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Original article

A comparison of quality of life before and after successful repair of genitourinary fistula: Is there improvement across all the domains of WHOQOL-BREF questionnaire?



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KEYWORDS

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Abstract

Objective: To compare preoperative quality of life (QoL) scores using World Health Organization WHOQOL-BREF quality of life assessment with postoperative QoL scores following successful repair of genitourinary fistula.

Patients and methods: The WHOQOL-BREF questionnaire was used as a tool to evaluate the quality of life before and after surgical repair. All patients, who underwent genitourinary fistula repair between January 2011 and December 2013 were included. Women with complaints of continuous leakage of urine per vagina following obstetric or gynaecological procedures were included in this study. Women with rectovaginal fistula, malignant fistula or radiation induced fistula were excluded from this study. Patients with comorbidities affecting QoL and those who did not give consent to participate were excluded. Patients whose questionnaire was incomplete were also excluded.

Results: Of the 106 women admitted for treatment of genitourinary fistula during the time period; 101 were included. The preoperative score of physical, psychological, social and environmental health domains were 15.04 ± 2.56 , 16.42 ± 4.4 , 51.75 ± 11.91 and 34.81 ± 6.89 respectively. The postoperative scores in physical, psychological, social and environmental health domains were 83.61 ± 5.09 , 75.79 ± 6.33 , 76.17 ± 8.53 and 33.88 ± 6.13 respectively. On comparison between the preoperative and postoperative QoL scores; there was significant improvement in physical, psychological and social health domains in the postoperative period ($p < 0.01$) but the environmental health domain scores remained static.

Abbreviations: VVF, vesicovaginal fistula; QoL, quality of life; WHOQOL, World Health Organization quality of life.

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Conclusion: There is marked improvement in the overall quality of life, especially the physical, psychological and social health domains of WHOQOL-BREF questionnaire after successful surgical repair of genitourinary fistula. The environmental health domain remained unchanged even after successful repair.

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Introduction

Genitourinary fistula, continues to be a major health problem in developing countries despite the improvement in health care delivery systems and advancement in surgical techniques. It is a devastating and distressing condition which profoundly hampers the quality of life.

The World Health Organization estimated that there are nearly 0.13 million new cases of obstetric fistula each year [1]. A large proportion of such cases occur in India even though the exact incidence of vesicovaginal fistula (VVF) in India is unknown. Despite this fact, the review of literature revealed few studies which focused on the quality of life (QoL) in patients with genitourinary fistula.

Alio et al. and Gharoro et al. studied the psychological impact of women with vesicovaginal fistula in Niger and Nigeria [2,3]. Umoyioho et al. evaluated and compared the different elements of health such as physical, mental, psychological and social health in preoperative and postoperative period of women with VVF [4].

To the best of our knowledge, the present study represents the single largest series of genitourinary fistula from the Indian subcontinent and is probably first such study from Asia to focus on the quality of life following VVF repair using WHOQOL-BREF questionnaire.

The aim of our study is to compare the preoperative QoL scores using WHOQOL-BREF questionnaire in these patients with that in the postoperative phase following successful repair of genitourinary fistula to assess whether there is any improvement in the domains.

Patients and methods

The present study was prospective, observational study conducted between January 2011 and December 2013 in the department of Urology, King George's Medical University, Lucknow, India.

Our institute is a tertiary care teaching centre situated in the capital city of one of the largest states in India in terms of land area and population. Our institute caters to patients from the entire state as well as those belonging to adjacent states and neighbouring countries like Nepal and Bangladesh. Our institute is government owned and provides low cost treatment to the poor patients; majority of finance is borne by the state government.

This study was approved by the institutional review board following ethical committee clearance. Informed consent was obtained from all the participants.

Women who presented with complaints of continuous leakage of urine per vagina following obstetric or gynaecological procedures were included in this study. Patients with recto-vaginal fistula, malignant fistula, radiation fistula and/or patients with

co-morbidities affecting QoL were excluded. Patients who did not give participation consent or whose questionnaire was incompletely filled were also excluded.

Demographic details were noted (Table A.1). Detailed history of the events leading to fistula formation was also taken (Table A.2). Duration of incontinence, parity, mode of delivery, prior operative procedure and associated co-morbidities were noted.

Ultrasonography of kidney, ureter and bladder (KUB) was performed; intravenous urogram (IVU) was also performed in selected patients to evaluate the upper urinary tracts and in those with suspicion of associated ureterovaginal fistula. Per vaginal and per speculum examination was performed to confirm urinary leakage, location of fistula and extent of fibrosis around fistula. Vaginal lumen and status of the vaginal mucosa was noted. A marked metallic sound/dilator was used for the assessment of vaginal length. Restoration of vaginal length between 8 and 11 cm after operation was considered adequate [5].

Cysto-urethroscopy was performed to locate the site and size of fistula and define its relationship with the ureteric orifice/bladder neck.

Surgical repair was performed after three months of fistula formation. The reason for delayed surgical repair was due to the fact that the patients were treated and referred to us from other peripheral hospitals.

The WHOQOL-BREF questionnaire had been used as a tool to evaluate the quality of life. Questionnaire was translated and validated in Hindi language by the linguistic department of a reputed University. All the women were instructed to fill the questionnaire before surgical intervention and 3 months following successful fistula repair. The participants were allowed to fill the questionnaire with assistance from a nurse who was blinded to this study.

Instrument for assessment

The WHOQOL-BREF questionnaire consists of a subset of 26 items derived from WHOQOL Bref-100 and consists of 2 parts. The first part evaluates the patient's subjective assessment of her quality of life and satisfaction with her health while the second part evaluates four domains – physical, psychological, social and environmental health. The mean score in each domain was obtained by computing the mean of transformed scores converted to a 0–100 scale for each domain. A mean score of <40 in each domain denotes poor, 41–60 indicates moderate and >60 indicates good quality of life.

Statistical analysis

The results were presented in mean \pm standard deviation (SD) and percentages. The unpaired *t*-test was used to compare two

independent means and one-way analysis of variance (ANOVA) was used to compare more than two independent means. Paired *t*-test was used to compare the variables in preoperative and postoperative period. The *p*-value <0.05 was considered statistically significant. All the analyses were performed using SPSS 16.0 version (Chicago, Inc., USA).

Results

The distribution of women according to age, parity and their level of literacy are shown in Table A.1. The most common presenting complaint was continuous leakage of urine per vagina (100%). The mean duration of incontinence was 25.16 ± 5.76 months. The type of genitourinary fistula was trigonal VVF in 35 (49.3%) patients and supratrigonal VVF in 27(38%) patients. Less common type of fistulas were urethrovaginal fistula in 5 (7%) patients and ureterovaginal in 3 (4.2%) patients respectively. There were 24 (23.76%) patients who had multiple events leading to fistula formation. One patient was found to have coexistent supratrigonal and ureterovaginal fistula. One patient had history of vaginal application of herbs for the treatment of infertility by quacks. This patient had trigonal fistula with moderate anterior vaginal wall scarring (Table A.2).

The mean size of the fistula was 1.5 ± 0.3 cm. The fistulas were repaired by transabdominal or transvaginal route; laparoscopic method was used in few patients (Table A.4). Standard surgical techniques were used depending upon the indications and the surgeon's preference [6–11]. Overall success rate of genitourinary fistula repair irrespective of type of repair was 93.4% with 7 (6.6%) failures. The median follow up is 26 months (range 12–48 months). Mean preoperative and postoperative quality of life scores in all domains of WHOQOL-BREF questionnaire and the average percentage change from preoperative to postoperative WHOQOL-BREF parameters is depicted in Table A.3 There was significant improvement in domains of overall quality of life (preoperative score 8.25 ± 2.67 , post operative score 93.25 ± 7.20 , *p*-value 0.0001), physical health (preoperative score 15.04 ± 2.56 , post operative score 83.61 ± 5.09 , *p*-value 0.0001), psychological health (preoperative score 16.42 ± 4.49 , post operative score 75.79 ± 6.33 , *p*-value 0.0001) and social health (preoperative score 51.75 ± 11.91 , post operative score 76.17 ± 8.53 , *p*-value 0.0001). However, the domain of environmental health remained unchanged (preoperative score 34.81 ± 6.89 , post operative score 33.88 ± 6.13 , *p*-value 0.08).

Age of the patient, parity, duration of incontinence and type of surgical repair did not affect the WHOQOL-BREF parameters as shown in Table A.4.

Discussion

The reason for the high incidence of genitourinary fistula in India are illiteracy, unawareness of health related services, fear of hospital confinement, lack of adequate transport services and ignorance of female by their spouse, relatives and community. Despite extensive review of literature we could only find few papers which focused on quality of life in women with genitourinary fistula [2–5]. With our accumulated experience after evaluating large number of women who presented at our centre from various parts of India and the

subcontinent, we have managed to establish optimal treatment methods of genitourinary fistula. We aim to assess the quality of life domains in these females and compare the domain pre and post operatively by self assessment questionnaire.

Following surgical repair of genitourinary fistula there is subjective improvement in quality of life; whether all the domains described in WHOQOL-BREF questionnaire improve, remains questionable. Our results show that the domain of environmental health remained unchanged even after successful surgical repair.

In Indian scenario the QoL improvement either by subjective or objective assessment have not been studied earlier. To the best of our knowledge, this is the first study to report on the quality of life of women with genitourinary fistula before and after successful surgical repair from Indian subcontinent using WHOQOL-BREF questionnaire [12].

The present study focuses on women with genitourinary fistula to achieve insight into what they felt following obstetric fistula and how they felt after successful repair. Majority of the females who present to our institute with genitourinary fistula were illiterate and from low income group (78.2%). It has also been noticed that formal education of women affects their health seeking behaviour in a positive manner [13]. In our present study, 23.76% patients had combination of more than one antecedent events leading to fistula formation; this reflects poorly on the current maternal and obstetric health facilities (Table A.2).

In the present study, there is significant improvement in physical health domain of WHOQOL-BREF amongst women following successful repair (*p*=0.0001). This observation is explained by the fact that relief from persistent urinary leakage and perineal wetness brings restoration of self-esteem, improves sleep pattern and increases work capacity.

Umoyioho et al. also support this perception in their study. They noted significant improvement in the psychological and social health scores in the postoperative period. A significant proportion of women were satisfied with their mental health after successful fistula repair; this confirms the occurrence of psychological trauma with unrepaired VVF leading to loss of self-esteem, anxiety and depression. The perception of sexual satisfaction depends on the interactions among emotional well-being, intimacy with partner, quality of life and physical health [13]. The persistent leakage of urine, pervasive odour, perineal excoriation disrupts the women's intimate sexual relationship and in extreme cases leads to marital disharmony and divorce [14]. Umoyioho et al., also noted that majority of women (63%) suffered from social deprivation particularly in relation to their sexual relationship [4].

Alio et al. conducted qualitative study on 21 women and explored the psychosocial impact of VVF on these women. They also reported many psychological consequences like depression, feeling of shame and loneliness. They observed social consequences like isolation; rejection from husband which led to divorce and/or rejection by the society in certain cases [2].

Similar to the above mentioned studies; we also observed statistically significant improvement in the scores between preoperative and postoperative social health domain on WHOQOL-BREF questionnaire (*p*=0.0001).

In our study, we did not observe significant difference between pre-operative and post operative environmental health score ($p = 0.08$). The responses to questions regarding the financial status of family, their needs and their ability to carry out their daily household tasks remained unchanged even after successful repair [15]. We believe that free treatment given at our hospital as well as the financial support extended by family members reduces the financial burden on these patients and their families. The financial environment that they return to following their surgery is unchanged. Hence, the financial status of the patient remains unaffected following surgery. Probably, due to this reason the environmental health domain remains unaffected.

The present study also focused on age, parity, duration of incontinence and type of surgical repair. None of these factors was found to affect the overall quality of life, physical, psychological, social and environmental health domains of WHOQOL-BREF questionnaire (Table A.4).

Conclusion

There is marked improvement in the overall quality of life, especially the physical, psychological and social health domains of WHOQOL-BREF questionnaire after successful repair of genitourinary fistula. The environmental health domain remained unchanged following successful repair due to negligible impact on financial status following surgery at our hospital.

Conflict of interest

None.

Financial disclosure

None.

Consent from patients

Taken.

Appendix A.

See Tables A.1–A.4.

Table A.1 Distribution of the patients according to age, parity and level of literacy.

Age (yrs)	20–30	31–40	>40
	31 (30.7%)	57 (56.4%)	13 (12.8%)
Parity	0	1–2	≥3
	11 (10.8%)	58 (57.4%)	32 (31.6%)
Education	Uneducated	Primary	Secondary or higher
	79 (78.2%)	9 (8.9%)	13 (12.8%)

Table A.2 Distribution of the women according to antecedent event causing genitourinary fistula.

Events	No of patients (n = 101)	%
Obstructive labour	41	40.6
Following LSCS for obstructive labour	23	22.7
Hysterectomy for dysfunctional uterine bleeding	10	9.9
Hysterectomy for obstructed labour with ruptured uterus	13	12.8
Hysterectomy for fibroid/Carcinoma cervix	7	6.9
Hysterectomy for pyometra	3	2.9
Hysterectomy for prolapse	2	1.98
Following endoscopic removal of bladder stone	1	0.9
Transvaginal herb application	1	0.9

Table A.3 Comparison of WHOQOL-BREF parameters with average percent change from preoperative to postoperative period.

WHOQOL-BREF parameters	Preoperative	Postoperative	p-value	Average percent change
Overall quality of life	8.25 ± 2.67	93.25 ± 7.20	0.0001*	85.0
Physical	15.04 ± 2.56	83.61 ± 5.09	0.0001*	68.6
Psychosocial	16.42 ± 4.49	75.79 ± 6.33	0.0001*	59.4
Social	51.75 ± 11.91	76.17 ± 8.53	0.0001*	24.4
Environment	34.81 ± 6.89	33.88 ± 6.13	0.08	−0.9

* $p < 0.05$ is significant.

Table A.4 Comparison of pre and post operative quality of life.

Parameters	According to age (yrs)					
	Preoperative score			Post operative score		
	<30	≥30	p-Value	<30	≥30	p-Value
Overall QoL	8.38 ± 2.70	8.1 ± 2.7	0.9	92.7 ± 6.9	93.6 ± 7.4	0.7
Physical	16.4 ± 1.95	14.4 ± 2.8	0.2	84.4 ± 5.4	83.3 ± 4.9	0.4
Psychological	17.9 ± 4.50	15.7 ± 4.5	0.4	77.6 ± 5.3	74.8 ± 6.7	0.2
Social	51.4 ± 12.4	51.9 ± 11.8	0.9	77.4 ± 6.5	75.6 ± 9.5	0.5
Environmental	39.7 ± 7.9	39.61 ± 6.9	0.2	37.6 ± 6.5	37.9 ± 6.7	0.8

Table A.4 (Continued)

Parameters	According to parity							
	Preoperative score				Post operative score			
	None	1–2	≥3	<i>p</i> -Value	None	1–2	≥3	<i>p</i> -Value
Overall QoL	3.6 ± 1.2	3.13 ± 0.9	7.2 ± 2.3	0.1	94.6 ± 7.7	91.6 ± 7.6	93.2 ± 8.2	0.9
Physical	13.2 ± 2.3	14.3 ± 2.3	16.4 ± 2.9	0.7	85.7 ± 4.5	83.9 ± 5.9	83.2 ± 5.0	0.8
Psychological	11.9 ± 3.0	19.5 ± 5.6	14.6 ± 3.9	0.4	75.6 ± 5.5	77.1 ± 6.9	75.0 ± 5.7	0.9
Social	57.3 ± 12.5	45.2 ± 13.8	49.7 ± 11.4	0.3	75.0 ± 3.6	81.2 ± 6.7	75.0 ± 9.9	0.4
Environmental	30.9 ± 6.3	38.5 ± 6.9	34.2 ± 7.1	0.5	31.7 ± 5.9	35.7 ± 5.3	34.4 ± 6.9	0.8

Parameters	According to duration of incontinence (months)						
	Preoperative score			Post operative score			
	<12	≥12	<i>p</i> -Value	<12	≥12	<i>p</i> -Value	<i>p</i> -Value
Overall QoL	8.2 ± 2.6	8.1 ± 2.8	0.98	92.9 ± 7.4	94.0 ± 7.0	0.6	
Physical	14.9 ± 2.5	15.2 ± 2.7	0.85	83.7 ± 5.3	83.3 ± 4.8	0.8	
Psychological	17.7 ± 4.5	14.2 ± 4.3	0.22	75.2 ± 5.7	76.8 ± 7.3	0.4	
Social	50.2 ± 12.2	54.3 ± 11.3	0.34	76.3 ± 7.9	76.0 ± 9.5	0.9	
Environmental	34.8 ± 7.0	34.8 ± 6.8	0.99	34.4 ± 6.3	32.9 ± 5.9	0.6	

Parameters	According to type of surgical repair							
	Preoperative score				Post operative score			
	TV	TAB	LP	<i>p</i> -Value	TV	TAB	LP	<i>p</i> -Value
Overall QoL	7.1 ± 2.7	9.4 ± 3.0	7.5 ± 2.4	0.8	94.6 ± 7.7	91.5 ± 7.9	94.5 ± 6.5	0.4
Physical	15.3 ± 2.2	14.4 ± 2.6	15.5 ± 2.6	0.8	83.7 ± 3.5	82.6 ± 5.4	84.4 ± 5.1	0.6
Psychological	17.2 ± 5.7	16.9 ± 4.3	15.8 ± 4.	0.9	78.6 ± 4.2	73.2 ± 5.7	77.3 ± 6.9	0.1
Social	50.0 ± 13.2	49.1 ± 11.1	54.2 ± 12.4	0.5	80.9 ± 8.8	74.4 ± 9.7	76.7 ± 7.3	0.4
Environmental	36.6 ± 6.7	32.6 ± 7.1	36.2 ± 6.8	0.4	33.9 ± 3.5	32.7 ± 6.9	34.8 ± 5.8	0.7

TV: transvaginal; TAB: transabdominal; LP: laparoscopic.

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