

Need Assessment on Preventive Measures Among Women with Obstetric Fistula Attending Comprehensive Community Based Rehabilitation Hospital, Dar Es Salaam, Tanzania

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ABSTRACT

Background: Obstetric fistula is a 'hole' that forms between the bladder and the vagina or Between the rectum and the vagina during prolonged and obstructed labor. Vesico-vaginal fistula is a very serious and disabling injury among women. Obstetric vesico-vaginal fistula remains a significant causes of female urinary incontinence worldwide. The problem of fistula has been a low-priority issue on international agendas, in part because its prevalence is perceived to be fairly low. The condition is however preventable and surgical treatments are available, but a vast majority of women suffering from fistula do not have access to care due to different reasons. These include lack of money for transport from home to the facility, and lack of knowledge on treatment options. This study aims at determining risk factors and birth outcome among women with fistula in Tanzania. This study aimed at determining the risk factors and birth outcome among women with fistula, at Comprehensive Community Based Rehabilitation hospital in Dar es Salaam, Tanzania.

Methodology: A cross sectional study was conducted, to determine risk factors for obstetric fistula. Semi-structured questionnaire was used to collect data. Data was collected from CCBRT from June 2016 to January 2017. The SPSS version 23 software for window was used to analyze data. Frequencies were used to show the distribution of respondents in relation to variables of interest. Cross tabulations were used to relate variables and Chi-square tests were used to find out the significant differences between variables, and P value of less than 0.05 was considered statically significant.

Result: The study revealed several risk factors among study participants, the commonest being Big baby 214(69.9%), having an outcome of about 70.9% on Stillbirth. The low level of knowledge, only 11.8% of respondents had satisfactory knowledge on risk factors and 15% had satisfactory knowledge on prevention of obstetric fistula. This was associated with level of education ($X^2=8.27= p \text{ value} = 0.04$).

Conclusion: This study found out that the commonest risk factors for obstetric fistula being big baby and prolonged labor, and majority of patients with fistula had poor knowledge on risk factors as well as preventive measures for obstetric fistula.

INTRODUCTION AND BACKGROUND

Obstetric fistula is a 'hole' (or communication") that forms between the bladder and the vagina known as a vesico-vaginal fistula, or (VVF) or between the rectum and the vagina (a rectovaginal fistula, or RVF) following

prolonged and obstructed labor. The constant pressure of the fetal skull against the soft tissue around the vagina and the bladder and/or rectum cuts off the blood supply to the tissues, causing them to disintegrate (ischemic necrosis). A 'hole' is then left, and urine and/or feces leak continuously and uncontrollably from the vagina'!

Vesico-vaginal fistula is a very serious and disabling injury among women. Patients with this type of fistula remain all the time with dribbling of urine through abnormal communication between the urinary bladder and vagina. This type of complication has been recognized since ancient times.⁽²⁾

Obstetric vesico-vaginal fistula remains a significant cause of female urinary incontinence worldwide. Approximately 2 million women suffer from this condition, perhaps many more, in Africa. Very few centres are treating these patients, and although success rate in the closure of the fistula is high, up to 92%, this does not necessarily equate to a cure. A significant proportion of women remain with urinary incontinence.⁽³⁾

Until recently, the problem of fistula has been a low-priority issue on international agendas, in part because its prevalence is perceived to be fairly low. However, the true prevalence of fistula is not known—both because it affects primarily the world's most powerless and because those who suffer from the condition are stigmatized into silence.⁽³⁾ Recent efforts, such as the United Nations Population Fund (UNFPA) Campaign to End Fistula and the United States Agency for International Development (USAID) program for the prevention and treatment of vaginal fistula, have brought international attention to the issue. Still, it was noted at UNFPA's 2003 South Asia Conference for the Prevention and Treatment of Obstetric Fistula that a lack of representative data on the problem of fistula was inhibiting progress in all key aspects of the Campaign. Obstetric fistula is an age-old problem, but unfortunately as we enter the 21st century it is still very common in the developing world, whereas in the developed world it is a condition long forgotten by most physicians. There is a growing interest in this debilitating condition, but as yet there has been very little research into the management and the complications of treatment.⁽⁵⁾ Approximately 2 million girls and women are estimated to be living with fistula worldwide, yet fistula remains one of the most neglected issues in women's health and rights. It devastates lives, causing women, in most cases, to lose their babies and to live with the humiliation of leaking urine and/or feces constantly.

Neglected Prolonged obstructed labour remains the commonest etiological factor in VVF in Sub-Saharan Africa and South Asia.⁽⁶⁾ Obstetric fistulae occur most commonly as a result of prolonged and obstructed childbirth. Obstructed labour occurs as a result of cephalo-pelvi disproportion and malpresentation and leads to a fistula when these complications are not recognized and managed by healthcare professionals in the appropriate setting.⁽⁷⁾ In Pakistan, obstructed labour is still the major cause of vesico-vaginal fistula as 80-90% of the cases reported occur due to obstetric

complication. In developing countries prolonged labour remains the main reported cause of OF.⁽⁸⁾

Maternal healthcare services including family planning, basic and comprehensive emergency; obstetric care, and affordable treatment of fistula are either difficult to access, too expensive or in many rural areas are non-existent. Many healthcare workers do not have the skills to manage fistulae effectively and the equipment necessary for the procedure is lacking or unreliable.

Women cannot afford to pay for surgery and therefore there is little incentive for African physicians to become skilled in fistula repair as it is not a lucrative market. The problem of VVF in Northern Nigeria has been found to be associated with young girls who are denied skilled maternity care despite their high-risk pregnancies.⁽²⁸⁾

The study done in Tanzania, found out that commonly risk factors for fistula was lack of hospital-based delivery facility, poor economic status and long distance to the hospital. Nearly all of the women who made a move during childbirth eventually got adequate care at the hospital level and not at a (dispensary or health center) peripheral-level facility. The majority of the women incurred some costs for transport to a facility, and a minority reported having to pay some type of fee for the delivery. The second most commonly reported delay was "delay in transportation." This factor is critical because reasons why women who need skilled assistance at delivery do not get the care they need; poor women in rural areas are likely to be disproportionately affected by the factor.⁽¹⁵⁾

The availability and access to EmOC is important in ensuring prompt treatment of pregnancy and labour related complications, and is key in both improving maternal outcome, and attaining Millennium Development Goals (MDGs).⁽¹⁰⁾ To facilitate access to quality primary and reproductive health care for all Tanzanians, as stipulated in its national health policy, the Government of Tanzania is trying to provide comprehensive health services to pregnant women in peripheral rural areas, where majority of people live. The health system is organized in a referral pyramid, starting from dispensaries at the bottom and rural health centers that provide Basic Emergency Obstetric Care (BEmOC) and treatment of minor conditions.⁽²⁷⁾ At the district level, there are district hospitals at first referral level where necessary drugs, equipment and skilled staff are available to provide comprehensive emergency obstetric care (CEmOC) that include basic emergency care (parenteral- antibiotics, oxytocic drugs and anticonvulsants for pregnancy induced hypertension) and also performing caesarean section and blood transfusion.

There are also regional hospitals in each region, with the highest levels being national and specialized hospitals. Obstetric care is provided in all levels of health facilities depending on the obstetric care need of a woman (i.e. BEmOC or CEmOC).⁽²⁷⁾ In 2008 about 72% of Tanzanian population lived near the health facility (within 5 km), and it increased significantly to 93% by 2014 (12;13). Birth assisted by skilled health personnel is considered to be the most critical intervention for ensuring safety of the baby and of the expectant mothers. It accelerates the timely delivery of emergency obstetric and new-born care when life-threatening complications arise. Skilled attendance denotes not only presence of skilled midwives with right attitude to perform midwifery work, but also the enabling environment.⁽¹³⁾ Women in this study did not describe these qualities of midwives. They reported experiences of being not cared well by midwives when assisting them during delivery. For women these unethical and unprofessional acts were responsible for their fistula occurrences.^(12, 13)

Access to skilled obstetric care has been identified as a major condition to lower maternal morbidity and mortality. It is commonly expected that in the health facility women would receive adequate obstetric care from skilled providers. When these expectations are unmet, women usually lose trust with health care system and resort to seek alternative from traditional birth attendants. They may bypass a nearby health facility and go to one that is far away if it is perceived to provide better services, which contribute to delays. Practices of health care providers are often more important for patient satisfaction than the hospital physical environment. Women experiences of negligence, nepotism, delays and mistreatment by nurses contribute to poor access of skilled obstetric care in the health facility. Thus, denying women rights to obstetric care.⁽¹⁵⁾

Midwives are on the front line of health care in East, Central, and Southern Africa, especially in the care of women and infants. They play an essential role in reducing both maternal and infant mortality and morbidity. In the case of obstetric fistula, they can take critical steps to prevent the condition, and they are essential team members in the treatment of fistula and the subsequent reintegration of women into their communities. This nursing curriculum for obstetric fistula represents a unique and strong collaboration between the East, Central and Southern Africa Health Community (ECSA-HC) and the Fistula Care project at Engender Health, a global health organization. A wide range of regional and global experts, including physicians, nursing educators and administrators, midwives, and nurses, contributed to the development of this document. They identified essential nursing and

midwifery skills, drafted material, reviewed manuscripts, suggested sources and illustrations, and informed the curriculum with their experience caring for women living with obstetric fistula.⁽¹⁴⁾

This comprehensive curriculum addresses several critical areas: preventive care, surgical treatment and postoperative recovery, information, education, family and community involvement, counseling, and data collection and use. It also presents learning activities and competency-based skills checklists that help nurses and midwives develop real-world skills for the clinical environment.⁽¹⁴⁾

Health facilities should be distributed in both rural and urban areas and complete equipped with essential equipment, medical supplies and personnel. Health system, referral services, transportation and communication need be improved upon. VVF may be a thing of the past especially if there is trained man power that can manage each labour with the partograph and offer emergency obstetric care when applicable. This also can improve all other health indices in the population and not VVF alone'. Nevertheless, in the rural areas of developing countries where paucity of infrastructure creates uncomfortable environment for specialist health workers, incentives can be added to basic emoluments to ensure their presence and continued function in the rural centers.⁽²⁹⁾

Obstetric Fistula is a physically and socially disabling obstetric complication that affects about 3000 women in Tanzania, ' About 90% lose their babies and 1000 receive treatment.⁽¹⁵⁾

In most cases obstetric fistula is a result of obstructed labour occurring when the presenting part of the fetus cannot pass through the birth canal. The physical effects of fistula are urinary or fecal incontinence, which can lead to other medical complications such as infection, genital ulceration, pain and secondary infertility. Obstetric Fistula has psychosocial implications from the accompanying smell that surrounds these women as a result of their urinary or faecal incontinence.^(15,14)

OBJECTIVES

Broad Objective

To determine risk factors, knowledge on preventive measures and birth outcome among women with fistula at Comprehensive Community Based Rehabilitation Hospital in Tanzania (CCBRT).

Specific Objectives

The Specific Objectives were:

- To determine socio demographic characteristics of the women with Obstetric fistula
- To determine risk factors for fistula among women with obstetric fistula

- To determine birth outcome among women with obstetric fistula
- To determine knowledge on preventive measures for fistula among women with fistula
- To determine the factors associated with knowledge on preventive measures for fistula among women with fistula

METHODOLOGY

Study Design

This was a prospective hospital based descriptive cross-sectional study.

Description of the Study Area

This study was conducted at Comprehensive Community Based Rehabilitation in Tanzania (CCBRT) Hospital the second biggest provider of obstetric fistula (VVF) services in Tanzania and by 2012 it was capable to provide services to about 650 women (22). This hospital started in 1994 and it is locally registered as a nongovernmental organization with the aim of empowering people with disabilities and their families, improve their quality of life, and ensure access to medical and rehabilitative treatment and one of its missions is to prevent maternal and neonatal mortality and morbidity. It has a bed capacity of 72, and currently it provides an average of 50 surgeries per month. It receives patients from all over the country. It is also a FIGO accredited center for training fistula surgeons.

Study Population

Women from all parts of the country (Tanzania), attended at CCBRT Hospital with the problem of vesico-vaginal fistula from June 2016 to January 2017.

Study Sample and Sample Size Calculation

Sample Size Calculation

A minimum sample size from the CCBRT Hospital will be obtained using sample size estimation formula of single proportional.

$N = Z^2 P Q / e^2$ where

Z = percentage of standard normal distribution corresponding to 95% CI = 1.96

N = minimum desired sample size

E = error = 0.05

P = Proportion of infant died from women with fistula in Tanzania is 90% (22)

Q = 1 - p = 10%

$n = 1.96 \times 1.96 \times (0.9) \times (1 - 0.9)$

0.0025

n = 288 women

With inclusive of 10% non-response then the minimum sample size required was 306 women.

Inclusion Criteria

All patients who attended CCBRT with vesico-vaginal fistula

Exclusion Criteria

All women with incontinency not caused by vesico-vaginal obstetric fistula were excluded. Women with non-obstetric fistula were also excluded.

Sampling Procedure

A convenient sampling technique was used to obtain participants. Using admission register and doctors notes that confirmed the diagnosis, all women who met criteria were requested to participate in the study. A total of 306 women were obtained and participated in the study.

Data Collection Method and Procedures

Data Collection Instrument

A semi-structured questionnaire with both closed and open-ended questions was used to collect information on demographic, socio-economic status, knowledge on risk factors and preventive measures for fistula and availability of preventive measure of the disease. The questionnaire was translated into Swahili language, because the participants (audiences) well understood the swahili language.

Data were collected from June, 2016 to January, 2017.

Recruitment of the research assistants

Two research assistants were recruited and trained to assist in data collection. Training aimed at making the interviewers understand the aim of the research and be conversant with the questions and how to ask them.

Pre-test of the questionnaire

Pre-testing was conducted before the actual data collection. It was done to 20 patients at CCBRT. Errors that arose during pretesting of the questionnaire were rectified.

Data Presentation and Analysis

Completed options in all questions in the study questionnaires were coded by numbers and entered in a computer using SPSS version 23. Coding procedures was done to allow computer entries of responses for open questions and combinations of multiple responses to respective questions in the questionnaire. Data cleaning and analysis was then done using SPSS version 23 for windows. Pearson Chi square statistics test was used to compare group differences for categorical variables. In all statistical tests a p-value of less than

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0.05 was considered significant. Tables were used presentation' of the results. To quantify knowledge, the modified Bloom's cut off points were used. (Good knowledge, >75% of the score, satisfactory, 50 - 75% and poor knowledge, <50%). All responses carried equal weight of value 1. The total score of the responses were obtained to each participant. Knowledge was classified into NB: According to Original Bloom's Cut Off Points 80-100% is Good Knowledge, 60- 79% - Moderate Knowledge and <60% is Poor Knowledge

Variables

Dependent Variables

Birth outcome, knowledge on preventive measure for fistula

Independent Variables

Age, marital status, Parity of a mother, ANC attendance, family planning use, place of delivery and Education level and employment status of both mother and husband.

ETHICAL CONSIDERATIONS

Ethical clearance was obtained from HKMU Research ethical committee. Permission to conduct study at

RESULTS

A total of 306 women were recruited in this study, the mean age of all respondents was 35#14

Table 1. Distribution of respondents by socio-demographic characteristics (N=306)

Characteristics	Frequency	Percentage%
Age	21	6.9
10-29	102	33.3
20-29	83	27.1
30-39	44	14.4
40-49	56	18.3
Marital status		
Single	74	42
Married	174	56.9
Separated	29	9.5
Divorced	25	8.2
Widowed	4	1.3
Education		
Name	131	42.8
Primary	153	50.0
Secondary	20	6.5
Tertiary	2	6.7
Occupation		
Farmer	245	80.1
Self employed	9	2.9
Housewife	32	10.5
Employed	8	2.6
Others		
Residency		
Rural		
Urban		

Majority of the respondents lies in the age (20-29), 33.3%. More than half were married 56.9% about half had primary level of education 50% and the majority

CCBRT was also sought from Local authorities (Ilala and Kinondoni District). Informed consent from, Participants were also asked for Willingness to participate in the study that the information generated from the study is for academic purpose and also the findings from this study are anticipated to contribute to the current knowledge on obstetric fistula. Benefits and risks of participating were well explained to the participants. Refuse to participate was accepted without penalty; no risky was anticipated from this study. Also, they were assured that their responses will be kept confidential. Confidentiality was insured by assigning participant number and not their names.

LIMITATIONS OF STUDY

This study was done to women who are in hospital but also who have suffered vesico-vaginal fistula, it is therefore possible that, the knowledge level might be influenced by them being patients but also being in hospital and already have interacted among themselves or staff and gain some knowledge.

were farmers 80.1% and lives in rural area 83.0%. Table 1 above.

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Table 2. Distribution of respondents on Risk factors for obstetric fistula among respondents

Characteristics	Frequency	Percentage%
Age at first pregnancy		
10-15	42	13.7
16-19	111	36.2
20-25	107	34.9
26-30	33	10.8
>30	13	4.2
Economic status		
Poor	201	65.6
Not poor	105	34.4
Delivered by skilled staff		
Yes	129	42.2
No	177	57.8
Referral		
Early	273	89.21
Late	33	10.78
Weight of the baby at birth		
Big baby (4 kg and above)	214	69.93
Less than 4kg	92	30.07
ANC Attendance		
Poor attendance (less than two visit)	157	51.3
Three of four visit	149	48.7
Timing for the first pregnancy		
Early (below 18 years)	42	13.7
Not Early (Above 18 years)	222	86.3
Labor progress		
Prolonged labor	179	58.4
No prolonged labor	127	41.6
Assistance during delivery		
Unskilled delivery	99	32.4
Skilled delivery	207	67.4
Parity		
Para 1	109	35.6
Multipara (2 to 4)	181	59.1
Grand multipara (5 and above)	16	5.2
Place of delivery		
Hospital	50	16.3
Dispensary	100	32.6
Home	150	49.0
Made of Delivery		
Spontaneous vaginal delivery	175	57.1
Assisted delivery	70	22.8
Caesarean section (autogenic cause VVF)	61	19.8
Instrumental delivery (Vacuum delivery)	0	0

Regarding distribution of the risk factors more than two third delivering big babies (69.9%), economically poor (65.7%), more than half had prolonged labor (58.1%) and poor antenatal clinic attendance (51.3). Table 2 above.

Birth Outcome Among Women with Obstetric Fistula at CCBRT

Table 3. Distribution of infants born to respondents by condition at birth (alive/dead)

Condition of the July	Frequency	Percentage
Alive	89	29.1
Dead	217	70.9
Total	306	70.9

The results show that nearly three quarters (71%) of all babies born to women with fistula were still-birth as shown in Table 3 above.

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Table 4. Level of knowledge on Risk factors and preventive measures

Level of Knowledge	Score	Number	Percentage
Knowledge on Risk factors			
Good knowledge ledge>75%		0	0
Satisfactory knowledge	50-75%	36	11.8
Poor knowledge <50		270	88.2
Knowledge on preventive measure			
Good knowledge >75		0	0
Satisfactory knowledge	50-75%	46	15
Poor knowledge<50		260	85
Total		360	100

Only 1.8% of the respondents had satisfactory knowledge on risk factor, and only 15% had satisfactory knowledge on preventive measures (**Table 4**)

Table 5. Factory associated with level of knowledge on risk factors

Characteristics	Satisfactory	Poor knowledge	Chi square	P value
Education level				
None	20	111	8.2749	0.04
Primary	11	142		
Secondary	5	15		
Tertiary	0	2		
Residency				
Rural	30	224	0.205	0.65
Urban	6	47		

Level of education influence knowledge on risk factors. Table 5 above

Table 6. Factors associated with knowledge on preventive measure

Characteristics	Satisfactory	Poor knowledge	Total	Chi square	P value
Education level					
None	20	107	127	0.205	0.65
Primary	25	128	153		
Secondary	0	20	20		
Tertiary	1	1	2		
Residency					
Rural	40	224	264	0.205	0.65
Urban	6	47	53		

Level of education and place of residency influence knowledge on preventive measure but the difference is not statistically significant.

DISCUSSION

This study revealed several risk factors but mostly being prolonged labor, poverty, big baby and poor antenatal clinic attendance. The majority of women in this study has given birth to baby with big birth weight, this may contribute to obstructed labour, which is the commonest cause of obstetric fistula.^(12,16,20) This is the same finding from the study done by Hassan, the same finding might be contributed by the facts that in this both study majority of women came from the rural area and therefore there are not accessed to comprehensive health services where caesarian section can be done also may be due to the delays in intervention which increases a compression of mother's soft pelvic organs. e.g. bladder and rectum.⁽²¹⁾

On birth outcome about 70.6% had still birth these is slight lower compared to the study done by Raassen ,85%) e2)-the difference might be due to the fact that in Tanzania there is a lot of sensitization done by the government and NGO, On the importance of giving birth to hospital, in the previous study shows that majority of women gave birth without an assistance from skilled health worker. The study found out that majority of women had poor knowledge on the risk factors as well as preventive measures for obstetric fistula. This is much lower compared to similar studies done in Zambia and Burkinafaso, that showed a level of knowledge to be 55% and 36% respectively,^(30,31) the former being the risk factors knowledge and the latter being the knowledge on prevention, the difference might be due to the fact that in this study majority of study participants came from rural area therefore awareness on obstetric fistula is low^(23,25,26)

The level of knowledge were influenced by level of education, this might be due to the fact That people who

went to school become more aware on various issue concerning their heal therefore there more likely to be aware on obstetric fistula. ⁽²¹⁾ The results of this study suggest that knowledge on risk factors and preventive measure is low among women with fistula.

CONCLUSION

Obstetric fistula is associated with several risk factors and they appear to be preventable. This disease is associated with prolonged labour, big baby, poverty and poor clinic attendance.

ABBREVIATIONS

BemOC	-	Basic Emergency Obstetric Care
CemOC	-	Comprehensive Emergency Obstetric Care
CCBRT	-	Comprehensive Community Based Rehabilitation hospital in Tanzania
EmOC	-	Emergency Obstetric Care
ECSCA-HC	-	East Central and Southern Africa Health Community
MDGs	-	Millennium Development Goals
MMR	-	Maternal Mortality Ratio
OBGY	-	Obstetric and Gynecology
OF	-	Obstetric Fistula
RVF – Recto	-	Vaginal Fistula
VVF-Vessico	-	Vaginal Fistula
UNFPA	-	United Nations Population Fund
USAID	-	United States Agency for International Development
WHO	-	World Health Organization

DECLARATIONS

Ethic Approval and Consents to Participate

It was obtained from the clients and ethical clearance was granted by HKMU

Consent for Publication

Ethical clearance for publication was obtained from Hubert Kairuki Memorial University

AVAILABILITY OF DATA AND MATERIALS

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study

COMPETING INTERESTS

Authors declare that no competing interest

FUNDING

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AUTHORS CONTRIBUTIONS

LMN, PJM and MC participated in study designing, literature search, and data analysis. PJM participated in manuscript writing, editing, and manuscript submission

EQUAL CONTRIBUTION

LMN and PJM were first Co-authors

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