Original Article

Urogenital Fistula: Still a Major Morbidity in Developing Countries

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Abstract

Objective: To revisit the trend of the frequency of reported cases of fistula in Pakistan.

Methodology: This quantitative retrospective study was conducted at the MCH Fistula Center, Pakistan Institute of Medical Sciences, Islamabad, Pakistan from February 2021 to September 2021. After getting ethical approval, the record rooms were sought from the centers dealing with fistula patients, including all the available data for the twelve-year window period (2006–2018). Data was retrospectively collected by researchers using a predesigned study proforma and analyzed through SPSS software 25.0.

Results: Overall, 2621 reported cases of fistulae were included in this study, making an average yearly frequency of 218 cases/year. The mean age of patients suffering from fistula was 34.62 + 10.2 years. Ninety-six percent of patients were illiterate and 94.7 % belonged to the poor class. Forty-two percent of cases were from Punjab followed by Sindh (33.5 %). Forty-six percent of the cases had a duration history of having fistula of last 6 months, followed by 23% of cases coming with duration between 6-12 months. Most common reported cases were vulvovaginal fistulae (78.4%).

Conclusion: Despite being in 21st century with improved health care facilities, there are still reported cases of fistulae which add to the poor quality of life to these women. Much more worrisome are the unreported cases who never reach health care facilities get their issues addressed. There has been a decreasing trend in reported cases of fistulae over the years. The government of Pakistan needs to take measures to strengthen existing public health facilities as well as ensure that there is equitable access to health care for fistulae diagnosis and management across Pakistan.

Key Words: Fistula formation, vesicovaginal,

Cite this article as: Naeem S, Aslam S, Hina H, Luqman S, Afghan S, Masoom K. Urogenital Fistula: Still a Major Morbidity in Developing Countries. J Soc Obstet Gynaecol Pak. 2022; 12(3):188-192.

Introduction

Urogenital fistulae are devastating morbidities that affect approximately 50,000 to 100,000 women each year, making it a global problem that is especially prevalent in developing African and Asian countries.[1] Obstetrical fistula is the most common type of fistula, accounting for approximately 75% of all cases, followed by iatrogenic fistula.[2] Ironically, where the Hippocratic oath states that a doctor should "not do any harm", iatrogenic fistulae are in fact the sequel to the intervention done by incompetent 'quacks.[3] The majority of uro-genital fistulas are vesicovaginal fistulas (VVF) and prolonged obstructed labour is one of the most challenging and worst complications of childbirth and obstetric care.[4] Literature evidence suggests a major surge in the incidence of urogenital fistula following hysterectomy has been reported and it remains a major obstetric complication in developing countries like Pakistan.[5] Poor operative technique and operative bias by the healthcare professionals serves to be the common etiological factors for this problem. [6]

The aftermath of fistulae often leaves the women with a poor quality of life and poor health hygiene. This can result in significant psychological and physical impairment, lack of libido, and other, the effects of which may in turn have a negative impact on the emotional wellbeing of the patient, leading to social isolation,

Authorship Contribution: [1,2,3]Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work, [5]Final approval of the version to be published, [4]Drafting the work or revising it critically for important intellectual content, participated in the acquisition and data analysis, [6]Active participation in active methodology.

Funding Source: none
Conflict of Interest: none

Received: April 04, 2022
Accepted: Aug 26, 2022

stigmatization, and negative impact.[7] According to the World Health Organization (WHO), an estimated 5 million women suffering from maternal morbidity are due to these obstetric fistulas.[6]

Urogenital fistulas are repaired by various surgical interventions such as transvaginal approach, laparoscopic repair, or by transurethral endoscopic. This abnormal low-lying defect is closed with or without tissue interposition. The transvaginal approach has been proven to be the least invasive and fruitful surgical procedure with positive outcomes.[8] In developing countries with low to middle income resources, 95% of the total number of fistulas are of obstetric cause and the incidence of fistula has been reported as high as 3-4 cases per 1000 vaginal deliveries. Much of the above data on the impact of fistula on female quality of life comes from developing countries, particularly those with low socioeconomic status. Research in the field of fistula is lacking in rigour and follow-up, necessitating the need to measure trends rather than present descriptive data from a cross-sectional analysis.[5]

In the absence of a good population-based epidemiological study, most information on fistula has come from a large series of fistula centers from dedicated centers in large teaching hospitals. However, there may also be a need to have a collective wisdom to gather such data to make a consensus to explore and see where the struggles against fistula are moving in developing countries.

Methodology

This was a quantitative retrospective study done in the maternal and child health (MCH) department of the Pakistan Institute of Medical Sciences (PIMS), Islamabad, from February 2021 to September 2021. After getting ethical approval from the ethical committee of the institution, record rooms were sought from the centers dealing with fistula patients, including all the available data for the last fifteen years(2006- 2021). Data was retrospectively collected by researchers using a predesigned study proforma. The identity of each patient was kept confidential. Regular consistency checks ensured that any missing data was tracked by the researchers and entered the data. Baseline characteristics on age, parity, duration of symptoms, identified type of fistula were collected. Year wise record of the patient was also taken to be analyzed for the study.

All obtained data was organized and analyzed through SPSS version 25.0. Continuous data, such as age, were represented by means + standard deviation, while categorical data, such as parity and the types of fistulae identified, were represented by frequency and proportions.

Results

A total of 2621 patients were identified to have fistula from the extracted data. Study outcome declared that mostly respondents (36.2%) had 30-39 years of age with mean value (33.00±2.81). However, 26.7 percent had 20-29 years of age with mean value (24.60±2.77) and around one-fourth (24.9%) had 40- 49 years age with mean value (42.48±2.56). However, 2.9 percent respondents had less than 20 years of age and remaining 6.8%, 2.1% and 0.3 percent respondents had 50-59, 60-69 and 70 and above years of age, respectively. Mean age of the respondents was 34.62 years with standard 10.06 years. (Table I)

Regarding the catchment area of the patient, it was found that a considerable part (42.0%) of the respondents belonged to Punjab province, 33.5 percent belonged to Sindh and around 18% belonged to Baluchistan. However, remaining 2.8, 1.9, 1.0, 0.5 and 0.5 belonged to KPK, AJK, Islamabad, Northern Area, and Afghanistan respectively (Table II).

Regarding the socio-economic status of the patients, was found that a huge majority (94.7%) of the respondents belonged to poor group, while only 4.5 percent belonged to middle group and remaining 0.8 percent of the respondents had good socio-economic status (Table II). Also, the findings of the above table declared that a big part (96.3%) of the respondents were illiterate and only 3.7 percent were literate.

Out of 2621 patients, percentage 46. 1% of the respondents had up to 6 months duration of fistula, while 23.0 percent had >6-12 months duration. However, 7.7, 6.8 and 16.3 percent respondents had >12-18, >18-36

Table I:Distribution of the patients according to their age

Age group	**N (%)**	**Mean±SD**
Less than 20	77(2.9)	15.96±3.96
20-29	701(26.7)	24.60±2.77
30-39	950(36.2)	33.00±2.81
40-49	653(24.9)	42.48±2.65
50-59	179(6.8)	52.09±2.76
60-69	54(2.1)	61.37±2.13
70 and above	7(.3)	75.29±4.71
Total	2621(100.0)	34.62±10.06

and above 36 months duration of fistula, respectively. (Table III)

Table III also shows that a 78.4% of the study population had vesicovaginal fistula, while 10.5 percent had rectovaginal fistula and around 8% of them had Uterovesical fistula. However, remaining 1.6, 1.0 and 0.7 percent of the patients had Perineal Tears (4th degree), urethro-vaginal fistula and Perineal Tears (3rd degree) type of fistula, respectively.

Table IV represents yearly frequency with province/state wise break up for the reported cases of fistulae. As seen from the table maximum number of cases were reported to be 288 in 2008 followed by 265 in 2015 and 258 in 2014.The least numbers of cases were seen in the years 2018 and 2017 (57 and 85 respectively).

Figure 1 shows trend in yearly frequency of overall cases of fistula reported in the study centers. Again there were increase in cases from 2008-2009 and 2014-2016 time period however, the graph shows an overall downward trend of reported cases of fistula patients with time.

Table II: Demographic status of the patients.

	Frequency	%
Province/State		
Punjab	1101	42.0
Sindh	879	33.5
Baluchistan	469	17.9
KPK	73	2.8
AJK	49	1.9
Islamabad	25	1.0
Northern Area	12	.5
Afghanistan	13	.5
Socio-economic status		
Poor	2482	94.7
Middle	119	4.5
Good	20	.8
Literacy status		
Illiterate	2524	96.3
Literate	97	3.7
Total	2621	100.0

Table III: Details of presentation of fistulae among the study population.

	Frequency	%
Duration of fistula (months)		
Up to 6 months	1209	46.1
>6-12 Months	604	23.0
>12-18 Months	202	7.7
>18-36 Months	179	6.8
More than 36 months	427	16.3
Type of fistula		
Vesicovaginal- VVF	2054	78.4
Rectovaginal- RVF	274	10.5
Uterovesical- UVF	207	7.9
Urethra vaginal-UTVF	27	1.0
Perineal Tears (4th degree)	41	1.6
Perineal Tears (3rd degree)	18	.7

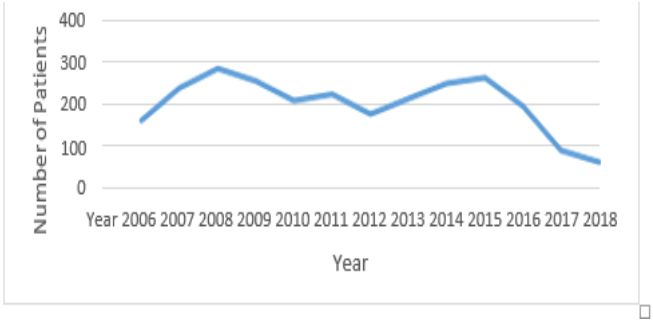

Figure 2. Trend in yearly frequency of reported fistulae.

Discussion

In developing countries, the majority of cases of urogenital fistulas results from the obstetrical etiology. According to various studies, the high prevalence of urogenital fistulas in the past were not of iatrogenic origin as compared to present times. An Indian study reports

Table IV: Yearly frequency of fistulae presenting among studied population.

Cases per Provinces/ Year	**Punjab**	**Sindh**	**Baluchistan**	**KPK**	**AJK**	**Islamabad/ Northern Area**	**Afghanistan/ Iran**	**Total Year Wise**
2006	76	51	17	7	4	3	2	***160***
2007	112	91	21	5	5	5	1	***240***
2008	129	126	17	7	5	3	1	***288***
2009	127	96	25	5	3	1	1	***258***
2010	96	71	31	3	3	4	1	***209***
2011	104	51	56	8	2	3	1	***225***
2012	67	43	53	4	5	2	1	***175***
2013	89	66	46	5	4	2	2	***214***
2014	79	77	78	7	4	5	1	***251***
2015	71	119	61	7	4	2	1	***265***
2016	97	43	38	5	5	5	1	***194***
2017	37	21	17	7	3	0	0	***85***
2018	17	24	9	3	2	2	0	***57***
Total	***1101***	***879***	***469***	***73***	***49***	***37***	***13***	***2621***

the incidence of 65% of genitourinary fistulas to be of iatrogenic origin.[10] According to a similar study conducted in Pakistan, 53.6% of fistulas are caused by obstructed labour and 39% by iatrogenic etiology.[11]

The current study aims to describe and analyze the trends in reported cases of fistula reported at the mentioned study centers of Pakistan. Pakistan is a developing country. According to the most recent report on the nationwide maternal mortality survey in Pakistan, MMR is 186 per 100,000 live births. The report also indicates a considerably increased incidence of maternal deaths in the rural areas of Pakistan. MMR for urban areas of Pakistan is 158 while, on the other hand MMR for rural areas is 199 which shows a difference of 41 deaths per 100,000 live births.[12] Multiple factors can be constituents of maternal morbidity, out of which the fistulae related symptoms reports is one of the long-term sequelae of bad obstetrical management in about 23 percent of the cases. Apart from obstetrical causes, fistulae is reported to be caused at the time of gynecological surgeries (fairly common in developed countries) or locally advanced malignancies.[13]

Our study reported 2621 cases of fistulae in this study, making an average yearly frequency of 218 cases/year. In contrast, previous studies have documented a variable number of participants ranging from 200 to 1000,[2,14–16] making large number of participants a strength in our study. The yearly reported case of 218 is something that should be highlighted and discussed.

The overall reported average yearly frequency of fistulae patients in our case were 218 cases per year on average. Previous studies advocate a consensus of 58.5% of fistulas of iatrogenic origin and ischemic fistulas of 41.5%. A study conducted in 2020 at Pakistan Institute of Medical Sciences, Islamabad, indicates a rising trend with an increase from 43.5% in 2006-08 to 71.4% in 2017-18. This massive overlooked rising peak has been emerging to be a tough challenge for the health sector of developing countries.[17]

The World Health Organization reports 130,000 new cases of obstetric fistula each year, calculated from an assumption that fistula is likely to occur in 2 percent of the 6.5 million cases of obstructed labour that occur in developing countries.[18] On the other hand, a recent study by UNFPA and the Pakistan National Forum on Women's Health estimates 3,500 cases of obstetric fistula occur in Pakistan every year and the Pakistan National Forum on Women's Health estimates 3,500 cases of obstetric fistula occur in Pakistan every year.[19] However, it must be kept in mind that these reported cases may just be the "tip of the iceberg" and need to be carefully handled and empathically managed.

The mean age of patients suffering from fistula was 34.62 $\pm$ 10.2 years. This points out again to the fact that most of the patients are from the reproductive age group and can be an indirect pointer towards an obstetrical cause of the fistula although this study was limited by delineating the etiology of fistulae due to lack of time.[11] Ninety-six percent of patients were illiterate and 94.7 % belonged to the poor class. Socioeconomic background has proven to be a strong influence on the causative factors for fistula formation. Poor and illiterate patients who have no or delayed access to vaginal birth in health care centres and are delivered at home are more likely to have poor obstetrical outcomes, including fistula formation.[3] Poor obstetric care and services in developing countries like Pakistan, Bangladesh, India, and Afghanistan are considered the main culprits in disease progression. A recent study conducted in Sindh, Pakistan suggests the main cause of fistula formation in 95% of the patients was prolonged labor and more than 65% of the cases are due to delayed arrival or reporting to the health care facility.[20] Forty-six percent of the cases had a history of having fistula for the last 6 months, followed by 23% of cases coming with a duration of between 6-12 months. The most common reported cases were vulvovaginal fistulae (78.4%) in our study.

Moreover, once the symptoms of fistula are developed, they may also be treated by local ‘quacks’ for fistula, thereby further worsening the morbidity of the disease.[13] This cycle needs to be broken with government initiative with more public awareness programs for fistula prevention.

On the positive side, the comparison of the overall frequencies has shown a downward trend in the reported cases of fistulae. This may be because of two reasons; possible better health care provision with obstetrical care to the local population or fewer patients reporting to these fistula centers,[21] however a larger scale study is warranted in this regard.

Future directions and Limitations

Further studies are warranted to study about the trend of reported and unreported fistulae cases in different areas of Pakistan to attain a more comprehensive insight. Further studies warrant into probing the factors leading to fistulae formation and recurrences in developing countries and devising strategies on how it can be counteracted which was

not done due to lack of time and due to the nature of the study design.

Conclusion

Despite being in the 21st century with improved health care facilities, there are still reported cases of fistulae which add to the poor quality of life for these women. Much more worrisome are the unreported cases who never reach health care facilities to get their issues addressed. There has been a decreasing trend in reported cases of fistulae over the years. The government of Pakistan needs to take measures to strengthen existing public health facilities as well as ensure that there is equitable access to health care for fistulae diagnosis and management across Pakistan.

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