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A STUDY OF PSYCHOLOGICAL EFFECTS AND QUALITY OF LIFE AMONG WOMEN UNDERGOING HYSTERECTOMY FOR BENIGN GYNAECOLOGICAL CONDITIONS

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ABSTRACT

Background: Hysterectomy is one of the most commonly performed major gynaecological procedures for benign uterine disorders. While it effectively relieves physical symptoms, its influence on psychological well-being and quality of life remains an important aspect of postoperative recovery. The present study assessed changes in psychological status and quality of life among women undergoing hysterectomy for benign gynaecological conditions.

Methods: A prospective observational study was conducted among 100 women undergoing hysterectomy for benign gynaecological diseases at a tertiary care teaching hospital between October 2024 and March 2026. Psychological status was assessed preoperatively and six weeks postoperatively using the Depression Anxiety Stress Scale-21 (DASS-21), while quality of life was evaluated using the World Health Organization Quality of Life-BREF (WHOQOL-BREF) questionnaire. Demographic and clinical characteristics were recorded, and postoperative psychological status and quality of life were analysed using appropriate statistical tests. A p value <0.05 was considered statistically significant.

Results: The mean age of participants was 45.33 ± 6.22 years. Fibroid uterus (37%) was the most common indication for hysterectomy, followed by adenomyosis (27%). Total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed in 78% of women. Significant reductions were observed in mean depression (11.01 ± 4.33 vs. 5.48 ± 3.07), anxiety (9.39 ± 4.14 vs. 4.46 ± 2.35), stress (13.85 ± 3.87 vs. 8.13 ± 4.56), and total DASS-21 scores (34.25 ± 6.89 vs. 18.07 ± 6.05) following surgery (all $p<0.001$). Significant improvements were also observed in the physical, psychological, social, and environmental domains of WHOQOL-BREF (all $p<0.001$). Overall quality of life improved significantly ($p=0.001$), whereas health satisfaction did not show a statistically significant change ($p=0.098$). Anaemia was the only clinical factor significantly associated with postoperative quality of life ($p=0.0485$).

Conclusion: Hysterectomy for benign gynaecological conditions was associated with significant improvement in psychological well-being and multidimensional quality of life within six weeks of surgery. Routine assessment of psychological health and quality of life using validated instruments may facilitate comprehensive perioperative care and improve patient-centred outcomes.

KEYWORDS: Hysterectomy, Quality of Life, DASS-21, WHOQOL-BREF, Depression, Anxiety, Stress, Benign Gynaecological Disease.

INTRODUCTION

Hysterectomy, the surgical removal of the uterus, remains one of the most frequently performed major gynaecological procedures worldwide and continues to be the definitive treatment for several benign uterine disorders, including uterine fibroids, adenomyosis, abnormal uterine bleeding, endometriosis, chronic pelvic pain, and pelvic organ prolapse. Despite advances in conservative medical therapy and minimally invasive interventions, hysterectomy remains an effective treatment for women with persistent symptoms, recurrent disease, or failure of medical management, providing durable symptom relief and improvement in overall health-related quality of life.[1]

Globally, hysterectomy is among the most commonly performed non-obstetric surgical procedures in women. The incidence varies considerably across countries owing to differences in healthcare systems, socioeconomic conditions, availability of minimally invasive surgery, and clinical practice patterns. Recent evidence has demonstrated a gradual shift from conventional abdominal hysterectomy towards laparoscopic and robotic-assisted techniques because these approaches are associated with lower intraoperative blood loss, reduced postoperative pain, faster recovery, and shorter hospital stay.[2] Contemporary evidence-based recommendations further support minimally invasive hysterectomy whenever feasible because of its superior perioperative outcomes and patient satisfaction.[3] Long-term institutional data

have also demonstrated remarkable changes in hysterectomy practice over the past two decades, with increasing adoption of minimally invasive surgical techniques for benign gynaecological diseases.[4] Systematic reviews comparing robotic-assisted hysterectomy with abdominal, vaginal, and laparoscopic approaches have similarly reported favourable perioperative outcomes and enhanced postoperative recovery among appropriately selected women.[5]

In India, hysterectomy has become an important women's health issue because of its increasing prevalence and the relatively younger age at which many women undergo surgery. Nationally representative epidemiological studies have reported that hysterectomy is influenced by age, parity, socioeconomic status, educational attainment, geographical region, and access to private healthcare services.[6] Population-based evidence has further demonstrated substantial variation in hysterectomy prevalence across different Indian states, reflecting differences in healthcare accessibility and health-seeking behaviour.[7] Hospital-based studies from India consistently report fibroid uterus, adenomyosis, abnormal uterine bleeding, and pelvic organ prolapse as the leading indications for hysterectomy, with total abdominal hysterectomy remaining the most commonly performed procedure in tertiary care settings.[8] Histopathological analyses have also confirmed that the majority of hysterectomies performed for benign conditions demonstrate pathology consistent with the preoperative clinical diagnosis, supporting appropriate patient selection for surgery.[9]

Although hysterectomy effectively alleviates troublesome physical symptoms, its overall impact extends beyond surgical success. The uterus possesses considerable reproductive, psychological, cultural, and emotional significance for many women. Consequently, hysterectomy may influence body image, femininity, self-esteem, sexuality, interpersonal relationships, and psychological well-being. Women may experience diverse emotional responses following surgery, ranging from relief due to symptom resolution to anxiety, depression, altered self-perception, or concerns regarding sexual function and reproductive identity.[10]

The psychological consequences of hysterectomy have therefore attracted increasing research interest. A systematic review and meta-analysis concluded that women undergoing hysterectomy for benign disease generally experience significant improvement in psychological outcomes following surgery, largely attributable to the relief of chronic pain, excessive menstrual bleeding, and associated functional limitations.[11] Prospective longitudinal studies have further demonstrated sustained improvement in health-related quality of life even ten years after hysterectomy, indicating durable benefits beyond immediate postoperative recovery.[12] More recent prospective studies have also shown that postoperative resilience, reduction in pain, and improved physical functioning contribute significantly to better quality of life among women undergoing gynaecological surgery.[13]

Indian evidence similarly supports favourable psychological outcomes after hysterectomy. Hospital-based studies have demonstrated significant reductions in depression, anxiety, and stress together with marked improvements in quality of life following surgery, highlighting the importance of addressing psychological well-being alongside surgical management.[14] These findings reinforce the concept that patient-reported outcomes should be considered equally important as traditional surgical outcomes when evaluating the success of hysterectomy.

Despite increasing international evidence, prospective Indian studies simultaneously evaluating psychological status and multidimensional quality of life before surgery and during postoperative follow-up remain limited. Therefore, the present study was undertaken to assess the psychological effects and quality of life among women undergoing hysterectomy for benign gynaecological conditions before surgery and six weeks after hysterectomy, thereby generating clinically relevant evidence to support comprehensive, patient-centred perioperative care.

METHODOLOGY

This prospective observational study was conducted in the Department of Obstetrics and Gynaecology of a tertiary care teaching hospital over a period of 18 months, from October 2024 to March 2026. The study included women admitted for hysterectomy due to benign gynaecological conditions. A total of 100 eligible participants were enrolled using consecutive sampling after obtaining written informed consent. Women aged ≥18 years undergoing elective hysterectomy for benign indications such as fibroid uterus, adenomyosis, uterine prolapse, abnormal uterine bleeding, or postmenopausal bleeding were included. Patients undergoing hysterectomy for suspected or confirmed malignancy, obstetric indications, emergency procedures, previous major psychiatric illness, cognitive impairment, or those unwilling to participate were excluded.

Baseline demographic and clinical characteristics, including age, body mass index, socioeconomic status, parity, menopausal status, indication for surgery, type of hysterectomy, medical comorbidities, and anaemia status, were recorded using a structured proforma. Psychological status was assessed using the validated Depression Anxiety Stress Scale-21 (DASS-21), while quality of life was evaluated using the World Health Organization Quality of Life-BREF (WHOQOL-BREF) questionnaire. Both instruments were administered twice: once preoperatively at admission and again six weeks after surgery during follow-up to assess changes in psychological well-being and quality of life.

The primary outcome measures were changes in depression, anxiety, stress, and overall psychological distress as measured by DASS-21, together with changes in the four WHOQOL-BREF domains (physical, psychological, social, and environmental), overall quality of life, and health satisfaction. Secondary objectives included evaluation of the association between demographic and clinical variables and postoperative psychological status and quality of life, as well as the correlation between postoperative DASS-21 scores and WHOQOL-BREF domain scores.

Data were entered into Microsoft Excel and analysed using the Statistical Package for the Social Sciences (SPSS) software. Continuous variables were expressed as mean ± standard deviation, whereas categorical variables were presented as frequencies and percentages. Preoperative and postoperative continuous variables were compared using the paired t-test.

Independent t-test and one-way analysis of variance (ANOVA) were used to compare postoperative psychological and quality-of-life scores across demographic and clinical subgroups, while Pearson's correlation coefficient was used to evaluate the relationship between psychological status and quality-of-life domains. A two-sided p value <0.05 was considered statistically significant.

RESULTS

Table 1. Baseline Demographic and Clinical Characteristics of the Study Participants (N=100)

Variable	Value
Age (years), Mean ± SD	45.33 ± 6.22
BMI (kg/m²), Mean ± SD	26.62 ± 4.59
Socioeconomic status	
Low	45 (45.0)
Middle	47 (47.0)
High	8 (8.0)
Parity	
P1	18 (18.0)
P2	38 (38.0)
P3	27 (27.0)
≥P4	17 (17.0)
Menopausal status	
Premenopausal	39 (39.0)
Perimenopausal	29 (29.0)
Postmenopausal	32 (32.0)
Clinical indication	
Fibroid uterus	37 (37.0)
Adenomyosis	27 (27.0)
Uterine prolapse	18 (18.0)
Postmenopausal bleeding	18 (18.0)
Type of hysterectomy	
TAH	4 (4.0)
TAH + BSO	78 (78.0)
VH + PFR + BSO	18 (18.0)
Medical comorbidity	
None	53 (53.0)
Diabetes mellitus	20 (20.0)
Hypertension	20 (20.0)
Diabetes + Hypertension	7 (7.0)
Anaemia	
Present	51 (51.0)
Absent	49 (49.0)

Table 2. Comparison of Preoperative and Postoperative Psychological Status (DASS-21)

Variable	Preoperative Mean ± SD	Postoperative Mean ± SD	p value
Depression	11.01 ± 4.33	5.48 ± 3.07	<0.001
Anxiety	9.39 ± 4.14	4.46 ± 2.35	<0.001
Stress	13.85 ± 3.87	8.13 ± 4.56	<0.001
Total DASS-21	34.25 ± 6.89	18.07 ± 6.05	<0.001

Table 3. Distribution of Psychological Distress Severity Before and After Hysterectomy

Domain	Severity	Preoperative n (%)	Postoperative n (%)
Depression	Normal	6 (6.0)	30 (30.0)
	Mild	7 (7.0)	48 (48.0)
	Moderate	30 (30.0)	13 (13.0)
	Severe	39 (39.0)	8 (8.0)
	Extremely severe	18 (18.0)	1 (1.0)
Anxiety	Normal	1 (1.0)	25 (25.0)
	Mild	14 (14.0)	43 (43.0)
	Moderate	27 (27.0)	22 (22.0)
	Severe	35 (35.0)	9 (9.0)
	Extremely severe	23 (23.0)	1 (1.0)

Stress	Normal	7 (7.0)	42 (42.0)
	Mild	15 (15.0)	38 (38.0)
	Moderate	43 (43.0)	16 (16.0)
	Severe	35 (35.0)	4 (4.0)

Table 4. Comparison of WHOQOL-BREF Scores Before and After Hysterectomy

Domain	Preoperative Mean ± SD	Postoperative Mean ± SD	p value
Physical	55.06 ± 10.90	66.94 ± 15.32	<0.001
Psychological	52.65 ± 11.34	59.00 ± 15.15	<0.001
Social	57.99 ± 12.84	64.08 ± 16.14	<0.001
Environmental	63.37 ± 8.04	67.81 ± 11.49	<0.001
Overall quality of life	3.12 ± 0.71	3.45 ± 0.72	0.001
Health satisfaction	3.29 ± 0.83	3.45 ± 0.74	0.098

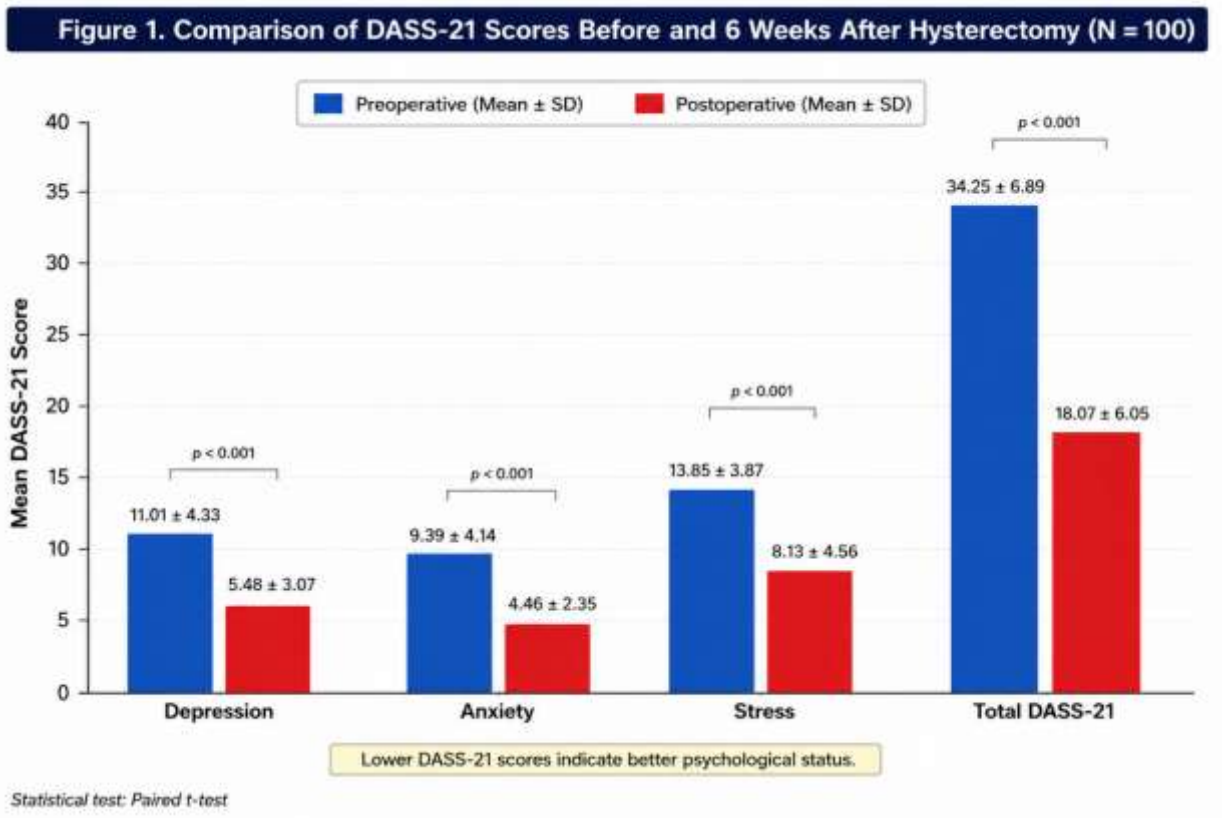
Table 5. Correlation Between Postoperative DASS-21 and WHOQOL-BREF Domains

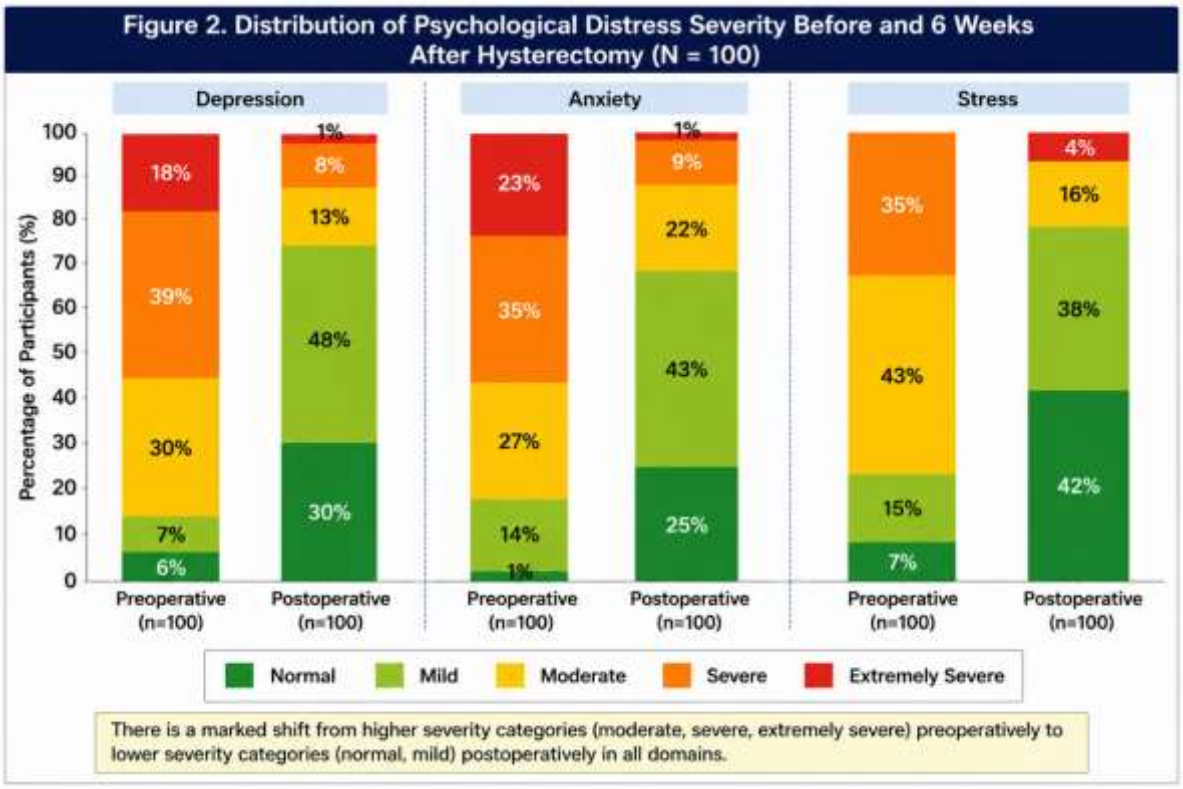
DASS Domain	Physical	Psychological	Social	Environmental	p value
Depression	0.12	−0.03	0.09	0.32	0.001
Anxiety	0.12	0.06	0.05	0.05	0.058
Stress	0.01	0.10	0.02	0.04	0.034

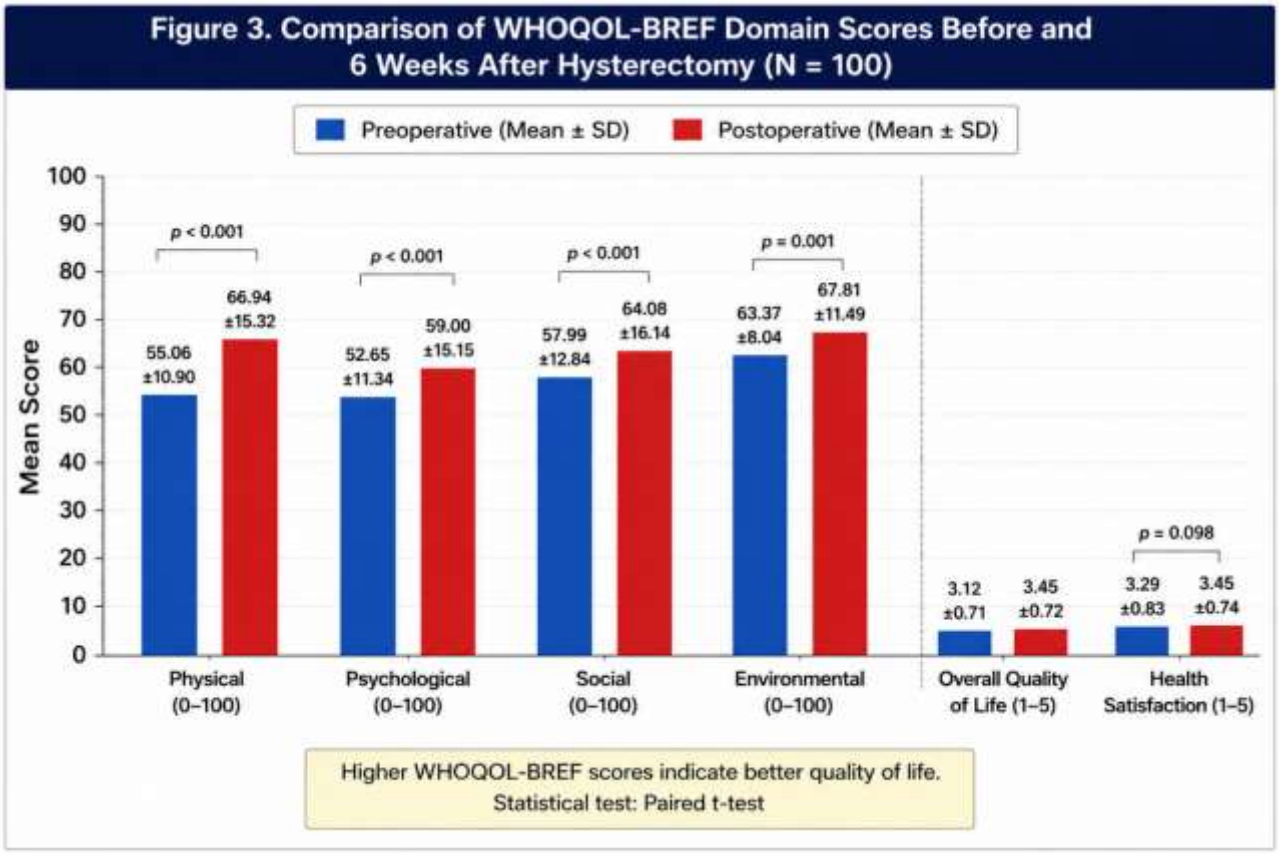
Table 6. Factors Associated with Postoperative Psychological Outcome and Quality of Life

Variable	Postoperative DASS p value	Postoperative QoL p value
Age	0.8145	0.7127
Type of surgery	0.3301	0.8013
Clinical indication	0.5328	0.9390
Menopausal status	0.6480	0.7908
Anaemia	0.6797	0.0485*

*Statistically significant ($p < 0.05$).







DISCUSSION (Part 1)

The present prospective observational study evaluated the psychological effects and quality of life among women undergoing hysterectomy for benign gynaecological conditions. The mean age of the study participants was 45.33 ± 6.22 years, indicating that hysterectomy was predominantly performed during the perimenopausal period. This finding is consistent with the epidemiological pattern reported by Baskett, who described hysterectomy as one of the commonest major gynaecological procedures performed among women in the fourth and fifth decades of life because of the increasing prevalence of benign uterine disorders during this period.[15] The evolution of hysterectomy over the past century has

been driven by advances in surgical techniques, improved perioperative care, and greater emphasis on patient-centred outcomes, resulting in improved safety and postoperative recovery.[16]

In the present study, fibroid uterus (37%) was the leading indication for hysterectomy, followed by adenomyosis (27%), while uterine prolapse (18%) and postmenopausal bleeding (18%) accounted for the remaining cases. These findings are comparable with the observations of Drouin et al., who noted that benign uterine disorders, particularly leiomyomas and adenomyosis, remain the principal indications for hysterectomy worldwide despite increasing availability of conservative treatment options.[17] The predominance of fibroid uterus in the present study also reflects current clinical practice, where persistent symptoms, pressure effects, heavy menstrual bleeding, and failure of medical management frequently necessitate definitive surgical intervention.

The majority of women in the present study underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy (78%), whereas only 18% underwent vaginal hysterectomy with pelvic floor repair and 4% underwent total abdominal hysterectomy alone. Although minimally invasive surgery has become increasingly popular internationally, abdominal hysterectomy continues to be widely practiced in many developing countries because of patient characteristics, surgeon expertise, and institutional resources. The continued predominance of abdominal hysterectomy in the present study therefore reflects real-world practice in tertiary care centres.

Assessment of postoperative outcomes requires reliable and validated instruments capable of evaluating both physical and psychological health. In the present study, psychological well-being was assessed using the Depression Anxiety Stress Scale-21 (DASS-21), while quality of life was evaluated using the WHOQOL-BREF questionnaire. The WHOQOL-BREF has demonstrated excellent psychometric properties and international applicability across diverse populations, making it an appropriate tool for assessing multidimensional quality of life following hysterectomy.[18] Similarly, Skevington et al. confirmed that WHOQOL-BREF provides reliable measurement across physical, psychological, social, and environmental domains and is suitable for longitudinal evaluation of treatment outcomes.[19] The DASS-21, developed by Lovibond and Lovibond, remains one of the most widely validated instruments for quantifying depression, anxiety, and stress in both clinical and research settings, permitting objective assessment of psychological changes following surgical interventions.[20]

The present study demonstrated a significant improvement in psychological well-being following hysterectomy for benign gynaecological conditions. The mean depression score declined from 11.01 ± 4.33 before surgery to 5.48 ± 3.07 six weeks after hysterectomy. Similarly, anxiety decreased from 9.39 ± 4.14 to 4.46 ± 2.35, while stress reduced from 13.85 ± 3.87 to 8.13 ± 4.56. Consequently, the overall DASS-21 score decreased from 34.25 ± 6.89 preoperatively to 18.07 ± 6.05 postoperatively, with all changes being highly statistically significant ($p<0.001$). These findings indicate marked early psychological recovery following definitive surgical management of benign uterine disorders.

Makroum et al. evaluated patient-reported outcomes following hysterectomy for benign gynaecological disease and observed significant postoperative improvements in physical functioning, emotional well-being, and overall patient satisfaction. Although the authors primarily reported patient-reported outcome measures rather than DASS-21 scores, their findings support the present study, where substantial reductions in depression, anxiety, and stress were accompanied by improved quality of life after surgery. The improvement observed in both studies is likely attributable to relief from chronic pelvic pain, heavy menstrual bleeding, pressure symptoms, and improvement in day-to-day functioning following hysterectomy.[21]

A prospective cohort study by Farquhar et al. demonstrated that women experienced favourable mental health outcomes following hysterectomy, with no evidence of worsening psychological morbidity during follow-up. The authors concluded that relief of long-standing gynaecological symptoms contributed to improved emotional well-being after surgery. These observations closely parallel the findings of the present study, where the proportion of women with severe and extremely severe depression declined from 57% preoperatively (39% severe and 18% extremely severe) to only 9% postoperatively (8% severe and 1% extremely severe). Likewise, severe psychological distress became uncommon after surgery, indicating a clinically meaningful improvement in mental health.[22]

Similarly, Wilson and Mishra reported that hysterectomy performed for benign disease was not associated with an increased long-term risk of depressive symptoms among midlife women. Instead, most women demonstrated satisfactory psychological adjustment after surgery, particularly when debilitating preoperative symptoms had significantly affected their daily activities. The present findings are consistent with this observation, as the percentage of women classified as psychologically normal increased substantially after hysterectomy. For depression, the proportion of women in the normal category increased from 6% to 30%, while mild depression increased from 7% to 48%, reflecting a clear shift from higher to lower severity categories following surgery.[23]

The American College of Obstetricians and Gynecologists (ACOG) recommends selecting the most appropriate route of hysterectomy according to patient characteristics, uterine pathology, surgeon expertise, and available resources, with preference for minimally invasive techniques whenever feasible because of improved postoperative recovery and patient satisfaction. Although 78% of women in the present study underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy, significant improvement in psychological outcomes was nevertheless observed. This suggests that complete relief of symptoms and successful surgical treatment may exert a greater influence on postoperative psychological recovery than the surgical route alone.[24]

The ACOG Practice Bulletin on the management of symptomatic uterine leiomyomas recognises hysterectomy as the definitive treatment for women with symptomatic fibroids who have completed childbearing or in whom conservative treatment has failed. In the present study, fibroid uterus was the commonest indication (37%), followed by adenomyosis

(27%), and these women experienced significant improvement in postoperative psychological status. The resolution of chronic abnormal uterine bleeding, pelvic pain, bulk-related symptoms, and repeated healthcare visits after definitive surgery may explain the marked reduction in depression, anxiety, and stress observed in the present study. These findings support current guideline recommendations that appropriate patient selection and timely surgical intervention can substantially improve both physical and psychological health outcomes.[25]

In the present study, hysterectomy resulted in significant improvement across almost all domains of quality of life. The mean physical domain score of the WHOQOL-BREF increased from 55.06 ± 10.90 before surgery to 66.94 ± 15.32 after surgery ($p<0.001$). Similarly, the psychological domain improved from 52.65 ± 11.34 to 59.00 ± 15.15, the social relationship domain from 57.99 ± 12.84 to 64.08 ± 16.14, and the environmental domain from 63.37 ± 8.04 to 67.81 ± 11.49, demonstrating statistically significant improvement in overall quality of life. In addition, the overall quality-of-life score improved significantly from 3.12 ± 0.71 to 3.45 ± 0.72 ($p=0.001$), whereas the increase in health satisfaction did not achieve statistical significance ($p=0.098$). These findings indicate that successful hysterectomy positively influences multiple dimensions of women's health beyond symptom relief.

The World Health Organization developed the WHOQOL instrument to provide a comprehensive assessment of physical, psychological, social, and environmental well-being rather than focusing solely on disease-specific outcomes. The present study effectively demonstrates this multidimensional improvement following hysterectomy, particularly in the physical and psychological domains, thereby supporting the applicability of WHOQOL-BREF for evaluating postoperative quality of life in women undergoing benign gynaecological surgery.[26]

Darwish and Atlantis reviewed the available evidence on psychological adaptation following hysterectomy and concluded that most women undergoing surgery for benign disease experience favourable psychological adjustment and improved quality of life after symptom resolution. Although their systematic review synthesized findings from multiple studies rather than reporting pooled WHOQOL-BREF scores, the conclusions are consistent with the present study, which demonstrated significant reductions in depression, anxiety, and stress together with simultaneous improvement in all major quality-of-life domains. The observed improvement is likely attributable to relief from chronic pelvic pain, heavy menstrual bleeding, pressure symptoms, and the consequent restoration of daily physical and social functioning.[27]

Giannini et al. emphasized that modern evaluation of hysterectomy should move beyond traditional surgical outcomes and include patient-centred measures such as quality of life, emotional well-being, recovery of normal activities, and patient satisfaction. The findings of the present study strongly support this concept. Although postoperative complications were not the primary outcome, significant improvement was observed in psychological status as well as WHOQOL-BREF scores, indicating that successful hysterectomy should be assessed using both clinical and patient-reported outcome measures.[28]

Similarly, Buderath et al. described the evolution of hysterectomy practice over two decades and highlighted that advances in surgical management have increasingly focused on improving postoperative recovery and long-term patient outcomes rather than merely refining operative techniques. Despite the predominance of total abdominal hysterectomy with bilateral salpingo-oophorectomy (78%) in the present study, women demonstrated marked improvement in psychological well-being and quality of life. This observation suggests that, irrespective of surgical approach, appropriate patient selection, meticulous perioperative management, and successful treatment of underlying benign pathology remain the principal determinants of favourable postoperative outcomes.[29]

A prospective cohort study by Isokääntä et al. reported progressive improvement in health-related quality of life following gynaecological surgery, particularly in physical functioning and psychological well-being during postoperative follow-up. The present study demonstrated a similar trend, with the largest improvement occurring in the physical domain, which increased by approximately 12 points after surgery, followed by significant improvement in the psychological, social, and environmental domains. Furthermore, correlation analysis in the present study showed that lower postoperative depression scores were significantly associated with better environmental quality-of-life scores ($p=0.001$), while stress also demonstrated a significant association with quality-of-life outcomes ($p=0.034$). These findings indicate that psychological recovery and quality of life are closely interrelated following hysterectomy. Additionally, among the clinical variables studied, anaemia was the only factor significantly associated with postoperative quality of life ($p=0.0485$), whereas age, menopausal status, indication for surgery, and type of hysterectomy showed no statistically significant association. These observations suggest that optimization of modifiable factors such as anaemia may further enhance postoperative recovery and patient-reported outcomes.[30]

CONCLUSION

The present study demonstrated that hysterectomy performed for benign gynaecological conditions resulted in significant improvement in both psychological well-being and quality of life. Depression, anxiety, stress, and overall psychological distress decreased significantly six weeks after surgery, while physical, psychological, social, and environmental domains of quality of life showed marked improvement. Fibroid uterus remained the most common indication for hysterectomy, with total abdominal hysterectomy with bilateral salpingo-oophorectomy being the predominant surgical procedure. Among the clinical variables studied, anaemia was the only factor significantly associated with postoperative quality of life. These findings highlight that the benefits of hysterectomy extend beyond symptom relief and include meaningful improvement in emotional health and overall well-being. Incorporating validated patient-reported outcome measures such as DASS-21 and WHOQOL-BREF into routine perioperative assessment may facilitate holistic, patient-centred care and help optimize postoperative recovery among women undergoing hysterectomy for benign gynaecological disorders.

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