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Psychological Symptoms and Social Functioning Following Repair of Obstetric Fistula in a Low-Income Setting

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Abstract

Objectives—Obstetric fistula is a maternal injury that causes uncontrollable leaking of urine or stool, and most women who develop it live in poverty in low-income countries. Obstetric fistula is associated with high rates of stigma and psychological morbidity, but there is uncertainty about the impact of surgical treatment on psychological outcomes. The objective of this exploratory study was to examine changes in psychological symptoms following surgical fistula repair, discharge and reintegration home.

Methods—Women admitted for surgical repair of obstetric fistula were recruited from a Tanzanian hospital serving a rural catchment area. Psychological symptoms and social functioning were assessed prior to surgery. Approximately 3 months after discharge, a data collector visited the patients' homes to repeat psychosocial measures and assess self-reported incontinence. Baseline to follow-up differences were measured with paired *t* tests controlling for multiple comparisons. Associations between psychological outcomes and leaking were assessed with *t* tests and Pearson correlations.

Results—Participants (*N* = 28) had been living with fistula for an average of 11 years. Baseline psychological distress was high, and decreased significantly at follow-up. Participants who self-reported continued incontinence at follow-up endorsed significantly higher PTSD and depression symptoms than those who reported being cured, and severity of leaking was associated with psychological distress.

Conclusions—Fistula patients experience improvements in mental health at 3 months after discharge, but these improvements are curtailed when women experience residual leaking. Given the rate of stress incontinence following surgery, it is important to prepare fistula patients for the possibility of incomplete cure and help them develop appropriate coping strategies.

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Keywords

Obstetric fistula; Vesico-vaginal fistula (VVF); Mental health; Maternal health; Maternal morbidity; Tanzania

Introduction

While maternal mortality has served as the traditional key indicator of women's health, recent focus has shifted to include non-fatal detrimental birth outcomes, or maternal morbidities, which are a significant contributor to maternal health outcomes for women in low-income countries, especially those in southern and central Africa [1, 2]. Obstetric fistula is one such devastating maternal morbidity, which often results from poor access to maternal health care; it most commonly occurs in low-income countries [3, 4]. Obstetric fistula occurs when obstructed labor is not relieved by Caesarean section; due to pressure on the vaginal wall, delicate tissues die, creating a hole between the bladder or rectum and the vagina and resulting in uncontrollable leaking of urine (vesico-vaginal) or feces (recto-vaginal) from the vagina. In 90 % of obstetric fistula cases, stillbirth or early neonatal death occurs [5]. Numerous negative social and mental health consequences of fistula have been previously documented, including social isolation, stigma, divorce, depression, general psychological distress, negative religious coping and low quality of life [6–9].

Due to the profound impacts on the lives of women who are living with an obstetric fistula, free surgical repair of obstetric fistula has become a global priority. There are ongoing governmental and charitable efforts to identify and refer fistula patients for surgery [10]. Surgical repair has up to a 90 % success rate in closing the fistula [11, 12]. However, even when the fistula is closed, up to one-third of women continue to experience incontinence due to weakened or damaged pelvic floor musculature [13].

Research has suggested improvements in several psychosocial domains following surgery. In qualitative studies, fistula patients recount experiences of improved quality of life and overall levels of happiness after fistula repair [14–16]. In a study in Ethiopia, fistula patients reported a decrease in psychological distress from admission to 2 weeks post-surgery, prior to discharge [17]. However, no studies have thus far quantitatively examined psychological distress following patients' return to their homes, which may include unique stressors and social difficulties [15].

In spite of some evidence of an overall positive effect of surgery on mental health, there are also suggestions that some patients continue to experience distress after repair. Two weeks after repair surgery, patients with failed repairs had higher distress than those whose surgery successfully repaired the fistula [17], and qualitative research suggests that many women have persistent negative mood after they return home, especially if experiencing ongoing incontinence [14, 15, 18]. Given the preliminary nature of these results, further study into women's psychological well-being after surgical fistula repair is warranted.

The current study used a pre-post design to investigate change in psychological distress following fistula repair surgery and return home. The objective of this exploratory study was

to quantify the magnitude of change in psychological symptoms and social functioning from the time of admission on a fistula ward to 3 months after discharge.

Methods

Setting

The study was conducted in the Department of Obstetrics and Gynaecology at the Kilimanjaro Christian Medical Centre (KCMC-OG) in Moshi, Tanzania. KCMC-OG provides surgical repair of obstetric fistula free of charge and has a dedicated Fistula Ward where they treat approximately 50 fistula patients per year. Patients generally undergo reparative surgery within 2 weeks of admission and remain on the ward at least 2 weeks following surgery, during which time they had a urinary catheter and were clinically monitored.

Participants

Participants were drawn from a larger study investigating psychosocial sequelae of obstetric fistula [9]. Study inclusion criteria were 18 years of age or older, vesico-vaginal or recto-vaginal fistula from obstetric cause, and admission for surgical repair. Of the 54 patients enrolled into the parent study, a total of 28 fistula patients received three-month follow-up and are thus included in the current analysis. Follow-up was based upon residence within 1 day of travel (this ensured the study data collector could safely travel to and from the participant's home for the follow-up visit).

Procedure

Procedures for this study followed a single-group pre-post design. Baseline data were collected within 7 days of ward admission. Two months following discharge from KCMC-OG, each participant was contacted by the study data collector to schedule a follow-up visit approximately 3 months post-discharge. The data collector traveled to the home of each participant to administer the follow-up survey. Most participants (89 %) had a different interviewer at baseline and follow-up. Participants were compensated 3000 Tanzanian Shillings (approximately \$2) for participation in the baseline visit and 5000 Tanzanian Shillings (approximately \$3) for the follow-up home visit. All study procedures were approved by institutional review boards at both collaborating institutions, and informed consent was obtained prior to data collection. For further information on this study's ethical clearance and consent process, see Wilson et al. [9].

Measures

Study measures were translated and back-translated to ensure appropriate meaning. Since measures were administered orally, a visual representation of Likert scale response choices was used to assist in accurate reporting of symptoms. Psychological and social outcomes were measured identically at baseline and follow-up assessments.

Psychological Outcomes—Depression and PTSD were measured with the Center for Epidemiologic Studies Depression Scale (CES-D; $\alpha = .85$) and the PTSD Checklist-Civilian Version (PCL-C; $\alpha = .83$), respectively [19, 20]. Avoidant coping was measured with three

items from the Brief COPE [21] ($\alpha = .67$). The avoidant coping subscale was generated from a previous exploratory factor analysis of the Brief COPE in obstetric fistula inpatients, and includes items related to giving up and shutting out reality [22]. Somatic symptoms were measured with the Bradford Somatic Inventory (BSI; $\alpha = .94$) [23]. All psychological outcome measures had been previously validated or empirically used in East African, South African, or West African populations [24–27].

Social Outcomes—Perceived social support was measured with the Duke-UNC Functional Social Support Questionnaire (FSSQ; $\alpha = .89$) [28]. The FSSQ has previously been adapted to measure social support in Tanzanian women, and the adapted version has 10 items measured on a 5-point scale [29]. Obstetric fistula stigma was measured with an adapted version of the HIV/AIDS Stigma Instrument, which has previously been used in Tanzania [30] ($\alpha = .91$).

Perceived Surgical Outcome—At 3-month follow-up, *perceived cure* was assessed with a single yes/no item: “In your opinion, has your fistula been cured?” *Leaking severity* was measured with a 5-point scale where patients rated their perceived severity of current leaking (adapted from Browning & Menber [13]).

Analysis

Baseline to follow-up differences in psychological outcomes were measured with a series of paired *t* tests. In order to control for multiple comparisons, the Holm–Bonferroni step-down procedure was used to reduce family-wise error for this group of six tests [31].

Exploratory analyses examined how cure status affected psychological outcomes. The six outcomes were compared between participants who perceived themselves as cured versus not cured. Additionally, Pearson correlations were generated for the associations between all psychosocial outcome variables and self-reported severity of leaking. Since these analyses were exploratory, there was no adjustment to the *p* value criterion.

Results

The sample included 28 fistula patients with a mean age of 40.29 years ($SD = 15.00$). On average, patients had been living with obstetric fistula for over a decade (mean = 11.34 years; $SD = 11.27$). The majority of patients (64 %) were married and had at least one living child (69 %). The average number of children was 2.29 ($SD = 1.92$). Over a third of patients (36 %) had less than a primary school level of education. Twenty-two patients were Christian, and 5 were Muslim. Few patients reported currently working (14 %) or earning any income (18 %). The average time from discharge to follow-up was 4.04 months ($SD = 1.10$). At follow-up, 17 participants (61 %) self-reported that their fistula was cured. Of those who reported that their fistula was not cured ($n = 11$), 2 reported leaking only with exertion or coughing, 1 leaked only while walking, 5 leaked while walking and occasionally while sitting, and 2 leaked constantly.

Compared to baseline and controlling for multiple comparisons, all measures of psychosocial functioning showed improvement at follow-up (see Table 1). In exploratory

analyses, differences between those who reported being cured versus not cured were seen in depression, $t(26) = -2.14$, $p < .05$; and PTSD symptoms, $t(13) = -3.80$, $p < .01$. Participants who reported continued leaking endorsed significantly higher PTSD and depression symptoms than those who self-identified as being cured. Exploratory bivariate correlations yielded similar results to categorical t tests. Self-reported severity of leaking was positively associated with depression severity ($r = .41$), PTSD severity ($r = .80$), and somatic symptoms ($r = .53$). Avoidant coping was inversely correlated with self-reported severity of leaking ($r = -.42$), such that those with lower leaking endorsed higher levels of avoidant coping.

Discussion

The current study sought to examine changes in psychological symptoms following surgical repair for obstetric fistula and subsequent discharge and reintegration to the community. Results showed that at follow-up, fistula patients experienced significant improvements in their mental health, stigma, and social support, but that these improvements were curtailed when women were still experiencing incontinence. The results are consistent with prior studies that demonstrated overall improvements in mental health and quality of life following obstetric fistula repair [15–17, 32]. The findings also support evidence of continuing psychosocial concerns for fistula patients with post-surgery incontinence [15, 17]. The study adds to this literature by being the first to quantitatively examine psychological symptoms and social functioning several months after reintegration. However, the findings must be interpreted in light of the study's limitations: small sample size and probability of type II error; selective follow-up of patients living within a determined distance from the hospital; and self-reported measures of cure and leaking.

The study findings have significant implications for clinical practice and research in maternal health. Given that patient mental health and social functioning appear to improve following surgical fistula repair, it is essential for patients to be referred for surgery in a timely manner following obstructed labor. Given high rates of self-reported residual incontinence, it is also important to prepare fistula patients for the possibility of incomplete cure and help them develop appropriate coping strategies. Future research should examine the linear effect of leaking severity on psychological distress with more specificity. Fistula clinicians should seek to address psychosocial problems in their patients through targeted mental health interventions, such as one psychological intervention that has been developed for integration into fistula repair programs in Tanzania [33]. This intervention combines psychotherapy with health education, and additionally targets social support by facilitating dialogue with family members. Given the accumulated distress of living with obstetric fistula, integrating mental health treatment into fistula repair services does not only relieve immediate patient distress, but may additionally improve the long-term outcomes for this patient population.

Conclusions

In this exploratory study of women receiving surgical repair for obstetric fistula, results suggest that although psychological symptoms and social functioning improved following

surgical obstetric fistula repair, functioning was significantly worse at follow-up among patients who continued to leak urine or feces. These findings highlight the importance of obstetric fistula patients' psychosocial concerns, which can be addressed through surgical fistula repair as well as possibly through counseling interventions.

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Significance

What is already known on this subject?

Women with obstetric fistula present for surgical repair of this maternal morbidity with high levels of stigma and psychological symptoms. At discharge, they are considerably less likely to screen positive for mental health dysfunction.

What this study adds?

Obstetric fistula patients were interviewed at admission, and then again 3 months after discharge. Our findings suggest that gains in mental health persisted after returning to their home communities; however, associations between incontinence severity and psychological symptoms indicate the importance of residual incontinence symptoms after surgical repair.

Table 1
Psychological symptoms and social functioning, baseline to post-reintegration (*N* = 28)

Variable	Baseline <i>M</i> (<i>SD</i>)	Follow-up <i>M</i> (<i>SD</i>)	Paired <i>t</i>	<i>p</i>	Holm–Bonferroni adjusted α
Depression symptoms	27.7 (9.5)	4.8 (5.6)	11.69	<.001	.008
PTSD symptoms	47.3 (11.2)	22.4 (5.8)	9.88	<.001	.013
Somatic symptoms	17.3 (12.8)	3.3 (4.8)	6.19	<.001	.025
Avoidant coping	7.1 (2.7)	4.9 (1.8)	3.47	.002	.05
Social support	2.3 (0.9)	4.0 (0.5)	−10.60	<.001	.01
Stigma	20.7 (13.8)	1.2 (2.0)	7.80	<.001	.017