

**RESEARCH ARTICLE****Female Sexual Function Index As Sexual Dysfunction Predictor On Women Using A Pessary**

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Abstract

Introduction: Pelvic organ prolapse (POP) is the abnormal descent of pelvic organs that can cause various symptoms, including sexual dysfunction, especially in menopausal women. With increasing life expectancy, the prevalence of POP-related female sexual dysfunction is also rising. Sexual discomfort can result from vaginal wall thinning, stiffness, fatigue, and inability to achieve orgasm, affecting overall well-being and quality of life.

Objective: This study aimed to evaluate the improvement in female sexual function using the Indonesian version of the Female Sexual Function Index (FSFI) one week after pessary insertion in both sexually active (SA) and non-sexually active (NSA) women with POP.

Methods: A descriptive before-and-after study was conducted on 20 women aged 50–65 years with POP grades II–IV at Al-Ihsan Hospital, Bandung, between November 2023 and January 2024. All subjects received ring pessary treatment. The FSFI questionnaire was administered before and one week after pessary insertion to assess sexual function.

Results: Among 20 participants (mean age: 57 years), 16 (80%) reported sexual dysfunction before pessary insertion. After one week, 14 women (70%) were categorized as not having sexual dysfunction, while 6 (30%) remained in the dysfunction group. Of the 16 women initially affected, 11 (68%) experienced improved sexual function. The ring pessary proved effective without negatively affecting sexual activity.

Conclusions: Pessary use in women with POP can improve sexual function without adverse effects on sexual intercourse. However, limitations include the small sample size, short follow-up, and use of only one pessary type. Additionally, multiple unmeasured factors, such as biological, cultural, and social factors, can influence outcomes.

Keywords: Pelvic Organ Prolapse (POP); Female Sexual Function Index (FSFI); pessary , users; sexual dysfunction; menopause

INTRODUCTION

Pelvic organ prolapse (POP) is the descent of one or more of the pelvic organs of the vaginal aspect and uterus: the anterior vaginal wall, the posterior vaginal wall, the uterus (cervix), or the apex of the vagina (vaginal vault or cuff scar after hysterectomy). This allows nearby organs to herniate into the vaginal space, commonly referred to as a cystocele, rectocele, or enterocele.⁹

The prevalence of POP around the world shows varying figures depending on risk factors in each region. The recent Global Burden of Disease 2010 report estimated the prevalence of POP to be approximately 9% worldwide. In low-income countries, the prevalence is estimated to be as high as 20%.^{10,11} According to the National Health and Nutrition Examination Survey, approximately 3% of women in the United States report prominent vaginal symptoms and there are approximately 300,000 POP surgeries annually in the United States. The frequency of POP in some countries varies, as reported in clinic d'Gynecologie et Obstetrique Geneva the incidence was 5.7%, and in the same period in Hamburg the incidence was 5.4% and Rome 6.7%. In Egypt, India and Japan, the incidence is reported to be higher, while in American Negroes and Indonesians it is less.^{12,13} In Nepal, the prevalence of POP is estimated at 10% in women of childbearing age (between 15 and 49 years) and 24% in post-menopausal women aged between 45 and 49 years.^{14,15}

The frequency in Indonesia is only 1.5% and is more common in women who have given birth, older women and women with heavy labor.¹³ In Indonesia there has been no prevalence study to determine the overall incidence of POP. In a study at Dr. Soetomo Surabaya Hospital during a 5-year period (2007 - 2011), 371 women with POP were reported, only 92 cases had a complete history and data on the 4 risk factors studied. Of the total 92 cases, uterine prolapse was found in 61 cases (66.3%), cystocele in 6 cases (6.52%) and 25 cases (26.1%) were a combination of POP. Most cases of uterine prolapse (91.81%) were found to be of degree III and IV, with 60.66% of uterine prolapse being of degree III, 31.15% being of degree IV, and 8.20% being of degree II.¹⁶

Symptoms include stress urinary incontinence, micturition problems, fecal incontinence, bowel changes, vaginal discharge, sexual dysfunction, vaginal protrusion and lower abdominal pain.^{17,18,19} This has the potential to greatly impact the quality of life of women with health-related POP through physical, social, and sexual activity restrictions, psychological distress, and increased healthcare-related financial burden. Furthermore, access to health services to address these conditions is often limited, and women usually have to live with the consequences for the rest of their lives.²⁰

Zewdu et al.'s study on QOL of POP patients stated that out of a total of 409 women with pelvic organ prolapse involved in the study, it was found that the overall poor quality of life was 57.5%. Regarding quality of life domains; where personal relationships (73.6%), was the most affected factor. Stage III/IV prolapse, menopause, unmarried women, and longer duration of prolapse were significantly associated with poor quality of life.²¹

Surgical and non-surgical therapies play an important role in improving quality of life. A literature study conducted by Rantel and Cert in 2019 conducted a literature review to record the current evidence regarding the use of pessary to improve sexual function in POP patients. The

results showed that there are several pessaries available on the market that allow women to maintain sexual activity, and many of these pessaries are not perceived by their partners. Evidence suggests that, for women who are sexually active with a pessary in place, they are happy and continue this form of management in the long term.²²

The Female Sexual Function Index (FSFI) is a multidimensional questionnaire that can indicate female sexual function. The FSFI consists of 6 domains namely sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and pain (19 questions in total).⁹ The FSFI questionnaire is used to assess sexual abnormalities in adolescents, pregnant women, middle age to menopause. The FSFI is also used to evaluate sexual disorders in various clinical conditions, including women with diabetes mellitus, high blood pressure, genital organ abnormalities, obstructive sleep apnea, tinnitus, spinal cord injury, pelvic organ surgery, aortic surgery, and women on certain medications. Women with female sexual dysfunction questionnaire results can be further evaluated for risk factors, causes, and management.^{23,24,25}

The FSFI questionnaire was developed and validated in 2000.³ The questionnaire was validated through several sequential stages, including panel selection of each question, pre-test, and expert panel. Based on the analysis method, five sexual function factors were identified, namely sexual desire or arousal (libido), lubrication, orgasm, satisfaction, and pain.^{26,27,29}

The Female Sexual Function Index (FSFI) questionnaire can be used to help establish a diagnosis of female sexual dysfunction. An assessment result with a sum of scores >26.5 indicates the absence of sexual dysfunction in women.²³ To obtain non-confusing assessment results, the FSFI was used in women who had sexual activity during the past 6 months and the evaluation was conducted in the previous 4 weeks. A scoring result of zero indicates no sexual activity during the assessment. In international use, the FSFI has been translated into Chinese, Arabic, Persian, Malaysian, Turkish, Korean, and Japanese.^{24,26} Clinical and epidemiological studies show that the FSFI has been validated to establish the diagnosis of female sexual disorders and help assess quality of life in these countries.^{26,28} The FSFI is an easy-to-understand questionnaire that can be used to measure all aspects of female sexual function.²³

This study aims to investigate the improvement in female sexual functioning, measured with the Indonesian version of the Female Sexual Function Index questionnaire 1 week after pessary installation, both for women who were sexually active (SA) and women who were not sexually active (NSA) who came with POP.

METHODS

The design of this research is descriptive research study before and after intervention in humans. This research was conducted on 20 patients aged 50-65 years who had pelvic organ prolapse. These patients were treated at Al-Ihsan Hospital in Bandung between November 2023 and January 2024. Inclusion criteria are patients with POP grade I, II, III, IV, and agree to be included in the study. Exclusion criteria are patients with neoplasm of pelvic organ, intraabdominal tumor, history of pelvic surgery.

Based on the results of the prolapse intensity examination, a pessary was installed as therapy. To determine sexual function, researchers used the Indonesian version of the Female Sexual Function Index questionnaire before and 1 week after the pessary was installed. The independent variable is the use of pessary. The dependent variable is sexual function as measured by the FSFI (Female Sexual Function Index) questionnaire.

Bivariate analysis was used to determine the comparison of sexual dysfunction and quality of life with the FSFI questionnaire. Normality test was conducted for numerical-ratio data results with the Shapiro Wilk test because the study subjects were less than equal to 50. If the data were normally distributed, comparison of questionnaire score values was carried out by paired T test. If the data were not normally distributed, the Wilcoxon test was performed.

RESULT

This research involved 20 subjects. Where the degree of POP varies from degree 2 to 4. The pessary used in this study was a ring pessary. The average age of the patients was 57 years. The research results showed that there were 14 respondents (70.0%) who were included in the non-sexual dysfunction category and 6 respondents (30.0%) who were included in the sexual dysfunction category. There were 16 subjects who experienced sexual dysfunction before the pessary was installed. After installing the pessary, there were 14 subjects who did not fall into the sexual dysfunction category and 6 subjects who fell into the sexual dysfunction category. Of the 16 subjects who experienced sexual dysfunction, there were 11 subjects who experienced an increase in sexual function and 5 subjects who remained in the sexual dysfunction category as assessed based on the Indonesian version of the Female Sexual Function Index questionnaire scale.

Table 1. FSFI Results Before and After Pessary Treatment

FSFI	Before Pessary N (%)	After Pessary N (%)
Sexual Dysfunction	100	0
Non Sexual Dysfunction	0	100

Table 2. Quality of life Results After Pessary Treatment

Type of pessary	Quality of life		Change From Poor To Good Quality of life(%)
	Poor (%)	Good (%)	
Ring Pessary	0	20	20(100%)

DISCUSSION

One of the most common complaints of patients suffering from pelvic organ prolapse (POP) is sexual dysfunction. POP defined as prolapsing of the organs in the pelvis from inside and outside of the vaginal canal downward. POP can present a serious public health problem that impacts women's quality of life. It is reported that POP negatively affects women's sexual function and quality of life, but is generally ignored by women. Nearly one-third of POP patients suffer from sexual dysfunction and dissatisfaction.⁴⁻⁶

Women considering POP treatment should be offered the use of a vaginal pessary as an alternative to surgery. A pessary should be considered for women with symptomatic POP who wish to become pregnant later in life. A vaginal pessary is an effective non-surgical treatment for women with POP, and up to 92% of women are successfully fitted with a pessary.⁹ A pessary can be placed in almost all women with uterine prolapse regardless of the stage and location of the prolapse.¹⁰

In one study protocol, a ring pessary was inserted first, followed by a Gellhorn pessary if the ring was not in place. The ring pessary was more successfully used in stage II (100%) and stage III (71%) prolapse, and stage IV prolapse more often required a Gellhorn pessary (64%). If possible, women should be taught to change their pessary independently. If a woman is unable to remove and replace her pessary, regular follow-up (e.g. every 3-4 months) is required. Annual follow-up is recommended for patients who are able to keep the pessary clean themselves.⁹

Pressure on the vaginal wall from the pessary may cause local devascularization or erosion in 2-9% of patients. Treatment should consist of pessary removal for 2-4 weeks and local estrogen therapy. Resolution may occur without local estrogen therapy. If the problem persists, more frequent pessary replacement or a different pessary may be required. Caregivers of patients with dementia should be made aware of the regular pessary changes required to avoid complications. Although rare complications such as fistula may occur, the use of a pessary is a low-risk intervention that can be offered to all women who are considering POP treatment.⁹

The use of a pessary device is one of the common methods used for pelvic problems; by keeping the pelvic organs in the right location, this can improve uterine prolapse, rectocele, cystocele, and urinary incontinence.⁷

Based on previous research, it shows the effectiveness of the pessary in treating pelvic disorders and improving the sexual function of subjects due to prolapse of the pelvic organs. In this study, there were 75% of subjects in the non-sexual dysfunction category who were evaluated 1 week after installing the pessary ring. A total of 11 (68%) subjects experienced changes in sexual function after installing a pessary.

The results of this study are similar to research conducted by Farhang et al. 2019, there was a significant relationship between increased sexual function and pessaries used in women suffering from prolapse ($p=0.006$). Where there were 37.5% of patients who experienced changes in sexual function after installing a pessary.⁴ The results of this study do not match the results of the study conducted by Handa et al. In this study, women who used a pessary experienced more problems in

achieving orgasm and libido than those who underwent surgery also experienced discomfort due to the sensation of a foreign object in their vagina.⁸

CONCLUSION

Using a pessary does not have a negative effect on sexual intercourse. The use of a pessary can improve sexual function in women who experience pelvic organ prolapse. One of the main limitations of this study is its underestimation in using various types of pessaries; only one type used in this research. Another weak point at the moment the number of research subjects is still small. Another weakness is that there are many factors and variable (biological, cultural, and social) influence sexual function; which cannot be controlled completely. Further research should be conducted in large number of sample to assess sexual dysfunction in Indonesia using these questionnaire.

REFERENCES

1. Rogers RG, Pauls RN, Thakar R, et al. An international Urogynecological association (IUGA)/international continence society (ICS) joint report on the terminology for the assessment of sexual health of women with pelvic floor dysfunction. *Int Urogynecol J* 2018;29:647–666.
2. Handa VL, Cundiff G, Chang HH, Helzlsouer KJ. Female sexual function and pelvic floor disorders. *Obstet Gynecol* 2008;111:1045–1052.
3. Pangastuti N, Santoso BI, Agustiningsih D, Emilia O. Validation test of Indonesian Female Sexual Function Index (Indonesian FSFI). *Bali Med J* 2019;8(1):164-168.
4. Farhang F, Bastani P, Khamnian Z, Pourbarghi M, Mallah F. The Comparasion of Sexual Function Before and After Pessary Placement in Women with Pelvic Fllor Disorders. *J Evolution Med* 2019;8(34):2694-2697.
5. ACOG Committee on Practice Bulletins--Gynecology. ACOG Practice Bulletin No. 85: Pelvic organ prolapse. *Obstet Gynecol* 2007;110:717-29.
6. Ozengin N et al. The Effect of Pelvic Organ Prolapse Type on Sexual Function, Muscle Strength, and Pelvic Floor Syntomps in Women: A Retrospective Study. *Turk J Obstet Gynecol* 2017;14:121-127.
7. Komesu YM, Rogers RG, Rode MA, et al. Pelvic floor symptom changes in pessary users. *Am J Obstet Gynecol* 2007;197(6):620.e1-6.
8. Handa VL, Dwyer PL. Sexual function and pelvic floor disorders treatment. *Best Pract Res Clin Obstet Gynecol* 2011;19:993-1008
9. American Urogynecologic Society, Tulingkas P. Pelvic Organ Prolapse. *American Collage of Obstetricians and Gynecologist*. 2019;134(5):e126–42.
10. Lazarou G. 2010. Pelvic Organ Prolapse. <http://emedicine.medscape.com/article/276259-overview>
11. Iglesia CB, Smithling KR. Pelvic Organ Prolapse. *American Family Physician*. 2017;96(3):179-85.
12. Pelvic Organ Prolapse: A Guide for Women. (2013). International Urogynecological Association, 24, 1783–1790.
13. Vos T, Flaxman AD, Naghavi M, et al. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the global burden of disease study 2010. *Lancet* 2012; 5380: 2163–2196.
14. Walker GJA and Gunasekera P. Pelvic organ prolapse and incontinence in developing countries: review of prevalence and risk factors. *Int Urogynecol J* 2011; 22: 127–135.
15. Smith FJ, Holman CD, Moorin RE, Tsokos N. Lifetime risk of undergoing surgery for pelvic organ prolapse. *Obstet Gynecol* 2010;116:1096–100.
16. Prawiroharjo, Sarwono. 2011. Ilmu Penyakit Kandungan. Yayasan bina Pustaka.
17. UNFPA. Status of reproductive morbidities in Nepal, 2006. Kathmandu United Nations Popul Fund, [www.advocacy.net.org/modules/fck/upload/file/upa/Status of Reproductive Morbidities in Nepal.pdf](http://www.advocacy.net.org/modules/fck/upload/file/upa/Status%20of%20Reproductive%20Morbidity%20in%20Nepal.pdf).

18. Gurung G, Rana A, Amatya A, Bista KD, Joshi AB and Sayami J. Pelvic organ prolapse in rural Nepalese women of reproductive age groups: what makes it so common? *Nepal J Obstet Gynaecol* 2008; 2: 35–41.
19. Hardianto, G., Prabowo, R.P., Nizomy, I.R. “Correlation between Risk Factors and Pelvic Organ Prolapse in Gynecology Outpatient Clinic, Dr. Soetomo Hospital Surabaya, 2007 – 2011”, *Majalah Obstetri & Ginekologi*, Vol. 21 No. 2 Mei - Agustus 2013: 61-66.
20. Hardianti, B. Faktor Faktor yang Berhubungan dengan Kejadian Prolapsus Uteri di RSUP Dr Kariadi Semarang. 2015. Fakultas Kedokteran Universitas Diponegoro.
21. Weintraub AY, Gliner H, Braun NM. Narrative Review of The Epidemiology, Diagnosis and Pathophysiology of Pelvic Organ Prolapse. *Int Braz J Urol*. 2020; 46:5-14.
22. Rantel A, Cert PG. Vaginal Pessaries for Pelvic Organ Prolapse and Their Impact on Sexual Function. *Sex Med Rev*. 2019;7:597-603.
23. Lee Y, Lim M, Joo J, Park K, Lee S. Seo S. Development and Validation of the Korean Version of the Female Sexual Function Index-6 (FSFI-6K). *Yonsei Med J* 2014. 55(5),1442-46. doi: <http://dx.doi.org/10.3349/ymj>.
24. Khan ME, Townsend JW, Pelto PJ. Sexuality, Gender Roles, and Domestic Violence in South Asia. The Population Council, Inc. New York. 2014.
25. Thomas HN, Thurston RC. A Biopsychosocial Approach to Women’s Sexual Function and Dysfunction at Midlife: A Narrative Review. *Maturitas*. 2016 May ; 87: 49–60. doi: 10.1016/j.maturitas
26. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, et. al. The Female Sexual Function Index (FSFI): A Multidimensional Self-Report Instrument for the Assessment of Female Sexual Function. *Journal of Sex & Marital Therapy*, 2011. 26:2, 191-208 doi: 10.1080/009262300278597.
27. Ryding, E. L., & Blom, C. Validation of the Swedish version of the Female Sexual Function Index (FSFI) in women with hypoactive sexual desire disorder. *J Sex Med*. 2015. 12, 341–349. doi: 10.1111/jsm.12778.
28. Filocamo, M. T., Serati, M., Li Marzi, V., Costantini, E., Milanesi, M., Pietropaolo, A., and Villari, D. The Female Sexual Function Index (FSFI): Linguistic validation of the Italian version. *J Sex Med*. 2014. 11, 447–453. doi: 10.1111/ jsm.12389.
29. Takahashi M, Inokuchi T, Watanabe C, Saito T, Kai K. The Female Sexual Function Index (FSFI): Development of a Japanese Version. *J Sex Med* 2011;8:2246–2254. doi: 10.1111/j.1743-6109.2011.02267.