairs, or evaluated only short-term pain levels without considering the broader implications on functional recovery[11,12]. Additionally, preoperative pain assessment is often overlooked, making it difficult to determine whether post-operative pain is due to the surgery itself or pre-existing conditions. Given these gaps in the literature, our study aims to provide a more comprehensive understanding of post-surgical pain patterns in women undergoing vaginal reconstructive procedures[13].

Consequently, this study was conducted and aimed to evaluate post-operative pain experiences among women undergoing vaginal reconstructive surgery for POP and to determine whether prolapse severity, surgical technique, or other factors influence pain perception. Additionally, we aimed to assess pain across multiple daily activities, such as urination, bowel movements, walking, running, lifting, working, and sleeping, to provide a functional perspective on post-operative recovery.

This prospective cohort study was conducted at the Obstetrics & Gynecology Department of Mansoura University Hospital from April 2024 to February 2025. It included 69 women diagnosed with stage II or higher pelvic organ prolapse (POP), classified according to the Pelvic Organ Prolapse Quantification System (POP-Q).

Regarding Demographic and Medical History, our study included 69 women with an average age of 53.2±9.37 years, ranging from 36 to 75 years. All participants were multiparous, highlighting a history of childbirth as a common factor among the study population. Marital status data revealed that 85.5% of participants were married, while 14.5% were either divorced or widowed. Regarding medical history, 27.5% of the women had hypertension, 10.1% were diabetic, and 7.2% had ischemic heart disease, which could be important factors in post-operative pain perception and recovery.

Compared to other studies, Cummings *et al.*[10] explored the impact of age on opioid use following pelvic organ prolapse (POP) surgery and found that younger women were more likely to require opioids postoperatively. This suggests that younger patients may experience greater pain perception or report pain more readily, possibly due to heightened sensitivity or a lower pain tolerance. Similarly, Shatkin-Margolis *et al.*[14] found that tobacco use, preexisting depression, and anxiety were predictive factors for higher postoperative pain. These findings indicate that pain perception is influenced by both physical and psychological factors, which should be considered when evaluating post-operative pain outcomes in our patient cohort.

Regarding Types of Prolapse, our study revealed various types of pelvic organ prolapse (POP) among the participants. The most common prolapse type was IIIC, accounting for 29% of cases. Other frequently observed types included IIBa (17.4%) and IIIBa (17.4%), while less common forms such as IIC (11.6%), IIBP (15.9%), IV C (7.2%), and IIIBp (1.4%) were also noted. This distribution highlights the diversity in prolapse severity and suggests that different surgical approaches may be necessary based on the specific prolapse type.

These findings align with other research, Liedl *et al.*[15] found that POP severity was not necessarily correlated with preoperative pain levels. Their study reported that 67% of patients with stage II-IV POP experienced moderate-to-severe pain before surgery, with pain improving significantly postoperatively. Similarly, Belayneh *et al.* [13] noted that patients with stage III and IV prolapse showed significant improvement in quality of life after surgery, reinforcing the idea that prolapse severity does not necessarily dictate pain severity but

does impact quality of life. Our findings align with these studies, as pain severity in our patients was not significantly correlated with prolapse stage, suggesting that other factors such as nerve involvement and muscle dysfunction may play a more significant role in pain perception.

Regarding Types of Surgeries Performed, a variety of surgical interventions were employed in the study. The most commonly performed procedure was total vaginal hysterectomy (TVH) alone, accounting for 39.1% of cases. This was followed by TVH with posterior repair fascia (21.7%), TVH with anterior colporrhaphy (18.8%), TVH with perineorrhaphy (13%), and TVH with bilateral sacrospinous fixation (7.2%). The range of procedures performed reflects the tailored approach taken to address different levels of prolapse severity and patient needs.

In concordance with our study, Lukacz *et al.*[16] examined outcomes following uterosacral and sacrospinous ligament suspensions, finding that there was no significant difference in post-operative pain and quality-of-life improvements between the two procedures. Similarly, Barber *et al.*[9] observed that postoperative pain levels generally returned to below baseline levels within 4-6 weeks, irrespective of the specific surgical technique used. Our findings align with these results, as we observed no statistically significant difference in pain outcomes based on the type of procedure performed.

Regarding Pain Distribution Across Different Activities, Post-operative pain was assessed in relation to various activities, revealing differing levels of discomfort among the participants.

Pain with urination was reported by a significant number of participants, with 33.3% experiencing mild pain, 17.4% reporting moderate pain, 26.1% suffering from severe pain, and 11.6% being incapacitated due to pain. Similarly, pain during bowel movements was noted, with 29% reporting severe pain and 15.9% experiencing such intense pain that they were unable to function.

Mobility-related pain was also assessed, with 26.1% reporting moderate pain while walking, 20.3% experiencing severe pain, and 18.8% unable to function due to pain. Running exacerbated these issues, with 29% of participants reporting severe pain and 20.3% unable to function. Pain with lifting was also significant, with 29% reporting severe pain and 20.3% being completely incapacitated.

Pain related to working and sleeping was evaluated as well. While 31.9% reported moderate pain with working, 20.3% experienced severe pain, and 15.9% were unable to function. When it came to sleeping, 44.9% of participants experienced mild pain and 26.1% had moderate pain, affecting their overall recovery and quality of rest.

Shi *et al.*[11] investigated pain following transvaginal mesh (TVM) surgery and found that 2.7% of patients experienced severe pain, primarily due to mesh-related complications. In contrast, our study reports higher pain levels, likely due to the absence of mesh and the longer healing period associated with native tissue repairs. Similarly, Niro *et al.*[12] compared traditional vaginal repairs with and without mesh and found that mesh repairs initially had higher pain scores but showed no significant difference in pain after 3-6 months. This suggests that while our non-mesh procedures might reduce long-term complications, they still present significant early post-operative pain concerns.

Several discrepancies exist between our study and the findings of other studies. One major discrepancy is the correlation between post-operative pain and surgical technique. Our study found no significant difference in pain levels based on the type of surgery performed, whereas Niro *et al.*[12] and Shi *et al.*[11] reported higher post-operative pain in patients who underwent mesh-based repairs. This difference likely arises because our study exclusively focused on native tissue repairs, which generally avoid the complications associated with transvaginal mesh, such as mesh erosion, nerve irritation, and inflammation.

Regarding Pain Correlation with Type of Surgery, an analysis was conducted to determine if the type of surgical procedure had a significant impact on post-operative pain. Our study results showed no significant correlation between the type of surgery and pain severity in any of the assessed activities. Pain levels for urination (p=0.868), bowel movements (p=0.196), walking (p=0.947), running (p=0.440), lifting (p=0.826), working (p=0.464), and sleeping (p=0.845) were comparable across different surgical procedures. This suggests that pain perception post-surgery is likely influenced by other factors such as individual pain thresholds and healing responses rather than the specific type of surgical intervention.

Sappenfield *et al.*[17] found that preoperative pelvic pain had a stronger influence on post-operative pain than the type of surgery itself. Women with pre-existing pain had higher post-operative pain scores, regardless of the surgical procedure performed. Similarly, Barber *et al.*[18] validated pain assessment scales and found that pain perception varies greatly among individuals, suggesting that personal pain thresholds may be more influential than surgical technique in determining post-operative pain levels. These findings reinforce the need for individualized pain management strategies.

Regarding Pain Correlation with Type of Prolapse, similar to the surgical analysis, an examination of the relationship between prolapse type and pain severity was conducted. The severity of pelvic organ prolapse did not significantly correlate with post-operative pain in our study (p>0.05 for all comparisons). This suggests that prolapse severity alone does not predict pain levels.

Liedl *et al*.[15] also found no correlation between POP stage and preoperative pain, supporting the idea that pain is influenced by muscle dysfunction, nerve compression, and individual pain perception rather than prolapse severity. These findings highlight the complexity of pain management in pelvic floor disorders.

Regarding Correlation Between Age and Pain, a correlation analysis was performed to explore whether age had any impact on post-operative pain severity. The results revealed no significant relationship between age and pain perception across different activities, with p-values ranging from 0.445 to 0.879. This indicates that pain severity is not necessarily higher or lower based on age alone.

In contrast, Cummings *et al*.[10] found that younger women were more likely to use opioids postoperatively, suggesting they may experience or report higher pain levels. Shatkin-Margolis *et al*.[14] also identified younger age, tobacco use, and preexisting depression as independent predictors of higher post-operative pain. These findings contrast with our results, possibly due to differences in sample size or variations in pain management strategies.

Strengths of Our Study:

Our study provides a comprehensive evaluation of post-operative pain by assessing pain levels across multiple daily activities, offering a more realistic understanding of functional impairment. It focuses exclusively on native tissue repairs, avoiding complications associated with transvaginal mesh. The study also includes various surgical techniques, allowing for a comparative analysis of pain outcomes. Additionally, our use of robust statistical analysis enhances the reliability of findings, and the study contributes valuable insights for personalized post-operative pain management.

Limitations of Our Study:

Despite its strengths, our study has several limitations that should be acknowledged. One major limitation is the small sample size (69 participants), which may restrict the generalizability of findings. The study also lacks long-term follow-up data, making it difficult to assess chronic pain trends beyond the immediate post-operative period. Additionally, preoperative pain levels were not assessed, limiting our ability to determine whether pre-existing pain influenced post-surgical outcomes. Psychological factors such as anxiety and depression, which are known to affect pain perception, were also not evaluated, potentially impacting the interpretation of post-operative pain severity. Future studies should address these limitations by expanding sample sizes, incorporating preoperative assessments, and extending follow-up periods.

CONCLUSION

The study highlights that post-operative pain is a significant concern for women undergoing vaginal reconstructive surgery for POP. Pain was reported across multiple activities, including urination, bowel movements, walking, lifting, running, and sleeping. However, no statistically significant correlation was found between the type of surgery performed and post-operative pain severity, suggesting that other factors, such as individual pain thresholds and healing responses, may play a greater role. Similarly, the severity of POP did not correlate with pain levels, reinforcing that prolapse severity alone does not predict pain outcomes.

Overall, our findings suggest that post-operative pain management should be tailored to individual patients rather than based solely on the type or severity of POP. Given that younger patients, smokers, and those with anxiety or pre-existing pain tend to experience greater post-operative pain, a more personalized approach to pain management is needed.

ABBREVIATIONS

POP: Pelvic Organ Prolapse.

TVH: Total Vaginal Hysterectomy.

SSLF: Sacrospinous Ligament Fixation.

ULS: Uterosacral Ligament Suspension.

POP-Q: Pelvic Organ Prolapse Quantification System.

MUS: Mid-Urethral Sling.

TVM: Transvaginal Mesh.

CONSORT: Consolidated Standards of Reporting Trials

HTN: Hypertension.

BSSF: Bilateral Sacrospinous Fixation.

PFR: Pelvic floor repair.

PC: Posterior colpoperineorrhaphy.

AC: Anterior Colporrhaphy.

CONFLICTS OF INTERESTS:

The authors have no conflicts of interest to declare.

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