

CLINICAL ARTICLE

**Health-related quality of life among women in rural Bangladesh after surgical repair of obstetric fistula**

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**Synopsis:** A comprehensive approach to care is needed to improve the health-related quality of life of Bangladeshi women after surgical repair of obstetric fistula.

## **ABSTRACT**

*Objective:* To identify factors influencing health-related quality of life (QOL) among women in Bangladesh after successful surgical repair of obstetric fistula.

*Methods:* In 2012, a cross-sectional study was conducted of women who had undergone a successful surgical repair of an obstetric fistula at a hospital in northwest Bangladesh between June 2005, and May 2012. Sociodemographic, obstetric, and fistula-related information was collected by interview. Health-related QOL was assessed using the 36-item Short Form Health Survey (SF-36).

*Results:* A total of 113 women were included. Linear regression analysis showed that discrimination experiences negatively affected four of the eight scales of SF-36, as well as both the physical and mental component summaries ( $P < 0.05$  for all). Married status had a positive effect on four scales and the mental component summary ( $P < 0.05$  for all). Age inversely affected two scales and the physical component summary ( $P < 0.01$  for all). Internalized stigma negatively influenced two scales ( $P < 0.05$  for both). Not having living children and experiencing two or more previous stillbirths negatively influenced one scale ( $P < 0.05$  for both).

*Conclusion:* Several factors influence health-related QOL after obstetric fistula repair; a comprehensive approach is needed to address these issues.

## 1. Introduction

Obstetric fistula can occur as a serious complication of prolonged obstructed labor. The condition is characterized by the development of an abnormal connection between the vagina and the bladder or the rectum, or both, which in turn results in constant leakage of urine and/or stool. Approximately 2 million women worldwide have obstetric fistula [1]. Furthermore, estimates suggest that 71 000 women in Bangladesh have an unrepaired obstetric fistula, with a prevalence of 1.69 per 1000 women who have ever been married [2].

Obstetric fistula causes severe physical, social, and economic problems for affected women. The fetal outcome is usually stillbirth. In addition to obstetric fistula, women might also exhibit extensive complications that affect gynecologic, skeletal, neurological, and other systems owing to a long obstructed labor [3]. Women with obstetric fistula experience social and cultural distress, including divorce, social isolation, increasing poverty, and malnutrition [3]. Affected individuals often encounter stigmatization and discrimination [4,5]. Research shows a high risk of mental health dysfunction among women with obstetric fistula [6,7].

Surgical closure is considered to be the operational solution for the immediate physical symptoms of obstetric fistula, and most patients can be cured [8].

Nevertheless, many women still remain unaware of treatment possibilities [9]. Among those who have undergone surgical repair, health-related quality of life (QOL) is a key issue; however, most studies conducted to date have focused on QOL before rather than after surgery [4,5,7]. In the studies that have assess postsurgical QOL

[6,10–12], surgery has been shown to improve social life, physical activity, and psychological condition. However, some women who underwent obstetric fistula repair remained incontinent [10–12], and other health problems (e.g. gynaetresia, amenorrhea, and leg weakness) have also been reported [13]. Furthermore, some women still experienced social and economic difficulties, stigma, or emotional pain [10,14].

At present, little is known about health-related QOL among women in Bangladesh after surgical repair of obstetric fistula. The aim of the present study was to investigate factors influencing health-related QOL in this population.

## **2. Materials and methods**

A cross-sectional study was conducted in three rural districts of northwest Bangladesh (Dinajpur, Rangpur, and Nilphamari) between September 25, 2012, and November 1, 2012. Inclusion criteria for enrollment were successful fistula repair surgery (defined as no leakage on inspection and self-report at discharge from hospital) at the Lutheran Aid to Medicine in Bangladesh (LAMB) Hospital (Dinajpur, Bangladesh) between June 2005 and May 2012, fistula caused by prolonged and/or obstructed labor, and residence in one of the three named districts. Women who experienced physical or mental difficulty when completing the questionnaire were excluded. Women were also excluded if there was difficulty in locating the recorded address or they had relocated to outside the study area.

The study was approved by the research ethics committees of the LAMB Hospital,

the James P Grant School of Public Health of BRAC University (Dhaka, Bangladesh), and Nagasaki University (Nagasaki, Japan). Trained research assistants explained the present study objective, procedure, questions, risks, and benefits to each potential participant and obtained a signed consent form before data collection.

Potential participants were identified through records held at the LAMB Hospital, a private non-profit facility that has offered free treatment of obstetric fistula since 2005 for patients residing anywhere within the entire northwest region of Bangladesh. Address information was obtained from hospital records and provided by hospital staff. Five trained research assistants, who were resident in Dinajpur and had completed primary school as a minimum level of education, visited homes, and performed interviews using a structured questionnaire.

The questionnaire obtained information about demographics (age, education, and marital status), obstetric history and fistula (number of living children, previous stillbirths, duration of incontinence before surgical repair, and time since surgery), incontinence (irrespective of the amount of leakage), and experiences of discrimination and internalized stigma during the past 6 months. The questions posed to participants as part of this questionnaire were first prepared in English and then translated into Bengali. The questions on discrimination experiences and internalized stigma were created by review of previous studies [15,16]. Five questions with either “yes” or “no” as the possible answer assessed discrimination experiences resulting from obstetric fistula during the previous 6-month period.

Experiences assessed included: being avoided by others; being laughed at; awareness of being gossiped about; being verbally insulted, harassed, and/or threatened; and being physically harassed and/or threatened. To measure internalized stigma, participants were asked 11 questions (yes/no answers) about their feelings and willingness regarding certain experiences. These questions assessed: feelings of shame; low self-esteem; self-blame; unwillingness to go to health facilities; unwillingness to go outside; unwillingness to have more children; fear of being avoided by others; fear of being laughed at by others; fear of being gossiped about; fear of being verbally insulted, harassed, and/or threatened; and fear of being physically harassed and/or threatened (irrespective of whether or not these events had actually happened). All “yes” and “no” answers were given a score of 1 and 0, respectively. The cumulative scores were calculated individually, with a potential score of 0–5 for questions about discrimination experience and 0–11 for questions about internalized stigma. Scores of at least 1 indicated the presence of these factors.

Health-related QOL was assessed using the 36-item Short Form Health Survey (SF-36) [17], a generic instrument that is widely used in many countries. The survey comprises eight scales that measure physical function, role limitations owing to physical problems, body pain, general health, vitality, social function, role limitations owing to emotional problems, and mental health. The SF-36 score ranges from 0 (worst possible health state) to 100 (best possible health state). The eight scales can be expressed as two dimensions: the physical component summary (PCS) and the mental component summary (MCS). The Bengali version of SF-36 developed by

Ahmed et al. [18] was used in the present study. Internal consistency of the eight SF-36 scales was determined using a Cronbach  $\alpha$  value greater than 0.7. In Ahmed et al.'s study [18], only the vitality scale failed to exceed the required value ( $\alpha=0.59$ ); however, the vitality scale in the present study exceeded the 0.7 cutoff. Two other scales used in the present study—discrimination experience and internalized stigma—also displayed good internal consistency ( $\alpha=0.82$  and  $\alpha=0.95$ , respectively).

Medical charts were reviewed to obtain the cause of obstetric fistula, type of obstetric fistula (vesicovaginal and/or rectovaginal), date of surgery, and surgical outcome.

Data were analyzed using SPSS version 20.0 (IBM, Armonk, NY, USA). Descriptive statistics were used to examine the participants' demographic, obstetric-related, and fistula-related information. The Mann–Whitney *U* test or Spearman correlation were used to assess the relationship between demographic, obstetric-related, and fistula-related variables and the SF-36 scores. Stepwise linear regression was performed to identify factors independently associated with the eight scales and two summary scores of the SF-36.  $P<0.05$  was considered statistically significant.

### **3. Results**

Of the 390 potential participants identified, 165 met the inclusion criteria and 113 participated in the present study. Among the 113 participants, 78 (69.0%) underwent obstetric fistula surgery only once and 35 (31.0%) had undergone repeat surgery. The mean age of participants was 41.7 years (range 21–81). Most women had not completed primary school and most were married (Table 1).

Many of the women had at least one living child (Table 2). The mean number of previous stillbirths was 2.4 (range 0–11). More than half the participants had undergone surgery at least 4 years previously (Table 2). Most women had not experienced discrimination in the past 6 months; by contrast, more than three-quarters scored at least 1 on the questions related to internalized stigma (Table 2), with a median score of 3 (range 0–11). Women who had experienced discrimination were more likely to be divorced, separated, or widowed, or have no living children than were women who had not experienced such discrimination (data not shown).

Discrimination experience was the strongest factor affecting physical dimension, exerting a substantial negative effect on all four scales and PCS, although body pain was just above the level of significance (Table 3). Being currently married positively influenced the scores for physical function, body pain, and PCS; however, the score for general health did not reach significance (Table 3). Internalized stigma was inversely associated with physical function and general health, but did not affect the summary scores (Table 3). Other variables that were negatively related to one scale in the physical dimension included age, two or more previous stillbirths, duration of incontinence before surgery of more than 5 years, and the presence of incontinence (Table 3).

Discrimination experience was the strongest factor affecting the mental dimension, being significantly and negatively associated with all four scales of this dimension, as well as the MCS (Table 4). Being currently married was significantly and positively

associated with vitality, mental health, and MCS; however, the associations of this variable with social function and role limitations owing to emotional issues were not statistically significant (Table 4). Women with no living children had lower scores than those with living children for vitality, mental health, and MCS (Table 4). Internalized stigma was inversely correlated with vitality. No significant relationships were observed between health-related QOL and obstetric fistula type, time elapsed since repair surgery, or level of education (data not shown).

The stepwise linear regression for the SF-36 scores is presented in Table 5.

Discrimination experience was the most influential factor for health-related QOL, exerting significant negative effects on physical function, general health, role limitations (emotional), mental health, PCS, and MCS. Being currently married had a significant positive effect on physical function, vitality, social function, mental health, and MCS. This trend was similar to that identified in the univariate analyses (Tables 3 and 4). Age had a significant inverse effect on physical function, body pain, and PCS. Internalized stigma was negatively associated with general health and vitality, but no associations were detected with PCS and MCS. Other variables significantly correlated with one scale of the SF-36 were having living children (better mental health) and experiencing two or more previous stillbirths (worsened role limitations owing to physical problems).

#### **4. Discussion**

The present study investigated factors influencing health-related QOL among women living in a rural area of Bangladesh after they had undergone surgical repair of

obstetric fistula. Variables significantly associated with health-related QOL included age (PCS), current married status (MCS), and discrimination experience (both PCS and MCS). The observed relationship between increased age and poor physical QOL is consistent with a previous report [19].

Being divorced, separated, or widowed was associated with poor mental QOL. In the traditional patriarchal society of Bangladesh, women are expected to be wives and mothers, especially in rural areas. Marriage provides women with social and economic security, and individuals affected by obstetric fistula often lose these sources of security owing to difficulty in performing their expected roles [4,9]. Bhuiya et al. [20] reported that women who experience marital disruption in rural Bangladesh are extremely vulnerable both socially and economically. In addition, some research has shown a relationship between marital disruption and mental disorders [21]. Childlessness is also likely to worsen mental health for similar reasons. These findings indicate a potential need for psychosocial assistance in postoperative care programs, particularly for women without a husband and/or any living children. For example, the provision of counseling by peers and professionals, literacy services, and training to offer the skills necessary to earn an income could help women to improve their economic and psychosocial status [22]. Healthcare providers need to focus on identifying these factors, as well as assessing the psychosocial status of individuals, to provide optimum care both during hospitalization for repair surgery and/or at follow-up visits after hospital discharge.

In the present study, experiencing discrimination within the past 6 months was found

to be strongly associated with both physical and mental health. Discrimination exerts negative psychological and physiological effects on health [23]. Women with obstetric fistula are often discriminated against and isolated by their families and communities owing to issues surrounding their incontinence (e.g. unpleasant smell) [4]. The present study revealed that 15.0% of women reported experiencing discrimination, even after surgery. These women were more likely to be divorced, separated, or widowed, or have no living children than were women who had not experienced such discrimination. The role failure as a wife and mother, apart from the stigmatized illness itself, might perpetuate discrimination within the Bangladeshi context. Another possible reason for the perpetuation of discrimination could be that once a label is attached to a woman with an illness, that label marks her as “socially polluted” [14]; consequently, the label might be difficult to remove.

Internalized stigma was found to reduce both physical and mental health among participants in the present study, an observation consistent with previously published data. For example, one study stated that “long after corrective surgery, the women were still living with memories of fistula and made every effort to block out any linkage to fistula” [14]. Stillbirth was also found to markedly reduce women’s physical health [24].

The present study had several limitations. Sexual functioning—an important aspect of health-related QOL after surgical repair [14]—was not included in the SF-36 questionnaire [25]. Additionally, the current findings cannot be generalized to women outside northwestern Bangladesh; the sample size was insufficient to extend the

association. Furthermore, the scales for discrimination experiences and internalized stigma used in the present study were not validated. Further research is needed to explore how people perceive and treat women with obstetric fistula after corrective surgery. A qualitative approach might contribute to determining the effects of perpetuating discrimination in the sociocultural context of Bangladesh. Moreover, the present study did not investigate other services, such as counseling and social support, that could affect health-related QOL of women after surgery. Despite these limitations, the findings of the present study add to the data currently available on health-related QOL after obstetric fistula repair surgery.

In conclusion, the present study identified several factors that influenced health-related QOL among women who had undergone surgery for obstetric fistula. These factors must be addressed during postoperative care to improve measures of health-related QOL. A comprehensive approach is needed for fistula care in addition to standard surgical treatment.

### **Conflict of interest**

The authors have no conflicts of interest.

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**Table 1** Demographic characteristics (n=113).

Characteristic	No. (%)
Age, y	
≤24	6 (5.3)
25–29	14 (12.4)
30–39	31 (27.4)
40–49	33 (29.2)
≥50	29 (25.7)
Level of education	
None or did not complete primary school	90 (79.6)
Primary school	18 (15.9)
Secondary school or higher	5 (4.5)
Current marital status	
Married	84 (74.3)
Divorced, separated, or widowed	29 (25.7)

**Table 2** Obstetric and fistula-related characteristics (n=113).

Characteristic	No. (%)
No. of living children	
0	29 (25.7)
≥1	84 (74.3)
Previous stillbirths	
≤1	44 (38.9)
≥2	69 (61.1)
Fistula type	
VVF	105 (92.9)
RVF or RVF plus VVF	8 (7.1)
Duration of incontinence before surgical repair, y	
<5	23 (20.4)
≥5	90 (79.6)
Time since surgery, y	
<1	13 (11.5)
1–3	39 (34.5)
≥4	61 (54.0)
Current incontinence	
No	90 (79.6)
Yes	23 (20.4)
Discrimination score for experiences during the past 6 mo	
0	96 (85.0)
≥1	17 (15.0)
Internalized stigma score for the past 6 mo <sup>a</sup>	
0	26 (23.2)
≥1	86 (76.8)

Abbreviations: RVF, rectovaginal fistula; VVF, vesicovaginal fistula.

<sup>a</sup> Data available for 112 women.

**Table 3** Relationship between physical dimensions of health-related quality of life as measured by SF-36 and patient variables (n=113).<sup>a</sup>

Variable	Physical function		Role limitations (physical)		Body pain		General health		Physical component summary	
	Score	<i>P</i> value <sup>b</sup>	Score	<i>P</i> value <sup>b</sup>	Score	<i>P</i> value <sup>b</sup>	Score	<i>P</i> value <sup>b</sup>	Score	<i>P</i> value <sup>b</sup>
Age, y	-0.184 <sup>c</sup>	0.052	-0.085 <sup>c</sup>	0.371	-0.277 <sup>c</sup>	0.003	-0.049 <sup>c</sup>	0.603	-0.165 <sup>c</sup>	0.081
Current marital status										
Married	95 (50–100)	0.011	75 (0–100)	0.286	77.5 (0.0–100.0)	0.017	70 (0–100)	0.053	77.5 (24.4–98.8)	0.013
Divorced, separated, or widowed	85 (0–100)		50 (0–100)		57.5 (0.0–100.0)		62 (0–90)		66.9 (11.9–91.9)	
No. of living children										
0	90 (0–100)	0.856	75 (0–100)	0.554	67.5 (10.0–100.0)	0.639	65 (10–90)	0.204	74.4 (16.3–93.8)	0.556
≥1	95 (5–100)		50 (0–100)		77.5 (0.0–100.0)		70 (0–100)		75.7 (11.9–98.8)	
Previous stillbirths										
≤1	95 (5–100)	0.389	75 (0–100)	0.009	77.5 (0.0–100.0)	0.288	70 (0–100)	0.808	77.5 (11.9–97.5)	0.076
≥2	90 (0–100)		50 (0–100)		77.5 (0.0–100.0)		67 (0–100)		72.2 (23.8–98.8)	
Duration of incontinence before surgical repair, y										
<5	100 (25–100)	0.047	50 (0–100)	0.523	80.0 (0.0–100)	0.259	70 (0–100)	0.969	77.5 (11.9–97.5)	0.435
≥5	90 (0–100)		75 (0–100)		77.5 (0.0–100.0)		70 (0–100)		74.4 (16.3–98.8)	
Current incontinence										
No	95 (0–100)	0.355	75 (0–100)	0.391	73.8 (0.0–100.0)	0.759	70 (0–100)	0.047	75.6 (11.9–98.8)	0.373
Yes	85 (5–100)		50 (0–100)		80.0 (10.0–100.0)		57 (15–90)		70 (16.3–97.5)	
Discrimination score for experiences during the past 6 mo										
0	95 (0–100)	0.006	75 (0–100)	0.048	77.5 (0.0–100.0)	0.052	70 (0–100)	0.004	77.5 (24.4–98.8)	0.008

≥1	67 (5–100)		25 (0–100)		56.3 (0.0–100.0)		45 (0–90)		50.9 (11.9–96.3)	
Internalized stigma score for the past 6 mo										
0	100 (60–100)	0.009	50 (0–100)	0.585	80.0 (10.0–100.0)	0.510	75 (5–100)	0.001	79.1 (33.1–97.5)	0.151
≥1	90 (0–100)		75 (0–100)		73.7 (0.0–100)		65 (0–100)		73.5 (11.9–98.8)	

Abbreviation: SF-36, 36-item Short Form Health Survey.

<sup>a</sup> Values are given as median (range) unless indicated otherwise.

<sup>b</sup> Spearman rank correlation or Mann–Whitney *U* test.

<sup>c</sup> Spearman rank correlation coefficient.



score for the past 6 mo

0	75 (10–100)	0.010	100 (25–100)	0.888	33.3 (0.0–100.0)	0.486	70 (0–100)	0.205	79.8 (23.0–93.8)	0.542
≥1	55 (0–100)		100 (0–100)		50.0 (0.0–100.0)		64 (0–100)		71.1 (0.0–100.0)	

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Abbreviation: SF-36, 36-item Short Form Health Survey.

<sup>a</sup> Values are given as median (range) unless indicated otherwise.

<sup>b</sup> Spearman rank correlation or Mann–Whitney *U* test.

<sup>c</sup> Spearman rank correlation coefficient.

**Table 5** Stepwise linear regression model for SF-36 scores.<sup>a</sup>

Variable/ $R^2$	Physical function	Role limitations (physical)	Body pain	General health	Vitality	Social function	Role limitations (emotional)	Mental health	Physical component summary	Mental component summary
Age, y	-0.41 (0.17) <sup>b</sup>	—	-0.75 (0.22) <sup>c</sup>	—	—	—	—	—	-0.45 (0.16) <sup>c</sup>	—
Current marital status: divorced, separated, or widowed vs married	10.27 (4.67) <sup>d</sup>	—	—	—	14.14 (4.73) <sup>c</sup>	9.30 (4.35) <sup>d</sup>	—	18.20 (5.31) <sup>c</sup>	—	14.32 (4.68) <sup>c</sup>
No. of living children: 0 vs $\geq 1$	—	—	—	—	—	—	—	11.65 (5.39) <sup>d</sup>	—	—
Previous stillbirths: $\leq 1$ vs $\geq 2$	—	-18.52 (6.80) <sup>c</sup>	—	—	—	—	—	—	—	—
Discrimination experiences: 0 vs $\geq 1$	-16.20 (5.53) <sup>c</sup>	—	—	-13.83 (6.26) <sup>d</sup>	—	—	-23.96 (11.30) <sup>d</sup>	-22.26 (6.60) <sup>c</sup>	-16.00 (5.67) <sup>c</sup>	-15.16 (5.86) <sup>d</sup>
Internalized stigma: 0 vs $\geq 1$	—	—	—	-12.40 (5.19) <sup>d</sup>	-11.34 (4.91) <sup>d</sup>	—	—	—	—	—
$R^2$	0.218	0.063	0.093	0.111	0.125	0.040	0.039	0.303	0.133	0.159

Abbreviations: SF-36, 36-item Short Form Health Survey.

<sup>a</sup> Values given as coefficient (standard error) unless indicated otherwise.<sup>b</sup>  $P < 0.001$ .<sup>c</sup>  $P < 0.01$ .<sup>d</sup>  $P < 0.05$ .