

Prevailing knowledge about pelvic floor rehabilitation and use of pessaries in females with uterine prolapse- an overview

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ABSTRACT

Uterine prolapse (UP), a form of pelvic organ prolapse (POP), is a clinical constraint characterized by the downward descent of the uterus in varying degrees. Most frequently observed in elderly females and has an intense negative impression on their healthy lives. Stabilization of the uterus with the vagina is accountable for the interplay between the mechanical, muscular, and connective tissues. Any pathology or disturbance in the function of these structures can increase the risk of UP.

Urinary, vaginal, and bowel complaints can be experienced by women with uterine prolapse. The complications of physical disturbances that occur in UP can adversely affect women's physical and emotional health, which results in a serious public health issue. Operative corrective regimens like the removal of the uterus or vaginal wall repair mark a significant cost and burden of recovery for the patient and their family members. Pelvic floor rehabilitation, a non-invasive technique, has been manifested as an effective option with a lower cost and complexity compared to surgical options.

With pelvic floor muscle training, organ prolapse can be stopped in its tracks, and procedures can be avoided. Pessaries are basically used as a nonsurgical method of managing POP, regardless of the type of prolapse. This review will summarize recent literature on the efficacy of pelvic floor rehabilitation and pessaries in the management of UP.

Keywords: Uterine Prolapse, Pelvic Floor, Pessaries

BACKGROUND

Pelvic organ prolapse (POP), a common condition of the pelvic floor that affects women, has an overall negative influence on the standard of living. The fall of pelvic organs, which can be either the anterior or posterior wall or apical vaginal compartments, or two or more in combination, is referred to as pelvic organ prolapse. A type of pelvic organ prolapse known as uterine prolapse (UP) is characterized by the sinking of the uterine body into the vagina. More common in older females, a few cases of prolapse in younger women have also been reported due to a few obvious predisposing factors. Epidemiological studies and research contingent on clinical examination have provided information about the descent type and the chamber that is most often impacted [1]. Although several factors have been linked to POP, it is unclear how the risk factors relate to one another. Numerous risk factors for UP work in concert with one another. Age after the midforties, BMI greater than 30 kg/m2, connective tissue issues, menopausal status, unmanaged vaginal delivery, multiparity, and persistent constipation are risk variables linked to the emergence of symptomatic UP. Particularly, it results from a merger of connective tissue degeneration and incompetence of the pelvic floor muscles (PFM). Numerous investigations have supported the correlation between the presence of UP, a rise in the levator hiatus area, and a decrease in the levator plate angle [2, 3].

Sensations like a bulge, pressure, or something "coming out" of the vagina are frequently present in females with UP, and these symptoms may get worse with extended standing or physically

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demanding activities. If the prolapse is far more extensive, they may also have complications relative to their intestines and bladder. [3] UP has a detrimental effect on physical activities, body image, sexual function, and overall life quality. Problems with uterine prolapse can also make it difficult for women to have coitus, experience orgasm, and have good lubrication. In addition, women with uterine prolapse may experience problems with defecation and feel too hot when they urinate [4].

Studies have been conducted to figure out the best way to prevent surgery based on awareness about how the body works. Historically, strict invasive reconstructive technique definitions based on anatomic perfection have dominated the literature. However, medical care for prolapse can be compared based on how quickly it results in a problem being resolved, but patient-centred care is just as important [5].

AIMS

Recently, uterine prolapse was found to be associated with the size of the levator hiatus and pelvic muscle weakness, according to a study from Chicago. The study found a significant association between organ prolapse, increased levator hiatus, and strength of pelvic floor muscles as assessed using the perineometer [6]. Literature proved ample evidence supporting the same theory. Therefore, it stands to reason that reinforcing the power and endurance of the musculoskeletal components surrounding the pelvic structure would help to minimize prolapse-related complaints and may also avoid invasive and expensive operative interventions. This review narrates the latest pelvic floor rehabilitation and pessaries as the finest treatment options for uterine prolapse.

REVIEW RESULTS

The Anatomy and Physiology of Prolapse

The uterus is a thick, compliant reproductive organ located within the pelvic cavity, between the bladder and rectum. The muscular organ receives active, passive and mechanical support. In 50% of women, the uterus is mostly ante-flexed and anteverted, providing feasibility for nearly all reproductive processes, including the transport of the ovum to the environment needed for fertilization [7]. The passive component of its support includes ligaments, mainly the broad ligament, the cardinal ligament, the uterosacral ligament, and the pub cervical ligament, whereas the pelvic floor muscles form the active support of the uterus. The uterus is kept in a stable position within the pelvic cavity by a combination of muscles and ligaments [8].

The causes of prolapse are multifactorial. Throughout a woman's lifetime, diverse anatomical, physiological, genetic, behavioral, and reproductive factors interact to cause pelvic floor dysfunction, contributing to the occurrence of UP. When the supporting structures are unable to withhold the external trauma or physiological processes inside the body, the uterus tends to start descending downward. If preventive measures aren't taken, the prolapse may progress and result in more severe symptoms and complications [7, 8].

Epidemiology

Although uterine prolapse is noted to occur with a frequency ranging from 1-65%, only 10% of cases require medical attention [6]. The disorder is more common in some regions of the world than others. Both symptomatic and anatomical uterine prolapse were found to be common, with corresponding prevalence rates of 6.6% and 5.9%, respectively [4].

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A more recent study in Pakistan confirms that uterine prolapse is prevalent at 10.3%, with 47.8% of participants reporting that it has a moderate to significant negative impact on their daily lives, including hygiene, home/work life, and participation, and 21.3% mentioning that they have ever sought medical attention for their condition [5].

Uterine prolapses are quite prevalent, with a frequency of 14.2% collectively and over 50% in menopausal and parous women, according to a study done in the United States [3]. The incidence of uterine prolapse was 14.2%, according to a new study that was conducted on 1600 women in Portland in 2022 [7]. Literature from another part of the globe is not lesser; in the Republic of Korea (ROK), the overall prevalence of POP accounts for 31.7%, and for patients over 50, the rate is even higher at 57.5% [9].

Due to a general increase in life expectancy, there will be a significant rise in the statistics of women with UP needing care during the next 20 to 40 years. Existing treatment choices might not be as effective or affordable as they could be, so health care providers must collaborate to offer patients multidisciplinary care in order to lower the somatic and behavioral morbidity that is generally linked to UP.

Risk factors

Vaginal delivery, multiparity, obesity, increased birth weight, ageing, a higher body mass index, an increased levator defect and levator cleft area, and smoking are known risk factors for UP. Recently, UP has also been identified as a condition with a hereditary propensity. Family histories of prolapse have a 2.5-fold higher incidence of prolapse than the general population [6].

According to a descriptive study from Indonesia in 2021, 45.1% of females with UP were about 65 years of age or older, 61% had had more than three vaginal deliveries, and 91.5% were postmenopausal [10].

The extra body weight is accompanied by increased intra-abdominal pressure, which has a detrimental effect on the ligament-fascialmuscular apparatus of the pelvis. Uterine prolapse is more common as the supporting structures deteriorate. A retrospective study conducted in France explored the positive association of body mass index (BMI) with the severity of prolapse. The study demonstrated that a higher BMI was found in females with a severe grade of prolapse [11].

Some studies suggest that the risk of uterine prolapse may be higher in women with osteoporosis, possibly due to changes in collagen and connective tissue composition and lower oestrogen levels [9].

A study from Nepal suggested that working in a squatting position may be a mechanical risk factor for uterine prolapse, with a higher likelihood of prolapse in women who spent more time in this position compared to standing workers [12].

Consequences and Impact

Women with POP may experience urinary, vaginal, and defecation symptoms. Vaginal symptoms include feeling pressure, seeing or encountering a bulge protruding from the vagina, and having dyspareunia. Urinary symptoms include urinary incontinence, frequency, and partial evacuation of the bladder. Bowel symptoms include flatulence or faecal incontinence, straining during defecation, and a feeling of incomplete emptying. All of these symptoms have social implications that have a hazardous effect on women's health status, resulting in everything from physical

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discomfort, sexual complaints, and psychological issues to occupational and social limitations [5].

Prolapse of the uterus doesn't usually cause any serious lifethreatening problems, but it has a massive impact on a woman's life. For example, 44.57% of prolapse sufferers feel discomfort or awkwardness due to a mass emerging from their vagina. The physical distress causes a massive impact on social, personal, and psychological well-being [11, 12].

Another study found that uterine prolapse had a significant impact on both the quality and satisfaction of sexual encounters by reducing orgasm, desire, and lubrication. According to a study by Subedi et al., defecation issues are expected in 71% of uterine prolapse cases, while 59% of patients experience a burning sensation during urination. This undoubtedly lowers a woman's standard of healthy living [13].

Uterine prolapse adversely affects women's physical and emotional health, leading to serious public health issues in the majority of developing nations. This is a prevalent condition that often progresses over time [3].

Assessment of Uterine Prolapse and Grades

Uterine prolapse is a diagnosis suggested by the patient's presentation and confirmed by physical examination. A comprehensive medical history should include the duration of symptoms associated with prolapse, the degree of patient-reported vaginal bulging, aggravating factors, and symptom intensity, an assessment of bladder and bowel function, and screening for concomitant sexual dysfunction as needed. Uterine prolapse is often overlooked by women and is detected only during random physical examinations by clinicians. Associated symptoms may be distinct in accordance with the involvement of other periuterine structures within the pelvic cavity [14]. A physical examination of a patient with suspected UP includes an abdominal and pelvic inspection. Abdominal masses, hernias, and previous abdominal surgical scars are revealed by abdominal examination. This is followed by a gynaecological examination, which is usually done in the dorsal lithotomy position.

A pelvic examination usually begins with an evaluation of the vulva to assess skin inflammation, ulcers, or structural changes, such as signs of lichen sclerosus. Apparent prolapse may be detected by separating the labia, performing the Valsalva manoeuvre, or coughing. The pelvic floor muscles are then evaluated for tenderness or weakness. Tension muscle soreness of the pelvic floor can be assessed with a single-point test that palpates for tenderness along the levator ani and obturator muscles. Pelvic floor muscle strength is assessed by assessing how the muscles respond when the patient attempts to contract the pelvic floor. The extent of prolapse is assessed by inserting a speculum into the vagina. The clinical examination should include attention to the anterior and posterior vaginal walls to warrant that no other type of prolapse is present [15]. After the inspection is complete, the descent of the uterus is graded according to a standard grading system.

In 1996, the American Gynaecology Society, the Society of Gynecologic Surgeons, and the International Continence Society (ICS) produced a consensus document providing an objective approach for diagnosing female pelvic organ prolapse, declaring the "Pelvic Organ Prolapse Quantification System," or POP-Q. POP-Q systems are widely used in both service and study settings. Stephen et al. describe a stepwise procedure for ranking the severity of prolapse into stages I with no prolapse and IV with maximal descent [16]. The degree of prolapse is scored using a number from 0 to 4. There are four degrees in it: there is no descent past the hymen in grade 0, halfway to the hymen in grade 1, the hymen in grade 2, past the hymen in grade 3, and the maximum drop in grade 4.

Physical Therapy Rehabilitation for Uterine Prolapse

A physiotherapy and rehabilitation programme typically involves a variety of physical activities aimed at strengthening the pelvic floor muscles to brace the uterus and prevent or reduce symptoms of uterine prolapse. The conservative management strategy is frequently seen as advantageous for lowering the frequency and intensity of symptoms linked to uterine prolapse [17]. According to the research, by properly exercising the pelvic floor muscles, prolapse can be prevented from getting worse, and surgery can be delayed or avoided. Pelvic floor muscle training has been shown to be effective in treating POP-Q stage I pelvic organ prolapse, according to a meta-analysis from the year 2021. The author proposes that tension in the levator ani, distal urethral sphincter, uterine ligament, bladder cervical ligament, and pelvic floor fascia can be increased by strengthening pelvic floor muscles. Thus increasing the mechanical strength of structures and providing stability to the uterus [18].

Pelvic floor rehabilitation may include electrical biofeedback along with regular pelvic floor strengthening exercises. According to Zahra from Iran, females with Grade 2 or 3 prolapse treated with biofeedback for 4 weeks in total with 3 sessions per week exhibited a marked upgrade in pelvic floor muscle strength, and the grade of prolapse improved to Grade 2 from Grade 3. By using recognised research methodologies, the author observed a reduction in urinary complaints and improved health and physical well-being [19].

Another controlled trial from Brazil by Ana et al. provides evidence regarding PFMT in symptomatic Stage II pelvic organ prolapse. According to the author, pelvic floor muscle training with 8–12 maximum voluntary contractions held for 6 s each with 12 s of rest between each contraction in a total of 3 sets for 12 weeks had a significant impact on mass per vagina, bulky lower abdomen, and urinary leakage.

PFMT was beneficial in the context of prolapse impact, role limitations, social limitations, and personal limitations, making the women feel better about the execution of daily activities and participating in social moments [20]. Pelvic floor muscle training and electrical stimulation are only two examples of how pelvic floor rehabilitation is used. Physical therapists specializing in pelvic floor disorders also focus on behavior and ways of life. As was previously discussed, UP is associated with the mechanical position of the body.

In a study conducted in the year 2022, Delena et al. gave advice on nutritional food, clean drinking water, avoiding smoking, management of chronic cough, body weight maintenance, physical activity, appropriate posture, adequate management during delivery, ergonomics, and how to wear a patuka (a corset worn by Nepali women around the trunk) to women with UP as an intervention in an RCT. Significant results were obtained in the physical limitations, personal relationships, role limitations, and general health perception domains of the standard life research tool, as well as the prolapse, bladder, and bowel symptoms. As with any other available treatment option, pelvic floor rehabilitation also has limitations in its application. This noninvasive treatment

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strategy might not be useful for patients in the progression of Grade IV, and as it is a long-term intervention, patient compliance may be a greater issue. Therefore, taking the degree of prolapse into account, the symptoms of uterine prolapse can be effectively controlled with pelvic floor muscle exercise [21].

Pessaries in the Treatment of Uterine Prolapse

A pessary is a piece of apparatus used to structurally support the vagina. Vaginal pessaries are considered a popular conservative treatment strategy for women with uterine prolapse. This form of nonsurgical management has been chosen by a large number of females over surgical corrective techniques, despite the existing controversy surrounding surgical procedures [22].

In a recent study, Alexandra Dubinskaya found that using vaginal oestrogen in conjunction with pessaries resulted in a lower rate of erosion and infection. In a prospective cohort analysis, Elham noted that surgical and pessary placement outcomes for prolapse symptoms appear to be comparable. Both pessary implantation and Le Fort surgery appeared to be successful in treating stage III or higher vaginal prolapse in elderly women [23].

The objective of a similar study carried out in 2020 was to evaluate the significance of pessary fitting for females with symptomatic pelvic organ prolapse (POP) who underwent hysterectomy. The study found that 63.2% of necessary treatments were successful. Pessary is therefore promoted as a less invasive, more affordable alternative to pelvic reconstructive surgery [24].

CONCLUSION

Although more high-quality research is still required to better understand uterine prolapse, its physiology, and the application of pessaries and pelvic floor rehabilitation for the condition, the current study's promising results are encouraging. Clinicians use a multimodal approach to diagnose and treat uterine prolapse. Although literature reveals that pessaries and pelvic floor physical therapy are effective treatments for UP, the stage and severity of UP should always be taken into account. Furthermore, in cases of higher-grade prolapse, surgical intervention is also necessary. According to the available evidence, a multi-model proposal that incorporates pelvic floor rehabilitation and pessaries is recommended as the preferred method for treating the symptoms of uterine prolapse due to its safety and non-invasiveness. These less invasive methods ought to be considered before opting for more aggressive and expensive methods. The patient will always have access to medicinal and surgical treatment alternatives if conservative management is ineffective. Physical therapy, a multifaceted approach, and precautions in uterine prolapse conditions should be chosen conservatively when evaluating and treating uterine prolapse and contending with both dysfunction and behavioral contributions. It is recommended that exercises, being simple and safe, be used as a preferred system for the management of uterine prolapse.

CONFLICT OF INTEREST

The other authors have no conflicts of interest to declare.

REFERENCES

 Bø K, Anglès-Acedo S, Batra A, Brækken IH, Chan YL, Jorge CH, et al. International urogynecology consultation chapter 3 committee 2; conservative treatment of patient with pelvic organ prolapse: Pelvic floor muscle training. Int Urogynecol J. 2022;33(10):2633-67.

- 3. Schulten SF, Claas-Quax MJ, Weemhoff M, van Eijndhoven HW, van Leijsen SA, Vergeldt TF, et al. Risk factors for primary pelvic organ prolapse and prolapse recurrence: an updated systematic review and meta-analysis. Am J Obstet Gynecol. 2022;227(2):192-208.
- Badacho AS, Lelu MA, Gelan Z, Woltamo DD. Uterine prolapse and associated factors among reproductive-age women in southwest Ethiopia: A community-based cross-sectional study. PLoS One. 2022;17(1):e0262077.
- Jelovsek JE, Gantz MG, Lukacz E, Sridhar A, Zyczynski H, Harvie HS, et al. Success and failure are dynamic, recurrent event states after surgical treatment for pelvic organ prolapse. Am J Obstet Gynecol. 2021;224(4):362-e1.
- Handa VL, Roem J, Blomquist JL, Dietz HP, Muñoz A. Pelvic organ prolapse as a function of levator ani avulsion, hiatus size, and strength. Am J Obstet Gynecol. 2019;221(1):41-e1.
- Weintraub AY, Glinter H, Marcus-Braun N. Narrative review of the epidemiology, diagnosis and pathophysiology of pelvic organ prolapse. Int braz j urol. 2019;46:5-14.
- 8. Indexed at, Google Scholar, Cross Ref
- 9. Danforth DN. Danforth's obstetrics and gynecology. Lippincott williams & wilkins; 2008.
- Ko YR, Lee SR, Kim SH, Chae HD. Pelvic organ prolapse is associated with osteoporosis in Korean women: analysis of the Health Insurance Review and Assessment Service National Patient Sample. J Clin Med. 2021;10(16):3751.
- Pravitasari VL, Kurniawati EM, Umiastuti P. Risk Factors of Uterine Prolapse in Dr. Soetomo General Academic Hospital, Surabaya. Biomol Health Sci J 2021;4(2).
- Lallemant M, Giraudet G, Delporte V, Behal H, Rubod C, Delplanque S, et al. Long-Term Assessment of Pelvic Organ Prolapse Reoperation Risk in Obese Women: Vaginal and Laparoscopic Approaches. J Clin Med. 2022;11(22):6867.
- Devkota HR, Sijali TR, Harris C, Ghimire DJ, Prata N, Bates MN. Bio-mechanical risk factors for uterine prolapse among women living in the hills of west Nepal: A case-control study. Womens Health. 2020;16:1745506519895175.
- Subedi S, Thapa T, Joshi A, Chapagain S, Shrestha S. Awareness Regarding Pelvic Organ Prolapse Among Women Attending a Teaching Hospital in Chitwan. Surg. 2019;2:28-6.
- Haylen BT, Maher CF, Barber MD, Camargo S, Dandolu V, Digesu A, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic organ prolapse (POP). Neurourol Urodyn. 2016;35(2):137-68.
- 16. Raju R, Linder BJ. Evaluation and management of pelvic organ prolapse. Mayo Clin Proc. 2021;96(12): 3122-3129. Elsevier.
- Madhu C, Swift S, Moloneyl Geany S, Drake MJ. How to use the pelvic organ prolapse quantification (POPlQ) system? Neurourol Urodyn. 2018;37(S6):S3943..
- Lin FC, Funk JT, Tiwari HA, Kalb BT, Twiss CO. Dynamic pelvic magnetic resonance imaging evaluation of pelvic organ prolapse compared to physical examination findings. Urol. 2018;119:49-54.
- Ge J, Wei XJ, Zhang HZ, Fang GY. Pelvic floor muscle training in the treatment of pelvic organ prolapse: A meta-analysis of randomized controlled trials. Actas Urológicas Españolas (English Edition). 2021;45(1):73-82.

Fatou S, et al.

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- 20. Gorji Z, Pourmomeny AA. The effect of pelvic floor muscles training using biofeedback on symptoms of pelvic prolapse and quality of life in affected females. Int J BioMed Public Health. 2020;3(1):5-9.
- 21. Resende AP, Bernardes BT, Stüpp L, Oliveira E, Castro RA, Girão MJ, et al. Pelvic floor muscle training is better than hypopressive exercises in pelvic organ prolapse treatment: an assessor-blinded randomized controlled trial. Neurourol Urodyn. 2019;38(1):171-9.
- 22. Caagbay D, Raynes-Greenow C, Dangal G, Mc Geechan K, Black KI. Impact of an informational flipchart on lifestyle advice for Nepali women with a pelvic organ prolapse: a randomized controlled trial. Int Urogynecol J. 2020;31:1223-30.
- 23. Rantell A. Vaginal pessaries for pelvic organ prolapse and their impact on sexual function. Sex Med Rev. 2019;7(4):597-603.
- 24. Gholamian E, Haghollahi F, Tarokh S, Hajihashemy M, Shariat M. Clinical outcomes in patients with advanced pelvic prolapse who underwent LeFort surgery or pessary placement-A prospective cohort study. Caspian J Intern Med. 2022;13(2):405.
- 25. Ma C, Kang J, Xu T, Zhang Y, Ma Y, Liang S, et al. Vaginal pessary continuation in symptomatic pelvic organ prolapse patients with prior hysterectomy. Menopause. 2020;27(10):1148-54.