

Assessment of Psychological Improvements in Patients Having Successful Fistula Repair in Perimenopause Age

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Author's Contribution

^{1,2}Substantial contributions to the conception or design of the work; or the acquisition, Final approval of the study to be published, ³⁻⁵Drafting the work or revising it critically for important intellectual content, analysis, or interpretation of data for the work.

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ABSTRACT

Objective: To document the psychological improvements in perimenopausal women (aged 40–55 years) after undergoing surgical repair of fistula at our hospital.

Methodology: This analytical study was carried out at the Department of Obstetrics and Gynecology, Pakistan Institute of Medical Sciences (PIMS), Islamabad from April 01, 2021, to March 31, 2024. Non-probability consecutive sampling technique was employed. All women aged 40–55 years who presented for the surgical repair of fistula were included in the study. Patients who had any pre-existing history of psychiatric disorders and those who did not fall in the perimenopausal age range were excluded. The patients were managed according to established standard protocols. The pre-surgical and post-surgical assessments (performed at 06-months follow-up) evaluated the socio-demographics of the patients, their perimenopausal symptoms (vasomotor, urogenital, sexual), and the psychological outcomes (anxiety via GAD-7 scale, depression, self-esteem).

Results: There was a total of 50 women who underwent fistula repair during the study period. Most of them (94%) belonged to low-income families. The contribution of rural residents was 84%. Significant post-repair reductions were observed in anxiety (3.35 ± 2.7 from 9.90 ± 5.2 ; $p < 0.001$), fear during intercourse (42% from 86%; $p < 0.001$) and urinary complaints (4% from 100%; $p < 0.001$). Insignificant improvements were observed in mood swings ($p = 0.26$) and sleep disturbances ($p = 0.17$).

Conclusion: Most of the anxiety and physical symptoms were alleviated by fistula repair; however residual psychological challenges persisted among a small proportion of the patients. These were influenced by menopausal transitions and socioeconomic vulnerabilities. Therefore, for ensuring complete recovery of women with fistula, an integrated post repair care is imperative. It should adequately address the mental health, hormonal deficiency, and the associated socioeconomic issues.

Keywords: Obstetric fistula, Perimenopausal, Psychological distress, Surgical repair, Anxiety, LMICs, Menopausal symptoms, Women's health

Introduction

Obstetric fistula is a catastrophic childbirth injury that is characterized by an abnormal opening between the vagina and urinary bladder or rectum. It continues to remain a pervasive yet neglected public health menace in the low and middle income countries. It is caused predominantly by prolonged, obstructed labor without timely medical intervention. It affects an estimated 2 million women globally with approximately 50,000–100,000 new cases occurring annually. Psychological sufferings worsen the physical toll of obstetric fistula which is accompanied by chronic incontinence, recurring infections and nerve pain. As a result, many women face social rejection, marital breakdowns and financial

hardship. In 80–90% of cases the surgery repairs physical damage, however the psychological recovery tends to lag especially for women experiencing life shifts like perimenopause. This intersection of fistula-related trauma and menopausal transitions presents a critical but understudied challenge as hormonal fluctuations during perimenopause exacerbate pre-existing psychological vulnerabilities and also create new physical symptoms mirroring the fistula-related distress^{1,5}

Perimenopause, the years leading up to menopause brings unpredictable cycles like hot flashes, vaginal dryness and mood changes. For women in low-resource settings, these

symptoms of ten mix with stressors like caregiving duties or poverty, creating a perfect storm for mental health decline. Surgical menopause that results from sudden hormone loss after procedures like total abdominal hysterectomies (TAH) can hit even harder. In areas with limited healthcare access, poorly performed hysterectomies may be complicated by fistulas. Women who develop fistula after TAH thus endure a dual burden: the trauma of surgical complications and the abrupt onset of menopausal symptoms both of which increase the psychological distress.⁶⁻⁹

Studies report that 30–40% of fistula patients face depression while over half struggle with anxiety and post-traumatic stress disorder (PTSD). Chronic incontinence fuels self-hatred and stigma pushes women to the margins of society. Sexual dysfunction which is driven by dyspareunia and fear of leakage during intercourse further strains intimate relationships and deepens emotional distress. For perimenopausal women, these issues collide with bodily aging. Dropping estrogen levels also worsen vaginal dryness, making sex painful while hot flashes disrupt sleep. Critically, symptoms like frequent urinary tract infections (UTIs) might linger on after fistula repair making it hard to tell what's menopausal versus fistula-related. This confusion means doctors might miss opportunities to prescribe hormone therapy or mental health support.¹⁻⁶

Though it's known that pelvic health and mental health are linked but few studies have focused on the older fistula survivors in low-income regions. A review in 2019 found that only three studies evaluated the post-repair mental health outcomes in women over 40 but none of them addressed menopausal status. This gap matters because older women often wait years for fistula care, face surgical menopause after hysterectomies, and deal with age-specific barriers like limited mobility or education. Even common mental health tools like the GAD-7 scale which measures the severity anxiety aren't routinely used long-term in this group. Clinicians struggle to separate temporary post-surgery stress from chronic disorders without this data.^{3,7-9}

The objective of this study was to document the psychological effects of successful fistula repair among women of perimenopausal age who were managed at Pakistan Institute of Medical Sciences (PIMS), Islamabad. The rationale of this study was to generate local evidence base in this regard. The generated evidence will in turn help to provide guidance for future better management of such patients presenting for fistula management at our facility.

Methodology

This analytical study was carried out at the Department of Obstetrics and Gynecology, Pakistan Institute of Medical Sciences (PIMS), Islamabad over a period of four years. (i.e., April 01, 2021 to March 31, 2024). The study was carried out in accordance with the ethical protocols of Helsinki's Declaration as revised in 2013. The anonymity of participants was guaranteed. Informed consent was taken from the patients. Non-probability consecutive sampling technique was employed. Women were included if they had a confirmed diagnosis of obstetric or iatrogenic fistula following total abdominal hysterectomy (TAH) and had experienced fistula-related symptoms for at least three months prior to repair. Patients who had a history of preexisting psychiatric disorders and those who did not fall in the perimenopausal age range were excluded from the study. The patients were managed according to established standard protocols. The pre-surgical and post-surgical assessments (performed at six-month follow-up) evaluated the socio-demographics of the patients, their perimenopausal symptoms (vasomotor, urogenital, sexual), and the psychological outcomes (anxiety via GAD-7 scale, depression, self-esteem).

Data collection was carried out in two phases: The first phase involved pre-surgical assessment (within 48 hours of admission) and the 2nd phase consisted of post-repair follow-up at six months. To collect relevant data, histories were taken from patients at the fistula ward using a structured and pre-coded questionnaire. The variables of interest were divided into three structured parts (i) socio-demographic details (age, residence, education and socioeconomic status), (ii) perimenopausal symptoms (vasomotor, urogenital and sexual) and (iii) psychological symptoms

(depression, anxiety and self-esteem). For psychological assessments, the severity of anxiety symptoms was measured using the Generalized Anxiety Disorder Seven-item (GAD-7) scale. The score cut-off point of five or above was considered to define the mean severity of anxiety symptoms. Psychological variables such as fear during intercourse, loss of libido, vaginal dryness, and mood swings and sleep disturbances were also assessed through direct questions with binary (yes/no) responses.

All patients underwent thorough clinical evaluation with relevant history, physical examination and necessary investigations. The anatomic locale and local extent of the fistula was determined using a variety of imaging investigations such as Ultrasound, Computed tomography (CT) with contrast or Magnetic resonance imaging (MRI) scans. Cystoscopy was also carried out to confirm the fistulous tract. The patients underwent surgery according to established standard protocols. The extent of surgery was dictated by the location and size of the fistula. Postoperative management was employed as per standard protocols.

Data analysis was performed using SPSS version 23.0 where descriptive statistics was applied to measure frequency and percentages from categorical variables while mean, standard deviations and range were measured from continuous numerical variables. The frequency was compared in pre and post repair periods using chi-square test while mean GAD was compared using paired sample t-test. A p-value of <0.05 was considered significant.

Results

The study included 50 women who went through successful fistula repair. The mean age was 44.0 ± 4.7 years. Majority of the participants were rural residents (84.0%, n= 42), had low educational attainment (74.0%, n= 37) i. e. education below matriculation and belonged to low socioeconomic status (94.0%, n=47). Table I

Majority of the patients (90%) developed the fistula secondary to TAH, whereas 8% patients presented with obstetric fistula. The remaining patients had developed fistula because of other miscellaneous causes.

Psychological and perimenopausal symptoms showed significant improvements post-repair (Table II). Fear during intercourse decreased from 86.0% (n= 43) to 42.0% (n=21) after repair ($p < 0.001$).

Table I: Demographic Characteristics of Participants. (n= 50)	
Variables	Numbers/ (%)
Age (years)	
Mean $\pm$ SD	44.0 $\pm$ 4.7
Residence	
Rural	42 (84.0%)
Urban	8 (16.0%)
Education	
Under matric	37 (74.0%)
Secondary or above	13 (26.0%)
Socioeconomic Status	
Low	47 (94.0%)
Middle/High	3 (6.0%)

Table II: Comparison of the psychological and perimenopausal symptoms before and after fistula repair. (n= 50)			
Symptoms	Before Repair n (%)	After Repair n (%)	p-value
Fear during intercourse	43 (86.0%)	21 (42.0%)	<0.001
Vasomotor symptoms	33 (66.0%)	21 (42.0%)	0.01
Urinary complaints	50 (100.0%)	2 (4.0%)	<0.001
Loss of libido	36 (72.0%)	16 (32.0%)	<0.001
Vaginal dryness/dyspareunia	31 (62.0%)	10 (20.0%)	<0.001
Mood swings	15 (30.0%)	10 (20.0%)	0.26
Forgetfulness	18 (36.0%)	15 (30.0%)	0.59
Sleep disorders	16 (32.0%)	10 (20.0%)	0.17

Similarly, vasomotor symptoms (e. g., hot flashes) reduced from 66.0% (n= 33) to 42.0% (n= 21) ($p = 0.01$) while urinary complaints resolved completely in 96.0% of cases (pre-repair: 100.0%, n= 50; post-repair: 4.0%, n=2; $p < 0.001$). Loss of libido improved from 72.0% (n= 36) to 32.0% (n= 16) ($p < 0.001$) and vaginal dryness/dyspareunia decreased from 62.0% (n=31) to 20.0% (n=10) ($p < 0.001$). However, there were also non-significant changes which were observed in mood swings (30.0% to 20.0%, $p = 0.26$), forgetfulness (36.0% to 30.0%, $p = 0.59$) and sleep disorders (32.0% to 20.0%, $p = 0.17$).

As per study objective the average GAD-7 was measured to check any effect of fistula repair on psychological symptoms. The mean Generalized Anxiety Disorder-7 (GAD-7) score

decreased significantly from 9.90 ± 5.2 pre-repair period to 3.35 ± 2.7 post-repair ($p < 0.001$) indicating a substantial reduction in anxiety severity.

Discussion

In our study we observed significant psychological and somatic improvements in perimenopausal women following successful fistula repair. This improvement was particularly observed with respect to anxiety, sexual dysfunction, and urinary symptoms. However, residual psychological challenges with respect to mood swings, forgetfulness, and sleep disturbances persisted in a small subset of participants, underscoring the intricate interplay between surgical recovery, hormonal transitions, and socio-structural vulnerabilities. These findings align with global evidence on the psychosocial burden of fistula. However, they also highlight the specific difficulties which older women face in the low-resource settings like ours (Pakistan). Things like delayed medical care, surgical menopause and being pushed to the margins of the society make recovery even harder for them. By comparing these findings with recent studies, highlighted the key gaps in comprehensive post-repair care and emphasized the need for integrated approaches that address both physiological and psychosocial recovery.^{10,11}

In the present study, the marked reduction in anxiety symptoms (GAD-7 scores declining from 9.90 to 3.35, $p < 0.001$) conforms to similar findings from published contemporary fistula cohorts. A study conducted in Nigeria in 2023 found that anxiety levels dropped by 68% within just six months after fistula repair. Similarly, another study conducted in Tanzania in 2022 reported a 55% decrease in depression mainly due to better social reintegration which helped with emotional healing and mental recovery. However, some women still experienced anxiety (mean score: 3.35) in this study, which suggests that factors beyond physical healing such as surgical menopause or financial difficulties may contribute to stress. This aligns with a meta-analysis of 2021 which found that menopause caused by surgery doubles the risk of long-term anxiety compared to the natural one. This is likely because of the sudden drop in estrogen disrupts the body's hormone balance making anxiety worse. Notably, 94% of participants of this

study belonged to low socioeconomic strata which is a critical factor associated with persistent post-repair mental health burdens in LMICs. In rural Pakistan, despite surgical success, women remain vulnerable to cyclical distress because of poverty and lack of access to postoperative counseling and hormonal therapies.^{12,16}

The resolution of urinary complaints which are reduced to 4% from 100% ($p < 0.001$) and vasomotor symptoms reduction to 42% from 66% ($p = 0.01$) reflects both anatomical correction as well as the psychosocial relief of continence restoration. A study conducted in Ethiopia in 2023 found that 88% of women reported an improved quality of life after successful fistula repair due to fewer urinary issues and better mobility. Despite successful fistula closure, 42% of the participants in this study still experienced vasomotor symptoms closure which suggests that menopause-related changes also play a role. After surgical menopause, hypoestrogenism which is common can exacerbate symptoms like hot flashes and night sweats and it may be mistaken for ongoing fistula issues unless properly assessed. A 2022 study conducted in India showed that 61% of women who had a hysterectomy and developed a fistula wrongly believed that their menopausal hot flashes were signs of a returning fistula which resulted in delaying appropriate hormone replacement therapy (HRT), which shows that there is a need to include menopause screening in fistula care especially for women who have had surgery.^{17,19}

In our study, sexual health was also improved with less fear of intercourse of 42% from 86% ($p < 0.001$) and pain during sex was reduced to 20% from 62% ($p < 0.001$). This aligns with a study conducted Kenya in 2023 which reported that pain during intercourse reduced by 58% due to sexual counseling after surgery. However, as many women continue to face these challenges so there is a need for better post-fistula sexual health care. Treatments like vaginal estrogen remain inaccessible to 90% of women in low- and middle-income countries (LMICs) due to high costs and social stigma. Such treatments can actually help reduce postmenopausal pain during sex. Similarly, the modest improvement in libido (72% to 32%) is much lower as compared to high-income cohorts where HRT restored sexual desire in 65% of women after surgical menopause. This gap is due to unequal

access to menopausal care as <5% of fistula programs in LMICs offer hormonal therapies.²⁰⁻²³

In our study, insignificant changes in mood swings ($p=0.26$) and sleep disturbances ($p=0.17$) suggest that surgery alone is not enough to address these issues. A study conducted in Pakistan linked the persistent post-repair mood disorders to unaddressed socioeconomic stressors such as financial dependency and lack of familial support. Similarly in menopausal women, the sleep problems are often linked to vasomotor symptoms and cortisol deregulation. This may require additional treatments like cognitive-behavioral therapy (CBT) or melatonin supplementation. In rural areas, community based peer support groups have helped improve mood in fistula survivors where mental health care is limited.²⁴⁻²⁶

In our study, 94% of the women in this study had low socioeconomic status and 84% were rural residence which is common among fistula patients where poverty and healthcare inaccessibility delay treatment. An international analysis identified that women living in rural areas waited >3 years for fistula repair which increased their mental health struggles due to the associated social stigma. There is a significant role of education as 74% of participants in this study had <10 years of schooling which is linked to lower health knowledge and also delays in seeking care. These findings show that there is a need of community programs to educate women about fistula. In Uganda the Fistula Ambassadors initiative has been able to reduce the treatment delays by 45% through peer-led outreach.²⁷⁻²⁸

The menopausal symptoms can mimic the symptoms of fistula. Thus, such patients require

medical treatment. There will still few symptoms of stress and anxiety which will persist among perimenopause aged women. Fistula clinicians should seek strategies to address psychological problems in their patients through targeted integrated mental health interventions. Some patients had persistent incontinence after surgical repair and associated increased psychological symptoms.

Strengths and limitations of the study: Our study has certain strengths as well as presents some limitations. The major strength of the study was the fact that it tried to document the psychological improvements among fistula patients in our hospital. The main limitation was the relatively small sample size owing to which detailed analyses of the cause and effect relationships could not be performed. Additionally, excluding women with pre-existing mental health conditions may have underestimated the actual prevalence of residual symptoms. Future well designed long term studies are recommended to improve upon these limitations. To separate the symptoms of menopause from fistula-related symptoms, future research should include hormone tests (like serum estradiol) and explore hybrid interventions combining HRT with counseling.

Conclusion

Most of the anxiety and physical symptoms were alleviated by fistula repair; however residual psychological challenges persisted among a small proportion of the patients. These were influenced by menopausal transitions and socioeconomic vulnerabilities. Therefore for ensuring complete recovery of women with fistula, an integrated post repair care is imperative. It should adequately address the mental health, hormonal deficiency, and the associated socioeconomic issues.

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