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Pelvic organ prolapse (POP) symptom progression and treatment satisfaction from the patients' perspective



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Abstract

Background Pelvic organ prolapse (POP) is a condition where pelvic organs descend into the vaginal canal due to weakened pelvic floor muscles. Nearly 50% of women will develop some degree of POP, with incidence peaking at ages 50–54 and 65–69. This study aims to identify early symptoms of POP and assess their progression, improvement, or regression from the patient's subjective perspective. This study also aims to understand patient satisfaction as it relates to treatment modalities.

Methods An exploratory cross-sectional survey was conducted amongst participants with a POP diagnosis that were over the age of eighteen and lived within the United States.

Results Among 158 participants, the feeling of a bulge (mean severity 6.62 reduced to 3.48), back pain (5.49 to 3.51), and constipation (5.56 to 3.91) showed the greatest improvement after surgical and non-surgical treatments for POP. Other common pelvic floor symptoms, including stress urinary incontinence (4.33 to 2.88), fecal incontinence (3.02 to 2.08), and dyspareunia (4.30 to 3.59), showed minimal improvement, while pelvic pain (4.73 to 4.00) and urinary retention (3.55 to 3.44) remained largely unchanged. Non-surgical treatments had lower satisfaction scores as compared to physical therapy and pessary usage. Surgical treatments such as posterior vaginal repair (7.02), anterior bladder repair (6.69), and vaginal vault sacrocolpopexy (7.45) showed higher satisfaction ratings.

Conclusions Findings highlight the critical need for understanding symptom progression and regression as told from the patient's perspective. While data analysis shows resolution of some symptoms, the persistence of others post-treatment suggests that current treatment protocols may not fully address all aspects of POP effectively or may be unrelated.

Keywords Pelvic organ prolapse, POP, Symptom severity, Symptom progression, Treatment satisfaction, Conservative management, Surgical treatment, Pelvic floor muscle therapy

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Background

Pelvic organ prolapse (POP) is a clinical condition where one or more pelvic organs (bladder, uterus, rectum, or small bowel) descend from their normal positions into the vaginal canal due to the weakening or damage of the pelvic floor muscles and connective tissues [1]. Symptoms include pelvic pressure, a visible or palpable bulge in the vaginal area, urinary and bowel dysfunction, and sexual discomfort [1, 2]. Nearly 50% of women will develop some degree of POP, with incidence peaking at ages 50 to 54 and 65 to 69 [3, 4].

The severity and progression of POP symptoms vary widely amongst individuals, often influencing the time to diagnosis. Current literature varies on how POP is assessed, with some studies using symptomatic questionnaires only, some using clinical examination alone, and others using a combination of the two [5]. Brown et. al analyzes the prevalence of POP based on questionnaires that evaluate through symptoms alone and found the strongest correlation of POP with symptoms described as "seeing' or 'feeling' a vaginal bulge" [5]. However, this association does not account for women who may be asymptomatic or feel a range of other symptoms not necessarily associated with visualization beyond the hymen. These symptoms- fecal incontinence, constipation, dyspareunia, feeling of a bulge, back pain, pelvic pain, urinary retention, and stress urinary incontinence - are vague and often difficult to immediately correlate to POP without direct clinical suspicion [6]. There is currently limited research on symptom progression in POP from a subjective patient perspective [7], and it does not explore resolution beyond a limited period or seek to assess how specific symptoms were addressed. Additionally, current literature on treatment modalities does not stratify based on how a chosen treatment correlates to specific symptom progression, improvement, or resolution long-term, as told from the patient's perspective.

Research indicates that surgical treatment options for POP are effective [8], but there are significant gaps in the literature regarding long-term outcomes beyond ten years. Current studies predominantly focus on surgical interventions and follow primary surgeries up to a decade, often neglecting reoperation cases [9]. This limits the understanding of long-term effectiveness and complications, particularly for re-operative interventions. Additionally, the potential benefits of combining surgical and non-surgical treatments remains underexplored. Conservative approaches, such as pelvic floor muscle training (PFMT) [10], pessary use [11], and lifestyle modifications [12], lack sufficient research on their longterm effectiveness when compared to surgical options in terms of patient outcomes, patient satisfaction, and recurrence rates. Current studies find that women have high overall satisfaction with PFMT when compared to control groups that received no treatment, sham or placebo treatment. However, this was only looking at how PFMT addressed urinary symptoms and did not account for other symptoms or women who developed a need for further treatment [10]. In comparison, Nüssler et. all found that for routine surgical treatment, symptom reduction was significant after 5 years and patient satisfaction remained at 70% or greater [9]. Understanding these factors is crucial for developing comprehensive treatment plans and setting realistic patient expectations.

Beyond the physiological risks, personal accounts from patients highlight not only the discomforts of symptom management and treatment but also the shame associated with this diagnosis [4]. This condition has significant biopsychosocial impacts on women, and there is a general lack of knowledge regarding POP progression. Carroll et al. interviewed 930 women diagnosed with POP, exploring three core themes: biological/physical, psychological, and social. A consistent sentiment amongst these patients was fear of symptom progression, avoidance of activity to limit symptom exacerbation, and the onset of various symptoms prior to and well before the presence of a bulge [7]. POP literature as it stands, has a lack of data regarding progression and regression, despite this condition being widely accepted as "progressive". Worsening conditions can be greatly reduced with the use of conservative and vaginal support treatments such as pessary insertion and PFMT [13]. This variability necessitates a thorough understanding of POP symptom onset and progression to improve selection of treatment modality and symptom management. Therefore, our research aims to identify early symptoms of POP prior to diagnosis, identifying those that consistently manifest first amongst patients in hopes of distinguishing subjective symptoms unique to POP from those common to other conditions. We also aim to understand symptom progression and patient satisfaction with symptom management, assessing any trends that arise and may offer insights into treatment approaches that offer better and longer lasting resolution anecdotally. By understanding which symptoms persist and which resolve on a patient basis, and correlating these outcomes with specific treatments, we hope to shed light on the need for research on more targeted and effective treatment strategies.

Methods

Data acquisition and study population

This study employed a cross-sectional survey design to analyze the relationship between symptom progression, patient satisfaction, and time to diagnosis of pelvic organ prolapse (POP). The survey was administered using the Qualtrics platform and distributed to members of a Facebook group titled Association for Pelvic Organ Prolapse Support (APOPS), with just under 2,500 members at the time of survey completion. It is not possible to know how many of those members are active and therefore it is uncertain to estimate an accurate response rate. Inclusion criteria required participants to have a diagnosis of pelvic organ prolapse and have undergone at least one treatment modality (whether surgical or non-surgical). Surgical treatment was defined as having one or more of the following procedures: anterior bladder repair, posterior vaginal repair, urethral sling (urethral repair), vaginal vault sacrocolpopexy, hysterectomy, uterine sparing, colpocleisis, and "other" with an option for free text. Non-surgical treatment was defined as follows: pessary insertion, physical therapy, and "other", with an option for free text. Information relating to how patients obtained their diagnosis and provider follow-up was not collected.

Informed consent was obtained electronically and posted along with the survey link. The survey ensured confidentiality and anonymity for all participants; Age, race, and income data were the only demographic information recorded for analysis. There was no limit regarding how recent participants were diagnosed with POP, the number of pregnancies, or how recently their pregnancy occurred. The survey was open from 09/18/23 to 10/18/23. Individuals under the age of eighteen and outside of the United States of America were excluded from the study. Participants were not incentivized and completed the survey voluntarily. The study was approved by the Rocky Vista University Institutional Review Board (RVU IRB 2023-132). All methods were conducted in accordance with relevant guidelines and regulations or declarations of Helsinki.

Survey development

The survey (Supplementary File 1) was created through anecdotal patient stories and experiences from members of Association for Pelvic Organ Prolapse Support (APOPS). Information regarding symptomatology and diagnostic criteria was adapted from APOPS, The American College of Obstetrics and Gynecologists (ACOG), American Uro-Gynecologic Society (AUGS), and National Institutes of Health (NIH). Survey participants were asked to answer ten questions consisting of multiple-choice, Matrix Table, Likert scale, and continuous scale. The survey included questions designed to assess symptom severity (on a 0 to 10 scale), time to diagnosis, treatment satisfaction (on a 0 to 10 scale) and demographic factors. Patients were asked to rate their symptom severity at onset, the moment of seeking care, and post-treatment or at the time of survey completion. Information used to select treatment modality choices reflects current frequent clinical practices and guidelines as adapted from sources listed above; Patients had the opportunity for free text if treatment modality was not listed. The reliability of the survey questions was pre-assessed through a pilot test involving a small subset of the target population prior to main data collection. APOPS founder and CEO was consulted in the creation and approval of survey to ensure inclusivity.

Statistical analysis

Survey data was compiled into a single database. This database was cleaned to remove incomplete responses or participants that did not meet the inclusion/exclusion criteria. All data was summarized as frequencies and percentages for categorical data. Any association between categorical variables were assessed using contingency tables using an asymptotic chi-square test. Continuous variables were summarized as means and standard error estimates. These continuous variable assessments were assessed using Generalized Linear Models. All statistical association assessments were performed in SAS/STAT v.9.4 (SAS Institute Inc., Cary, NC). Significant differences were declared at a confidence level of 95% ($P \le 0.05$).

Results

Demographics and cohort descriptives

A total of 158 women within the United States responded to the survey, which was only around 6% of the APOPS Facebook group population at the time of survey completion; however, it is unclear how many of those account are active. Among these participants, 144 (91.14%) are self-described as White. Participant age group distribution was 0.63% for those 18 to 29, 19.62% for those 30 to 39, 18.35% for those 40 to 49, 21.52% for those 50 to 59, 28.48% for those 60 to 69 and 11.39% for those 70 to 79. Over 61.39% of the participants were 50 years or older. The annual income reported leaned towards higher incomes of above \$USD 90,000 (48.1%), with 17.72% of people preferring not to answer. Age was significantly associated with income where younger age groups reported lower income more often than older age groups, however the highest incomes were reported in the 60 to 69 years age group. The most frequent number of pregnancies were two with 50.63%. Only 31.02% reported three or more pregnancies; The largest number of pregnancies reported was seven. The most frequent delivery method was vaginal with 93.88%, 92.86% and 95.83% for the first three deliveries. No participant reported having a cesarean after their third delivery.

Mean POP symptoms before seeking care, at the time of seeking care and at the time of survey completion are presented in Table 1. Symptoms like stress urinary incontinence, constipation, feeling of a bulge, and back pain were significantly varied throughout these time points. Other symptoms reported that were not listed in the survey were heaviness and anorgasmia. Overall, among

Table 1 List of symptom severity score before seeking care, at the time of seeking care and at the time of survey completion. Significant associations are labeled with an asterisk (*) and within these, timepoint differences are labeled with a literal where different literals represent significant differences

	Before seeking care	At the time of seeking care	At the time of survey completion	P-value	
Stress urinary incontinence	3.73±0.25 ^{ab}	4.33±0.27 ^a	2.88±0.43 ^b	0.0142 *	
Fecal incontinence	2.03 ± 0.34	3.02 ± 0.37	2.08 ± 0.58	0.1177	
Constipation	5.03 ± 0.29^{a}	5.56 ± 0.31^{a}	3.91 ± 0.42 ^b	0.0072 *	
Dyspareunia	3.37 ± 0.34	4.30±0.35	3.59±0.50	0.1506	
Feeling bulge out of vagina	5.93 ± 0.25 ^a	6.62 ± 0.25^{a}	3.48 ± 0.43 ^b	< 0.0001 *	
Back pain	5.30 ± 0.31 ^a	5.49 ± 0.32^{a}	3.51±0.51 ^b	0.0033 *	
Pelvic pain	4.43 ± 0.30	4.73±0.30	4.00 ± 0.49	0.4276	
Urinary retention	3.46 ± 0.34	3.55 ± 0.36	3.44 ± 0.54	0.9767	
Other	5.80 ± 0.77	6.74±0.74	4.54 ± 1.06	0.2373	



Fig. 1 Duration for non-surgical POP treatments and time since surgical treatments. Non-surgical treatments are presented in orange while surgical treatments are presented in blue. Date ranges for pessary modality refer to time since insertion. Date ranges for physical therapy represent time since completion of course. Date ranges for surgical modalities represent time since surgical procedure performed

these significantly different symptoms, severity generally increased (except for stress urinary incontinence) from initial onset to time at diagnosis, indicating the worsening of symptoms before women sought care. Symptom severity reduction at the time of survey completion was significantly lower than prior to and at the time of seeking care. Symptom severity reduction at the time of survey completion was not achieved across all symptoms where fecal incontinence, dyspareunia, pelvic pain, and urinary retention did not show significant improvement. Feeling of a bulge, constipation, back pain, and pelvic pain are the most intense symptoms at the time of seeking care.

Women reported waiting to seek medical care for their POP concerns at separate times, although it was more often early within 0 to 3 months (34.62%). The data fluctuates between 3 and 6 months (14.1%) and 6 to 12 months (10.63%), going up again at 1 to 2 years (16.03%), down at 2 to 3 years (3.85%), and finally up again after 3 years (18.59%). After seeking care, women more often reported getting physical therapy (68.35%), followed by pessary usage (50.63%) among non-surgical treatments. For surgical treatments, the most common procedure was a posterior vaginal repair (37.34%), followed by anterior bladder repair (29.11%), vaginal vault sacrocolpopexy (28.48%) and hysterectomy (28.48%). A summary of how long it has been since women had a surgical procedure or how much time has progressed since completion of their treatment is presented in Fig. 1. A total of 78 women (49.37%) reported having only received nonsurgical treatment, 68 women (43.04%) reported having more than two different surgical procedures, and 37 women (23.41%) reported having 4 or more different procedures in relation to their POP concerns. Twenty-one women (13.29%) reported having surgical procedures without trying any non-surgical options. Because the proportion of women with an overlap of these is not as extensive, the compounded effect cannot be assessed.

A portion of participants did not report satisfaction scores because of their treatment procedure being too recent. After removing these participants from the data pool, a total of 127 participants remained. Satisfaction scores for surgical interventions yielded the best outcomes, significantly reducing symptom severity; non-surgical treatments had lower satisfaction than surgical treatments. Physical therapy and pessary modalities resulted in mean satisfaction scores of 4.31 ± 0.30

	Stress urinary incontinence	Fecal incontinence	Constipation	Dyspareunia	Feeling bulge out of vagina	Back pain	Pelvic pain	Urinary retention	Other
Pessary									
Physical Therapy									
Other non-surgical									
Anterior Bladder Repair					-0.698 (18)	-0.698 (16)	-0.526 (19)		
Posterior Vaginal Repair		-0.729 (11)			-0.573 (24)		-0.468 (24)	-0.583 (17)	
Urethral Repair		-0.715 (9)			-0.818 (11)		-0.555 (13)		1.000 (3)
Vaginal Vault Sacrocolpopexy					-0.632 (21)				
Hysterectomy			-0.381 (30)		-0.665 (28)			-0.522 (18)	
Uterine Sparing	1.000 (3)					-1.00 (3)			
Colpocleisis									
Other Surgical	-0.701 (10)								

Table 2 Evaluation of treatment satisfaction association to symptom severity at the time of survey completion. Only significant associations $P \le 0.05$ are presented. The number of observations used to make the assessment are presented in parentheses

and 4.23 ± 0.44 , respectively. Surgical treatment modalities received a mean satisfaction score as follows: anterior bladder repair 6.69 ± 0.56 , posterior vaginal repair 7.02 ± 0.40 , stress urinary incontinence SUI (ure-thra) repair 7.25 ± 0.75 , vaginal vault sacrocolpopexy 7.45 ± 0.51 , hysterectomy 7.00 ± 0.57 , uterine sparing 5.20 ± 2.15 , and colpocleisis 6.00 ± 3.05 .

Correlation analysis was used to evaluate the association between satisfaction of treatment modality and symptom severity at the time of survey completion; these are presented in Table 2. This analysis revealed that patients reported satisfaction with certain treatments addressing specific symptoms, but of those treatments, all were surgical options. Furthermore, some symptoms were only addressed significantly by single treatment modalities, and the symptoms most effectively addressed were feeling of a bulge and pelvic pain.

Discussion

This study was conducted to understand pelvic organ prolapse (POP) symptom progression from initial onset to time at diagnosis and assess patient satisfaction with symptom management. It was created to uncover any treatment modalities that offered little to no resolution versus those that provided more symptom resolution. This information can help us determine which treatment modalities offer more targeted relief and for which specific symptoms of POP. It can also help us identify early and persistent symptoms to improve symptom management and expand upon efforts to mitigate POP progression.

Vaginal delivery is identified as the greatest risk factor for pelvic organ prolapse, correlating with excessive stretching and tearing of the pelvic floor muscles and fascia. One study constructed a predictive model of POP in postmenopausal women and found that multiparous women and women at an older age were at an increased risk [14]. This aligns with the findings in our survey, which revealed that most participants were aged 50 years or older, had a high rate of primarily vaginal deliveries (>92%), and were multiparous (≥ 2 pregnancies). Given these results, the importance of considering childbirth history in the diagnosis and management of POP should not be forgotten.

Our data shows that symptom severity significantly increases prior to diagnosis from the initial onset. This was true of all symptoms- fecal incontinence, constipation, dyspareunia, feeling of a bulge, back pain, pelvic pain, and urinary retention- except for stress urinary incontinence. Of those symptoms, feeling of a bulge, back pain, pelvic pain, and constipation were rated as the most intense. Pelvic pain was the only symptom out of the these that did not show significant improvement in severity rating post-treatment. In addition to pelvic pain, fecal incontinence, dyspareunia, and urinary incontinence showed no significant improvement across any treatment modality (Table 1). It is important to note that not all listed symptoms are a direct result of POP and thus may or may not be fully addressed with POP targeted modalities.

Treatment options for POP involve both surgical and non-surgical approaches, and include pelvic floor muscle therapy (PFMT), pessary insertion, vaginal hysterectomy, sacrocolpopexy, and pelvic reconstructive surgery. The symptom severity rating post-treatment was correlated with treatment satisfaction based on symptom

type (Table 2) and revealed important conclusions. First, there was no significant association with treatment satisfaction amongst any non-surgical treatment modality, including physical therapy and pessary insertion. Second, certain treatment modalities were found to be better received than others at addressing specific symptoms. Hysterectomy was the only modality found to have satisfactory treatment of constipation, while anterior bladder repair and uterine sparing procedures were the only treatments found satisfactory for back pain. Lastly, all surgical treatment modalities were found satisfactory for addressing the feeling of a bulge. It is worth noting that no treatments, both surgical and non-surgical, were able to address dyspareunia to the patient's satisfaction. However, urethral repair was the only treatment modality that showed significant correlation in addressing anorgasmia to the patient's satisfaction, a symptom described in the 'other' category, from three different patients (Table 2).

Hysterectomy was identified as the treatment modality with the longest time since performance, with twenty patients reporting having undergone the procedure three or more years prior. Uterine sparing procedure had only one participant in this category and was the most recent time since treatment group. By far the largest group of participants was in the physical therapy group, with 46 participants having completed at least one round of physical therapy within 0–3 months.

A meta-analysis performed by Espiño-Albela discovered that eight studies found significant improvements in pelvic-floor function for patients who underwent surgery alone, but no greater improvement in patients who underwent PFMT in conjunction with surgery after 6 months [15]. In one study of these studies, the OPTI-MAL randomized control trial, participants received an individualized program that included one visit 2-4 weeks prior to surgery, and 4 post-operative visits at 2, 4–6, 8, and 12 weeks after surgery [16]. Self-reported adherence at 6 months and 24 months was 93.4% and 81.4%, respectively. The results concluded that there was no significant difference between groups in urinary symptoms 6 months post-surgery or symptoms associated with POP 2 years post-surgery [15, 16]. Our study further strengthens the argument in favor of surgery as the results overwhelmingly support that surgical treatment options provide significant symptom relief, address a broader scope of symptoms, and had higher satisfaction ratings from the perspective of the patient. It is worth noting, however, that the collection of studies from Espiño-Albela did find improvements after 12 months in favor of the PFMT plus surgery combination group. Furthermore, only one of these eight studies continued to assess improvement in symptom severity and pelvic-floor function after 5 years, so more long-term data is needed to adequately assess the benefits of PFMT with surgery [15].

While conservative treatments are often the first line treatment option, our data and current literature suggests this approach may not provide the same long-term relief as surgical options, especially for more severe symptoms. This potentially delays access to more beneficial surgical treatment modalities and may contribute to increased symptom severity at the time of presentation. Our results

symptom severity at the time of presentation. Our results showed that physical therapy was the largest non-surgical treatment option but indicated no significant improvement in any symptoms from the patient's subjective perspective. Furthermore, the two lowest satisfaction scores were physical therapy and pessary usage, both non-surgical modalities.

Our data also revealed a lack of uniformity in the time it took to seek medical care, with some women being seen by providers as early as 0-3 months and others waiting as long as 3 or more years. This cumulatively points to an overall progression in POP symptoms until they are so intense that they interfere with daily function and comfort, raising questions as to why. Carrol et al., in her interview of over 900 women diagnosed with POP on their lived experiences found many factors pointing towards the advancement of symptoms, with themes touching on knowledge gaps, preconceived beliefs, expectations, and fear [4]. Many women had a knowledge of what POP was but were either unaware of the symptoms or believed it to be a diagnosis suffered only by elderly women, highlighting a potential need for analysis of current public health education on this condition. The interviews of these women underscore the strong social, emotional, physical, and psychological aspects surrounding the life of a patient with a POP diagnosis [4].

Currently, the only up-to-date attempt at a screening tool for detecting POP is the pelvic organ prolapse simple screening inventory (POPSSI), with a sensitivity and specificity in the general population at 45.5% and 87.4% respectively [17]. While useful however, the POPSSI tool is not used regularly in primary care settings and is not a component of routine female health screening. It is important to note that one of the questions in this tool asks about the presence of a bulge coming out of the vagina. While this is the strongest indicator of pelvic organ prolapse, it can also point to an extremity of symptoms, which is supported by our findings in patients waiting to seek care until these symptoms reach a certain severity and impairment.

Limitations

The primary limitations of this study are the potential concerns of representativeness and the size of the sample. Since the participants were recruited from a Facebook support group, this may introduce some self-selection biases and biases related to access to social media that cannot be accounted. The nature of a support group may attract individuals who may have more severe or persistent symptoms, those seeking community validation, or those dissatisfied with their care, all potentially skewing the dataset toward lower satisfaction scores than what might be observed in the general population. Conversely, some members may simply be seeking advice, reassurance, or guidance in ongoing management of their condition, and not necessarily reflecting their negative experiences. Since there are few reports like the one presented, it is not possible to contextualize this representation. The sample gathered was not weighed or stratified proportionally in any way, therefore the effectiveness of the treatments may not proportionally reflect a general assessment for the procedure. Additionally, there may be recall bias at play with the comparison of two retrospective timepoints in one survey rather than the collection of data in members prior to treatment and immediately after

Inclusion criteria for participation was to have a diagnosis of pelvic organ prolapse, however this survey lacked clinical verification regarding POP diagnosis and staging. Participants self-reported a confirmed diagnosis, but we did not review medical records to validate who made the diagnosis, the type of POP or its degree, or whether standardized assessment tools were used. As a result, we cannot determine whether clinical evaluations were consistent across the cohort, which limits the generalizability of our findings. Furthermore, for those who reported undergoing pelvic floor muscle therapy (PFMT), we did not assess whether the treatment was supervised by a trained provider or conducted independently. For non-surgical treatments, the possibility of incomplete or poorly followed regimens can be a cause of poor effectiveness and satisfaction. This is an aspect that remains unexplored in the present study and something worth following up.

Ensuring that patients are fully informed about the need for ongoing management, especially for symptoms like pain with sex and pelvic pain, could improve outcomes. Additionally, there are lack of long-term studies on patient outcomes after surgical interventions beyond 5–10 years, as evidenced by the meta-analysis by Espiño-Albela [15]. The studies that currently address patient outcomes within this time often do not include woman who have undergone multiple procedures to address their POP; Rather they focus on woman who had one type of surgery or surgery only once [15].

Furthermore, there was no way to tell the symptom severity rating before and after treatment amongst the woman that reported having undergone only surgical procedures without first trying conservative management. There is room for future research in assessing the symptom severity progression and treatment satisfaction in these specific patients, as well as looking at distinct groups (those who had conservative management alone or who had a mix of surgical and non-surgical options). This survey also did not ask which symptoms were presented first, and so it is difficult to know which specific symptoms lead the patient to seek care.

Additionally, the list of symptoms in the survey was by no means an exhaustive list of those associated with POP; Though it included stress urinary incontinence and urinary retention, it failed to include the full breadth of urinary complications, like urinary urgency and recurrent urinary tract infection(s) to name a few. It is also worth noting the existence of a population of women with POP that are asymptomatic and progress to developing symptoms prior to awareness of prolapse. The degree of POP may also contribute to the timing of awareness and degree of symptom severity.

While this study did assess symptom severity from onset through time of survey completion, it did not assess the patient's subjective belief about which symptoms may or may not have been related to their POP diagnosis, and thus careful consideration of the potential for presence of symptoms from pre-existing and chronic conditions is warranted. Thus, there should be discussion that some symptoms could have demonstrated increased severity because of their diagnosis and may or may not have shown improvement with the patient's treatment of choice.

To build on these findings and address the limitations outlined, we suggest a prospective trial conducted in a broader healthcare setting, one that includes a more diverse and representative patient population with a larger size sample. Through this prospective trial, standardized diagnostic criteria should be utilized to confirm medical records and track treatment outcomes over time, considering the role of chronic pain and pre-existing conditions, and attempting to have a more encompassing list of symptom variability and treatment modalities.

A population-based assessment would ensure observations are reproducible and generalizable, with insights that could inform the development of targeted public health education initiatives. This narrow focus on a specific rather than general population limiting generalizability is a sentiment echoed in Brown et. all, which calls for a push to include both objective and subjective assessment, prioritize diversity, and incorporate longitudinal assessment whenever possible [5]. It is imperative that future studies utilize patient-reported metrics alongside standardized pelvic examination to improve research clarity. Developing standardized guidelines for conservative management and when to push for surgical options are also crucial steps in the goal for improved early detection, quicker symptom resolution, and higher patient satisfaction ratings.

Conclusions

The findings of this study highlight several critical aspects of pelvic organ prolapse (POP) management, from symptom onset to post-treatment outcomes. These findings suggest that understanding symptom progression early in its onset, and as it relates to treatment modality, is essential to improving the long-term satisfaction of patients. Furthermore, our data suggest that surgical treatments were deemed more satisfactory by the patient effective in addressing POP symptoms overall when compared to more conservative treatments like physical therapy and pessary placement. Non-surgical treatments such as these did not yield the same degree of satisfaction in patients, nor symptom relief. This study also revealed the variability in the time patients take to seek care, with some waiting years before addressing their symptoms. This delay in seeking medical attention may exacerbate the severity of symptoms and further delay access to more effective surgical treatments. Some potential causes of this delay could be the lack of symptom recognition in POP prior to the experience of a vaginal bulge.

Additionally, these findings suggest that standard treatment protocols may not comprehensively address all aspects of POP, particularly symptoms related to pain and function. The persistent nature of certain symptoms post-treatment underscores the need for a more comprehensive approach, one that involves multiple care teams and integrates various disciplines. POP does not have a one treatment fix all approach, and many women will still go on to suffer from the non-resolution of symptoms like dyspareunia, urinary incontinence, and often significantly distressing pelvic pain. In addition, treatment strategies should not focus on conservative vs. surgical management, but rather the integration of solutions that target pain management, pelvic floor rehabilitation and strength, and ongoing patient education. By addressing these gaps, we can begin to develop more effective treatment protocols that prioritize patient satisfaction and quality of life, ensuring that all aspects of POP are treated with equal care and attention.

Supplementary Information

The online version contains supplementary material available at https://doi.or g/10.1186/s12905-025-03716-0.

Supplementary Material 1

Author contributions

EJS: Conceptualization, Methodology, Data curation, Investigation, Writing -Original Draft. JC: Conceptualization, InvestigationIZ: Methodology, Formal analysis, Investigation, Supervision, Writing - Original Draft, Writing- review and editing. BDB: Conceptualization, Methodology, Supervision, Writingreview and editing. All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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Data availability

An unidentified curated dataset can be requested to the corresponding authors with a reasonable request.

Declarations

Ethical approval

The study was approved by the Rocky Vista University Institutional Review Board (RVU IRB 2023 – 132). Information about the study was presented to the respondents before they could enter the online questionnaire. This included the study objectives, the participants' right to withdraw at any time, and contact information to members of the research group. All participants provided their written informed consent to participate in the study. All methods were conducted in accordance with relevant guidelines and regulations or declaration of Helsinki.

Competing interests

The authors declare no competing interests.

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