Changes in quality of life using the Pelvic Floor Distress Inventory Short Forms 20 following vaginal surgery in women with pelvic organ prolapse: a prospective cohort study

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Abstract

Pelvic organ prolapse (POP) is a condition in which the genital organs are protruding into the vagina. Therapeutic approaches to POP consist of conservative treatment and surgery. The Pelvic Floor Distress Inventory Short Forms 20 (PFDI-20) questionnaire has been used to assess the quality of life of patients. This prospective cohort study, conducted at Dr. Soetomo Hospital from 2022 to 2024, aims to determine the effectiveness of vaginal surgery in improving quality of life in women with POP, based on PFDI-20. Data containing a self-administered questionnaire about quality of life by PFDI-20 were recorded. A questionnaire was administered before and 6 months after surgery. Data were analyzed using a paired t-test, an independent t-test, and one-way analysis of variance. Data analysis was done using SPSS 24.0.

In this study, 40 subjects were involved. The age of subjects was between 40 and 77 years, with a mean of 56.25±9.61. According to the paired t-test, there is a significant difference between the mean PFDI-20 score before (23.48±7.86) and 6 months after surgery (7.16±3.57), with a mean difference in the decrease in the PFDI-20 score of 16.32 (p=0.001). There was significant improved quality of life in women with POP after vaginal surgery.

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Introduction

Pelvic organ prolapse (POP) is a condition in which the genital organs are protruding into the vagina. This occurs due to weakness of the muscle, fascia, and supporting ligaments. POP can be in the form of cystocele, rectocele, enterocele, cervical elongation, urethrocele, uterine prolapse, and vaginal prolapse. At the Dr. Cipto Mangunkusumo Hospital, Indonesia, Junizaf *et al*. reported that 50% of women who have given birth will suffer from POP, and nearly 20% of cases undergoing gynecological surgery were POP cases.[1]

POP is a major concern in terms of women's health at all ages,[1,2] and it is often associated with decreased quality of life. It may disrupt the bladder, gastrointestinal, and sexual function.[2-5] Nowadays, life expectancy is increasing, and the number of the elderly population has led to an increased incidence of POP.[2] Loss of vaginal or uterine support in women presenting for a routine gynecologic examination can be found in up to 43-76% of patients, with 3-6% having descent beyond the hymen.[3] POP affects around 40% of women globally, and as the population ages, this percentage is predicted to rise.[6]

Therapeutic approaches of POP consist of conservative treatment and surgery.[2,5,7-9] Not only to reconstruct the pelvis, the goal of therapy in patients with POP is also to eliminate complaints to restore the quality of life of the patient, thus the patient may perform activities without any interference from the symptoms of prolapse.[7] Selection of surgical or conservative therapy was based on the patient's choice (whether to undergo surgery or not), health condi-

tion, age, severity of symptoms, risk for disease recurrence, and the desire to have children and the return of sexual function.[5]

Several studies have reported success in reducing the symptoms of vaginal surgery in POP in both voiding symptoms and symptoms of prolapse and colorectal. The Pelvic Floor Distress Inventory Short Forms 20 (PFDI-20) questionnaire has been used to assess the quality of life of patients with POP and has been clearly reliable, and its validity has been proven to show good response in patients with POP. The use of PFDI-20 has been tested in Indonesia and has not been assessed for validity and reliability in Indonesia. We would like to evaluate the change in quality-of-life scores in patients with POP treated with vaginal surgery at Dr. Soetomo Hospital using PFDI-20.

Materials and Methods

Study design, setting, and period

A prospective study was conducted for 2022-2024 at a tertiary referral hospital in East Java, Dr. Soetomo General Academic Hospital, Surabaya, Indonesia.

Study population, eligibility criteria, and sampling procedure.

The study population consisted of patients diagnosed with POP who underwent vaginal surgery. The inclusion criteria were all patients diagnosed with POP and vaginal surgery and who were willing to assess the quality of life before and after treatment (third month) using a questionnaire PFDI-20, and the exclusion criteria were patients whose questionnaire data were incomplete and subjects who did not understand Indonesian well.

Variables and measurement

The independent variables in this study were age, parity, body mass index (BMI), and menopausal status. The dependent variable is the PDFI-20 score.

Study instruments and data collection

Quality of life before and after treatment (third month) was followed up by giving a questionnaire, PFDI-20, at the Urogynecology Outpatient Clinic at Dr. Soetomo Hospital.

Data analysis

Data were analyzed using a paired *t*-test, an independent *t*-test, and one-way analysis of variance.

Ethics approval

An ethical clearance letter was received from Dr. Soetomo General Academic Hospital. Confidentiality is guaranteed by avoiding personal information from participants and using coding.

Results

A total of 40 patients were included in the study. The pattern of demographic and clinical characteristics of patients was seen based on age, parity, BMI, menopausal status, and the degree of POP. Data patterns of demographic and clinical characteristics of patients with POP can be seen in Table 1.

The mean age of all subjects (n=40) was 56.25±9.61, with the lowest age being 40 years and the highest being 77 years. The average BMI was 26.22±4.06, with the lowest BMI being 16.50 kg/m^2 and the highest being 34.30 kg/m^2. Data were obtained for changes in quality-of-life scores of POP patients after the treatment of vaginal surgery using questionnaires PFDI-20 (Table 2). The mean PFDI-20 score before surgery of all subjects was 23.480±7.86, and the mean PFDI-20 score after surgery was 7.16±3.57. Meanwhile, the mean difference in score before and after surgery (change in PFDI-20 score) was 16.33±4.81, with the lowest difference score being 9 and the highest being 25.3. Table 3 shows that there was a significant change in the PFDI-20 score between before and after surgery in the three patient age groups (p=0.001). The mean difference in changes in the PFDI-20 score in the group of patients aged ≤50 years was 15.89, in the group of patients aged 51-60 years, it was 17.11, and in the group of patients aged >60 years, it was 15.92. Although the group of patients aged 51-60 years had a higher mean difference in PFDI-20 score changes, there was no significant mean difference between the difference in PFDI-20 score changes in the three groups (p=0.878).

Discussion

POP is a major concern in women's health issues at all ages. POP is often associated with decreased quality of life, and it may cause a disruption in the bladder, gastrointestinal, and sexual dysfunction. The research we performed aimed to see the changes and comparison of the quality of life of patients before and after therapy with the use of the PFDI-20 questionnaires in patients with POP at Dr. Soetomo Hospital. This study analyzed 40 patients with POP who underwent vaginal surgery.

In this study, we discovered significant changes in scores after treatment with a p-value of 0.317. This study was in line with sev-

Table 1. Characteristics of the subjects.

Characteristic	n	%
Age		
≤50y	14	35
51-60y	14	35
> 60y	12	30
Parity		
1-3	28	70
>3	12	30
Body mass index		
<25 kg/m^2	10	25
≥25 kg/m^2	30	75
Menopausal state		
Pre-menopausal	28	70
Post-menopausal	12	30
Pelvic organ prolapse stadium		
Stage I-II	22	55
Stage III-IV	18	45
Type of surgery		
Vaginal surgery with mesh	28	70
Vaginal surgery without mesh	12	30

Table 2. Pelvic Floor Distress Inventory Short Forms 20 score before and after surgery.

PFDI-20 score	n	Mean ± SD	p
Before surgery	40	23.48±7.86	0.001
After surgery	40	7.16±3.57	
Δ	16.32		

PFDI-20, Pelvic Floor Distress Inventory Short Forms 20; SD, standard deviation

Table 3. Changes in Pelvic Floor Distress Inventory Short Forms 20 scores before and after surgery in patients with pelvic organ prolapse based on risk factors

	n	PFDI-20 Score		p*	Δ	p**
		Before surgery mean ± SD	After surgery mean ± SD			
Age						
≤50	14	22.66±6.00	6.77±2.65	0.001	15.89	0.878
51-60	14	25.54±10.44	8.43±4.65	0.001	17.11	
>60	12	22.03±7.18	6.12±3.23	0.001	15.92	
Parity						
1-3	28	21.79±6.84	6.61±3.29	0.001	15.17	0.103
>3	12	27.43±9.30	8.42±4.21	0.001	19.02	
Body mass index						
<25 kg/m^2	10	25.40±10.31	9.20±3.84	0.007	16.20	0.963
≥25 kg/m^2	30	22.84±7.20	6.47±3.34	0.001	16.37	
Menopausal state						
Pre-menopause	28	23.35±8.82	7.11±4.03	0.001	16.24	0.911
Post-menopause	12	23.78±5.70	7.27±2.52	0.001	16.52	

PFDI-20, Pelvic Floor Distress Inventory Short Forms 20; *a paired t-test, an independent t-test; **one-way analysis of variance.

eral studies conducted before. Barber *et al*., in 2006, assessed the quality of life of 64 patients who underwent vaginal surgery by using full version PFDI. The study found improved quality of life after treatment regarding POP complaints, complaints of micturition, colorectal complaints on the PFDI-20 questionnaire and complaints of prolapse in the Pelvic Organ Prolapse Impact Questionnaire-7, urinary complaints in Urinary Impact Questionnaire, all showing the value of <0.0001; whereas colorectal complaints in Colorectal-Anal Impact Questionnaire (CRAIQ) were not found to have significant changes despite clinical improvement.[9]

Research conducted by Doaee *et al*., who reviewed and carried out a meta-analysis on 11 studies, found that patients who underwent vaginal surgery had good quality-of-life improvement after treatment. In this study, the change in scores obtained on the PFDI-20 questionnaire was 16.32 (23.48 to 7.16).[10] The Pelvic Floor Impact Questionnaire (PFIQ), PFDI, and sexual activity of patients with POP (Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire) were significantly correlated with the use of surgical approach techniques, including vaginal and abdominal surgery. Pessary use has also been linked to patients' quality of life.[11] Kaplan *et al*. found that in 103 women with prolapse, there were good post-repair procedure improvements in 6 months on all the scales on PFDI-20 and PFIQ-7 with p<0.001, except for CRAIQ-7 symptoms (p=0.016). In all four studies, further symptoms that were still affecting the patient's post-procedure were not explained. There are significant changes in the quality-of-life scores after vaginal surgery therapy in our study, which are in line with previous studies.

Conclusions

There is a significant reduction on the PDFI-20 score of patients after the treatment of POP with vaginal surgery. Further research should be conducted to assess the quality of life of patients with pelvic floor dysfunction in Indonesia using these questionnaires.

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