

# Life quality differences before and after hemorrhoid treatment

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## ABSTRACT

Hemorrhoids are the third most frequent gastrointestinal condition. The symptoms of hemorrhoid illness may include pain, itching, bleeding, soiling, and swelling. This study aimed to examine the impact of treatment on hemorrhoid patients' quality of life. 36 patients with hemorrhoids between 18 to 60 took part in this longitudinal study before and after treatment between April and August 2022. Health-related quality of life (HRQOL) before and after treatment is  $0.037 < 0.051$ . Lower quality of life in terms of essential health is indicated by the health scale modified for hemorrhoid disease symptom score (HSHD) since the score before treatment is lower than the score after treatment. The p-value thus shows a significant impact both before and after treatment. The research on hemorrhoid patients showed that the patient's quality of life increased after treatment.

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## 1. INTRODUCTION

Hemorrhoids are one of the most common conditions affecting the lower gastrointestinal tract, and problems are often what prompt patients to seek medical care [1]. Hemorrhoids are the third most frequent gastrointestinal condition, with an estimated million visits annually and affecting around 75% of adults. The Caucasian race between the ages of 45 and 65 has the most significant frequency [2]. The symptoms of hemorrhoid illness may include bleeding, prolapse, irritation, itching, discomfort, and less frequent urination [3]. Hemorrhoids are generally divided into two categories: external and internal. These categories are based on anatomical placement to the dentate line [2].

Treatment methods vary from minimally invasive medical procedures to invasive surgical procedures depending on the severity of hemorrhoidal disease [4]–[6]. Goligher's classification system, which bases hemorrhoidal disease severity on the degree of rectal prolapse, is often used. Hemorrhoids of grade 1 bleed but do not include prolapse; hemorrhoids of grade 2 may prolapse after straining but naturally heal; hemorrhoids of grade 3 may prolapse after exercise but are treatable; and hemorrhoids of grade 4 are permanently prolapsed and cannot be cured [7]. A greater risk of thrombosis or strangulation, excruciatingly painful and incapacitating conditions, exists in rectal hemorrhoids that have prolapsed [8].

Hemorrhoids may have a variety of causes including smoking, excessive alcohol consumption, eating fatty or spicy meals, living an unhealthy lifestyle, and not exercising enough. Other variables that might increase the chance of having this condition include poor toilet habits, venous blood flow disturbance, body mass, and genetics [9]. Additionally, hemorrhoids can lower the quality of life and impact of health on someone's ability to function and participate in essential activities within the family, workplace, and community [10], [11]. Measuring health-related quality of life (HRQOL) is necessary to study patients with

chronic pain conditions like hemorrhoids. It is a tool to evaluate patients' subjective views on their pain experience and its effect on their life [10]. This study aimed to investigate the quality of life of hemorrhoid patients before and after treatment.

## 2. METHOD

A longitudinal study of 36 patients with hemorrhoids between 18 and 60 took part in this study before and after treatment between April and August 2022. Multivariate analysis using multiple regression was performed to discover significant relationships between variables. This study also included a total of 26 questions, including five in the daily habit domain, eight in the hemorrhoid knowledge domain, five in the symptoms experienced area, five in the hemorrhoidal disease symptom score (HDSS) domain, and four in the short health scale HD domain (SHSHD). The instrument's validity and reliability have been examined. The questionnaire was created and sent to the participants using Google Forms. Questionnaires were used at two different time points: before and after treatment. IBM SPSS for Windows, version 25, was used for all analyses. This work was reviewed and authorized by the research ethics committee of the faculty of medicine and health sciences at Universitas Muhammadiyah Yogyakarta under the number 130/EC-KEPK FKIK UMY/V/2022. Electronic consent forms were completed by those who agreed to participate in this study. An anonymous internet survey was used to ensure the study's confidentiality and anonymity.

## 3. RESULTS AND DISCUSSION

The final research participants (n=36) included those who responded to both surveys. The respondents were between the ages of 18 and 60. Most respondents were men (58.3%). Table 1 contains a list of the participants' characteristics.

Table 1. The characteristics of patients

Variable	N=36 (%)	Variable	N=36 (%)
Demographics		BMI (kg/m <sup>2</sup> )	
Age (years)	13 (36.1)	Underweight and normal	26 (72.2)
18–34	9 (25.0)	Overweight, pre-obese, obese	10 (27.8)
35–44	12 (33.3)	Unknown	0
45–59	2 (5.6)	Education	
>60	13 (36.1)	Elementary school	3 (8.3)
Income (Rupiah)		Junior high school	3 (8.3)
<1 million	6 (16.7)	Senior high school	13 (36.1)
1–2 million	8 (22.2)	Diploma	1 (2.8)
2–4.5 million	14 (38.9)	Bachelor's degree	15 (41.7)
4.5–8.5 million	7 (19.4)	Postgraduate	1 (2.8)
>8.5 million	1 (2.8)	Occupation	
Sex		Private employee	11 (30.6)
Male	21 (58.3)	Police	1 (2.8)
Female	15 (41.7)	Housewife	2 (5.6)
		Entrepreneur	10 (27.8)
		Others	12 (33.3)
Bathroom habits			
Straining (times per week)		Bowel movement (per week)	
<1	1 (2.8)	<1	15 (41.7)
1	1 (2.8)	1	6 (16.7)
2	3 (8.3)	2	6 (16.7)
3	4 (11.1)	3	6 (16.7)
4	4 (11.1)	>4x	3 (8.3)
>4	23 (63.9)		

A salary between 2 and 4.5 million rupiahs is earned by most participants (38.9%) per month. The average BMI for the majority, who are underweight, is 72.2%. 41.7% of the participants have a bachelor's degree. Most of the group (36.1%) are young to middle-aged people, which may have been a sign of their overall well-being. Fifty-two percent of the research participants also have no prior medical history of hemorrhoids. Consequently, no associations have been found between specific racial or ethnic groups and genetic or lifestyle factors that may affect hemorrhoidal illness in communities with colorectal problems. This is because individuals with colorectal issues may be more susceptible to hemorrhoidal disease due to various lifestyle variables. The majority of participants—63.9%—strained more than four times per week.

The majority of participants (97.7%) claimed they never drank alcohol, rarely exercised (30.6%), or smoked (83.3%). Thirty-six percent of participants reported daily fruit consumption and water intake of 1,100 to 1,500 cc. Hemorrhoids have never been a concern for 52.8% of the participants. Also, 36.1% of participants had the illness for less than a year. A diagnosis or explanation for their pain was available, according to most participants (n=36), before beginning treatment.

Our study revealed that 41.7% of respondents had less than one bowel movement per week. Constipation and difficult stools may exacerbate the symptoms of hemorrhoidal prolapse. In a study by Peery *et al.* 1,074 hemorrhoidal patients found that constipation, straining, and difficult stools were all associated with a higher prevalence of the condition [12]. Riss *et al.* who published a study involving 976 participants treated by colonoscopy, found that constipation was associated with an increased risk of hemorrhoids [13].

The main recommendation for patients is that their treatment should be based on the disease's mild to moderate severity. Diet is the most crucial factor in treating symptomatic grade 1 or 2 hemorrhoids by increasing fiber and fluid intake [14], [15]. Additionally, medications are recommended for treating symptoms. Surgical procedures are only recommended for patients with grade 3 or 4 hemorrhoids whose symptoms cannot be controlled by drugs and lifestyle modifications [8]. Table 2 contains the clinical findings of this research.

Table 2. The clinical findings

Variable	N=36 (%)
Hemorrhoids degree	
Bleeding	4 (11.1)
Masses can enter by itself	11 (30.6)
Get in with the help	13 (36.1)
Exit cannot enter	7 (19.4)
Do not know	1 (2.8)
Hemorrhoids type	
Internal	27 (75)
External	5 (13.9)
Do not know	4 (11.1)
Treatment	
Don't know	5 (13.9)
Drug	14 (38.9)
Lifestyle modification	3 (8.3)
Sclerobanding	6 (16.7)
Rubber band ligation	2 (5.6)
Laser hemorrhoidoplasty (LHP)	4 (11.1)
Hemorrhoidectomy	2 (5.6)
Position of hemorrhoids	
3 o'clock	5 (13.9)
6 o'clock	2 (5.6)
7 o'clock	1 (2.8)
8 o'clock	1 (2.8)
9 o'clock	2 (5.6)
11 o'clock	1 (2.8)
Do not know	24 (66.7)

This research aimed to examine the impact of treatment on hemorrhoid patients' quality of life. The results showed a significant improvement in participants' HRQOL after treatment. HRQOL ratings before and after therapy were highly linked with improvements in all SHSHD categories and overall SHSHD scores (p 0.001). After the pre-treatment, HRQOL scores for those patients were higher than post-treatment. The patient's quality of life has improved (more significant improvement in HRQOL). Due to this finding, the pre-test HRQOL was included as a variable in the statistical model.

The least squares (LS) mean score in Table 3 had a p-value of 0.001, which indicated a significant difference between the mean scores before and after treatment. It was statistically significant that patients with and without hemorrhoids differed by 0.06. A lower score of -0.23 or a negative domain score, i.e., no change, indicated the presence of rectal itching. The mean difference for bleeding patients was 0.49, suggesting a significant change. A 0.25-point deduction was applied for having soiled underwear. Therefore, this has an effect. Given that the standard deviation variance was 0.39, assessing enlarged hemorrhoids is crucial.

The adjustment table for quality of life contained the baseline means before and after the intervention. A p-value of 0.021 suggested a difference or effect between the two-time points. A primarily high score indicates more severe symptoms even if the mean value for symptom intensity was 0.22. With a

score of -0.47, it is clear that everyday routines did not alter much. A score of 0.22 and a general well-being value of 0.47 may indicate that the patients also feel anxious. This crucial score shows that the symptoms are becoming worse.

The main goals of HD interventions are to treat symptoms and enhance HRQoL. After treatment, patient-reported symptoms significantly improved, and HRQoL measures also improved. The health domain scale's most significant improvement was seen for pain intensity and interference with daily activities. Improvement in physical pain has been observed in all clinical trials on HD treatments that have reported changes in HDSS and SHSHD domain scores [16], [17]. Our findings suggest that a disease-specific HRQoL instrument can better detect changes in HRQoL. This should be considered by surgeons and researchers when deciding on outcome metrics for clinical trials or clinical practice. A disease-specific HRQoL tool like the SHSHD will most likely be used as an adequate outcome measure. Other HRQoL metrics for proctologic illnesses have also recently been introduced [18], [19].

The discomfort caused by hemorrhoids can significantly affect a person's quality of life (QOL) even though the condition is not fatal [20]. The SHSHD examines the frequency of patients worrying about their hemorrhoids before treatment. Patients were most concerned about their symptoms across all SHSHD domains. This illustrates how the condition impacts the mind, as clinical hemorrhoid assessment does not provide an exclusive representation of the disease. The patients' anxiety decreased after invasive treatment, suggesting that the treatment reduces symptoms and treats the underlying condition. The patients seem to trust the surgeon's recommendations, so assessing the quality of life for hemorrhoids can reveal patient concerns, including patient treatment decisions, and improve patient-centered care [21].

Higher scores on the HDSS correlated with higher pain levels on the SHSHD. Our results showed that frequent soiling significantly affected the quality of life, in contrast to previous studies that indicated that frequent soiling did not considerably affect the quality of life. This finding may reflect patients' tendency to seek health, as anxious patients may be more motivated to consume fruits and vegetables to alleviate their symptoms [21], [22]. As it has been shown that symptom severity correlates with treatment type, future studies could use HRQOL to choose between different invasive treatments. Although SHSHD is not a diagnostic or predictive technique, surgeons can use it with clinical judgment to decide how to treat patients with hemorrhoids [23].

Table 3. The least squares (LS) mean scores at weeks 4 and 8, as well as the change since the beginning of the study

	Mean (s.d) score	Mean (s.d)		Different mean	P (F-test)	95%		Different Mean (95%)
		Weeks 4	Weeks 8			Before	After	
HDSS domain								
Pain	1.71	2.42	2.36	0.06	0.001	1.47	1.96	-0.49
Itching	2.41	2.19	2.42	-0.23	0.001	2.05	2.77	-0.72
Bleeding	2.36	2.11	1.64	0.49	0.001	1.91	2.81	-0.9
Soiling	2.83	1.31	1.56	-0.25	0.001	2.18	3.49	-1.31
Swelling	2.40	2.50	2.11	0.39	0.001	1.63	3.19	-1.56
SHSHD domain								
Symptom load	3.64	3.86	3.64	0.22	0.021	3.23	4.22	-0.99
Interference	4.39	3.92	4.39	-0.47	0.021	3.16	5.12	-1.96
Concern	4.50	4.72	4.50	0.22	0.021	4.03	5.21	-1.18
General well-being	3.03	3.50	3.03	0.47	0.021	3.15	3.45	-0.3

Table 4 shows the HRQOL score for the R square test before and after treatment is  $0.037 < 0.051$ . As the score before treatment was lower than that after treatment, the health scale adapted for hemorrhoid disease (HSHD) symptom score showed a poorer quality of life with essential health. Therefore, the p-value indicates a significant effect both before and after treatment. A person's quality of life can be negatively affected by hemorrhoids [24]. When the veins draining from the rectum are damaged, piles are formed. The rectal wall's venous plexus, connective tissue, and mucosa enlarge. Hemorrhoids develop above or below the medial line when the proximal columnar epithelium changes to distal squamous epithelium.

Table 4. R-square test

Model	R	R-square	Model summary			
			Adjusted R-square	Std. Error of the estimate		
1	.193 <sup>a</sup>	.037	.030	1.138	Before	
1	.226 <sup>a</sup>	.051	.045	1.176	After	

a. Predictors: (Constant), Post Test SHSHD

According to this study, there were significant differences in the patient's quality of life before and after hemorrhoid treatment. The number of people who reported no symptoms after treatment increased from seven to twelve. Furthermore, before the treatment, twenty-one people had blood during bowel movements, which was reduced to twelve people after the treatment. Before treatment, nine people did not have swollen hemorrhoids; after treatment, fourteen people did not have this symptom. Several studies have been conducted on this topic, and the findings are typically reliable. A study by Moussa *et al.* found that surgery patients improved their quality of life and symptom ratings, with a 72% success rate after one or two operations [25]. Following these results and a study by Campenni *et al.* a significant decrease in post-defecation bleeding events was linked to better hemorrhoid symptoms and a patient's quality of life [26]. Patients receiving medical treatment for piles reported less discomfort, consistent with an earlier study by Rudiman *et al.* [27]. Similar findings were found in a different study by Malekutei *et al.* which showed that hemorrhoid treatment substantially impacted patients' quality of life and health [28]. Regarding the impact of hemorrhoid treatment on patients' quality of life, another study carried out by Keong *et al.* also found the same thing, showing that patients' quality of life increased after the treatment [23].

A variety of factors could have caused our findings. Since the patients in our study were referred to the surgical department, the treatments designed had rehabilitative rather than palliative goals, which may have increased the patient's quality of life scores. In addition, the inadequate doctor-to-patient ratio in most developing countries frequently results in short consultation times and clear information the doctor provides; consequently, patients need more precise information about their prognosis [29]. In addition, culture influences the quality of life of patients. For example, caring for sick family members is ingrained in the cultures of Indonesia and Asia. When a family member is diagnosed with a disease, other family members provide care and support [30]. In Asian cultures, caring for sick family members is a responsibility and obligation [31]. Accordingly, during the treatment and recovery process, harmonious family relationships and effective communication develop between the patient and family [32]. This social and psychological aid can enhance the patient's quality of life. In contrast, patients who lack familial support have raised anxiety and low quality of life.

#### 4. CONCLUSION

Hemorrhoids are one of the most common conditions affecting the lower gastrointestinal tract, with symptoms such as bleeding, prolapse, irritation, itching, discomfort, and less frequent urination. The study on hemorrhoid patients showed that the patient's quality of life increased after treatment. This is apparent from the difference in the number of patients who complained of discomfort and other symptoms before and after treatment.

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