Review Paper

SOCIO-ECONOMIC FACTORS ASSOCIATED WITH PATIENTS WITH VESICOVAGINAL FISTULA IN MACHAKOS COUNTY, KENYA

Abstract

Background: Vesico-Vaginal Fistula (VVF) is traumatic fistulous tract extending between the bladder and the vagina that allows the continuous involuntary discharge of urine into vaginal vault. The patient has urine wetting and soaking their innerwear, before dripping down her legs. The accompanying smell is awful and most communities consider such women as outcasts.

Methods: This study was conducted among 34 patients with Vesico-vaginal fistula purposively selected from 10 sub counties of Machakos County, Kenya. To supplement the results from these patients, their case notes, 14 of the patients' husbands, 25 women group leaders from the County, 48 Community Health Workers (CHWs), and 177 healthcare workers in the County were interviewed.

Results: Their ages ranged between 15 and 35 years with mean and median years of 22.3 years. A majority of the patients (62%, n=21) were below 23 years, (29%, n=10) had no formal education and (82%, n=28) came from households earning less than sh6, 000 a month. All of them developed the complication as they delivered at home with either the assistance of a CHW or a relative. By the time the study was carried out, they had sought after treatment at a Referral Hospital and were awaiting appointments for surgical repair. Out of the 14 with husbands, all had monogamous marriages with (71.4%, n=10) of the husbands reporting that they tolerated their wives' conditions but could not sleep together due to the stench. The women group leaders reported that these patients were shy to face the society and tended to lead a secluded life of their own away from the glare of society. The healthcare workers attributed the VVF condition mainly from obstructed labor due to Malpresentation of the baby at delivery, Cephalopelvic disproportion (CPD), maternal distress or Cervical dystocia.

Conclusion: Vesico- vaginal fistula is a problem that occurs mainly amongst the young and poor mothers with prolonged obstructed labor which is not supervised by skilled medical attendants. Its prevalence can be reduced through enlightenment of the public and ensuring that mothers deliver their babies under safe hands of skilled birth attendants.

Keywords: Vesico-vaginal fistula, Machakos County, Socio-Economic Factors, Obstructed labor.

Introduction

Vesicovaginal fistula (VVF) is an anomalous fistulous tract extending between the bladder and the vagina that allows the continuous involuntary discharge of urine into vaginal vault[1]. It is one of several vaginal fistulae such as Ureterovaginal, Rectovaginal, Colovaginal and Enterovaginal fistulae. The patient has uncontrolled urine leak that leads to wetting and soaking of their innerwear causing unpleasant odor, before dripping down her legs. This condition has significant

effects on the patient's self esteem and leads to social stigma and often times neglect from family and community. She may become depressed as a result of loss of husband's affection, divorce or childlessness especially if it results from still births. Most communities considering such women as outcasts and may blame them of witchcraft and other wrongdoing. Prolonged obstructed labor which is associated with pressure necrosis, edema and tissue sloughing is responsible for 97% of VVF cases in developing countries. In developed world, 90% of VVF cases are estimated to be secondary to accidents during gynecological surgeries such as pelvic operations and in hysterectomies where the bladder or urethra may be injured. Cultural factors that may lead to obstruction of the reproductive system include FGM, making of incisions on the vaginal wall and application of substances usually with an aim of returning it to nulliparous state. Other less frequent causes of VVF include pelvic infections and trauma from insertion of foreign objects. Confounders would be anemia, malnutrition, unhygienic environment, and drugs that may compromise healing process. High prevalence of early marriage and subsequent childbearing, low socioeconomic status of women, lack of skilled birth attendance and lack of access to emergency obstetric services are associated risk factors.

MATERIALS AND METHODS

This descriptive cross sectional study was carried out between January 15th to July 20th of 2015 in the 10 Sub Counties Machakos County, Kenya (latitudes 0^0 45' South to $1^0$31' South and longitudes 36^0 45' East to 37^0 45' East), a county that is mostly semi arid and covers about 6,300 square kilometers. Clearance to conduct the study was provided by Kenyatta University graduate school, NACOSTI and the County Medical Officer of Health (CMOH). Thirty four patients with Vesico-vaginal fistula were purposively selected from 10 sub counties of the county and every individual's information was studied. Further information was collected from 14 of the patients' husbands, 25 women group leaders from the County, 48 Community Health Workers (CHWs), and 177 healthcare workers in the County. The data collected included the patients age, marital status, parity, education background, monthly income and on their occupation. Further information was sourced on perceived type, cause, duration and adjustment practices in living with the condition. Researcher facilitated questionnaires were completed; interview schedules with the respondents were conducted and key informant interviews and focus group discussions we carried out. Collected data was coded and descriptive statistics, cross-tabulation, and regression analysis were analyzed using SPSS Version 20.

RESULTS

The ages of the patients ranged between 15 and 35 years with mean and median years of 22.3 years. A majority of the patients (62%, n=21) were below 23 years as presented in (Table 1). There was a highly significant negative correlation ($r=-0.9339$, $p<0.01$) between the incidences of VVF and age of the patient. Perusal of the patients' hospital reports and report from the healthcare workers attributed the VVF condition mainly from obstructed labor due to Mal-presentation of the baby at delivery, Cephalopelvic disproportion (CPD), maternal distress or Cervical dystocia. The study observed that (29%, n=10) had no formal education and even among the formally educated, less than 20%, (17.6%, n=6) had post primary education (Table 2).

The mean length of time the patients had lived with the condition was about 3.5 years with about 60% of them not exceeding 4 years (Table 3). The mean age of the patient at the time they developed the condition was found to be 18.8 years with about 95% developing it when their age was below 27 years of age (Table 4). The study showed that most of the patients (82%, n=28) came from households earning less than sh6, 000 a month with a mean monthly earning of about sh3600 which was slightly more than one dollar a day (Table 5). There was a highly significant negative correlation ($r=-0.904$, $p<0.01$) between the incidences of VVF and monthly income. The study established that the 34 cases were reported from sub counties with low number of maternity units (Table 6). There was a significant negative correlation ($r= -0.6415$, df (10), $p<0.05$); ($t= 2.644$) between number of maternity units per sub county with the number of the VVF cases studied. Almost half of the patients (47%, n=16) perceived that the general public sympathized with their fate (Table 7)

Table 1 Age distribution of the VVF cases at onset of VVF in Machakos County

Age in years	Frequency	Percentage (%)
15 – 17	8	23.5
18 – 20	6	17.6
21 – 23	7	20.6
24 – 26	6	17.6
27 – 29	3	8.8
30 – 32	2	5.9
33 – 35	2	5.9
Total	34	100.0

Table 2 shows the distribution of VVF cases by education levels.

Education level	Frequency	Percentage (%)
Never been to school	10	29.4
Primary school	18	52.9
Secondary school	4	11.8
Post secondary (college)	2	5.9
Totals	34	100.00

Table 3 shows the period the patients have lived with the condition.

Age in years	Frequency	Percentage (%)
<2	10	29.4
2-4	11	32.3
4-6	9	26.5
6<	4	11.8
Total	34	100.0

Table 4: Distribution of VVF patients by age at the occurrence of the condition

Age in years	Frequency	Percentage (%)
12 – 15	8	23.5
15 – 18	9	26.5
18 – 21	7	20.6
21 – 24	5	14.8
24 – 27	3	8.8
27– 30	2	5.9
Total	34	100.0

Table 5 shows the distribution of income levels patients with VVF cases

Gross income level per month (kshs)	Frequency	Percentage (%)
Below 3, 000	18	52.9
3, 000 – 6, 000	10	29.4
6, 001 – 9, 000	4	11.8
0ver – 9, 000	2	5.9
Total	34	100.00

Table 6 shows the comparison of VVF cases in Machakos County against maternity facilities available by Sub-counties

Sub-county	Number of health facilities with maternity unit		VVF cases	
	Frequency	%	Frequency	%
Central	8	19.0	0	0.0
Kalama	2	4.8	5	14.7
Yatta	4	9.5	5	14.7
Ndithini	2	4.8	3	8
Masinga	2	4.8	5	14.7
Yathui	2	4.8	6	17.6
Katangi	2	4.8	3	8.8
Matungulu	4	9.5	1	2.9
Mwala	4	9.5	4	11.8
Athi river	4	9.5	0	0.0
Kangundo	4	9.5	2	5.9
Kathiani	4	9.5	0	0.0
Totals	42	100	34	100

Table 7: Perception of VVF patients' perception on societal reaction towards them

Societal reaction	**Frequency (Percentage)**
Shunned	9 (26.5%)
Sympathy	16 (47.1%)
Feared	6 (17.6%)
Isolated	3 (8.8%)
Total	34 (100%)

Discussion

This study showed that all the VVF incidents were among women whose ages ranged between 15 and 35 years with mean and median years of 22.3 years. These were women at their peak of fertility [1] and fecundity hence any condition affecting their reproduction would adversely affect their life. The mean age of the patient at the time they developed the condition was found to be 18.8 years. Though this mean age was within teenage, it differs from studies conducted in Kano and Zaria (Northern Nigeria) whose results showed that the disease was commoner among women who were fifteen years or younger but very rare after the age of twenty-five years.[2,3] However the observation that the incidents decreased with age is consistent with the highly significant negative correlation between the age of the patient and number of VVF cases.

Among the factors that lead to development of VVF in developing countries are marriage and conception at young age particularly where the pelvic growth had not been achieved.[4] The healthcare workers attributed the VVF condition mainly from obstructed labor due to Mal-presentation of the baby at delivery, Cephalopelvic disproportion (CPD), maternal distress or Cervical dystocia[5]. This eventually leads to prolonged obstructed labor which is associated with pressure necrosis, edema and tissue sloughing which is responsible for 97% of VVF cases in developing countries. [6]

The study observed that more than a quarter of the patients had no formal education and even among the formally educated, less than 20% had post primary education. This observation is consistent with Mohammad[7] who reported a strong correlation between lack of education and VVF incidents illiteracy and incidents of VVF

The study observed that the mean length of time the patients had lived with the condition was about 3.5 years. Hancock [8], citing results from a survey done in Uganda explains the reasons behind failure of local surgeons from carrying out fistula repair as perceived view that fistula surgery is difficult, its results are poor, there was no opportunity to learn fistula surgery, lack of special instrument and equipment, and no specialist nursing care. He stresses that though not all fistulae can be repaired, fistula repair does not require special equipment and post operative nursing, though important is not complicated. Stamatakos *et al* [9] have explained that the main complication of VVF surgery is recurrent fistula formation but a typical fistula repair would be accomplished through accurate diagnostic evaluation and timely repair using procedures that exploit basic surgical principles and application.

The study showed that the mean daily earning of a majority of the patients was slightly more than one dollar. It also showed a highly significant negative correlation between the incidents of VVF and monthly income. This observation is consistent with Daru et al [10] who observed that VVF was problem occurring mainly amongst the illiterate and poor farmers who had prolonged obstructed labor [11]. It is observed that teenage pregnancies occur in both developed and developing countries. However 97% of obstetric fistulae are observed in developing countries (12). Unlike in the developing world, almost all deliveries in developed world are supervised by skilled healthcare givers . Therefore, the risk of obstetric fistula is low among the mothers who deliver under supervised hands in spite of their age, early marriage or early pregnancy. Poor women are more likely to deliver at home or under unskilled hands, and risk of VVF complication increases if she is underage.

The study established a significant negative correlation between the number of maternity units per sub county and the number of VVF cases studied. Mawajdeh *et al* [13] identified five elements for assessing the quality of prenatal care. They included patient provider relationship, technical management, information exchange, continuity and management. The women reported to be satisfied with the quality of prenatal care when these requirements were adequately met. The adequacy of health facilities motivates the women to seek for prenatal healthcare. Whenever the perceived needs are not adequately met, the tendency is to search for suitable alternatives. This is observed in the study area where 70% of deliveries occur at home, usually attended by a relative or a Traditional Birth Attendant. This choice has such consequences of severe adverse effects to both mother and child, among the outcomes are VVF [14]

Almost half of the patients (47%, n=16) perceived that the general public sympathized with their fate but others felt isolated or shunned by their family and society. Besides physical challenges, VVF is associated

with medical and psychosocial complications since a mother at young age becomes a victim who cannot bear children that often times determines her value in the society. Abandonment, isolation and stigmatization were observed by Nseno [15] as the major independent variables in determining coping strategies. The more abandoned and stigmatized the woman was, the less active she was in coping, and for some patients they never regain their societal value even after surgical repair.

References

1 Kimberly, L. and Alison C (2011) Advanced Reproductive Age and Fertility SOGC Clinical practice guideline Toronto, Ontario Canada

2 Kabir, M.; Iliyasu, Z.; Abubakar, I. S. and Umar U. I, Medico-social problems of patients with vesicovaginal fistula in Murtala Mohammed Specialist Hospital, Kano *Annals of African Medicine Vol. 2, No. 2; 2003: 54 – 57*

3 Harrison K.A. Childbearing, health and social priorities: a survey of 22,774 consecutive hospital births in Zaria, northern Nigeria. Br J Obstet Gynaecol (Suppl) 1985; 5: 91-97.

4 Spurlock , J (2016) Vesicovaginal Fistula emedicine.medscape.com

5 Korell A.N prolonged obstructed labor causing a severe obstetric fistula: a case report, J Reprod Med

6 Thevenet, A. and Tita, N (2012) When is Primary Caesarean Appropriate: A Maternal and obstetrical Indications. Seminars in Perinatology, Elsevier

7 Mohammad, R. H (Vesicovaginal Fistula (VVF). A problem of underdevelopment, Foundation of Women's Health Research and Development- FORWARD – Nigeria

8 Hancock, B (2005) First Steps in Vesico-Vaginal Fistula Repair The Royal Society of Medicine Press Limited

9 Stamatakos. M, Sargedi .C, Stasinou. T, Kontzoglou, K (2014) Vesicovaginal Fistula: Diagnosis and Management, Indian journal of Surgery

10 Daru, P.H.; Karshima J.A .; Mikah, S .; Nyango, D (2011). The Burden of Vesico-Vaginal Fistula in North Central Nigeria , Journal of West Africa College of surgeons

11 Prevention of maternal mortality network. Barriers to treatment of obstetric emergencies in rural communities of West Africa. Stud Fam Plann 1992; 23: 279–291.

12 Audu, B.M.; Kulima, A.A., and Bako, B (2008) Epidemiology ofof Vesico Vaginal Fistula: no longer a calamity of teenagers, Journal of Obstetics and Gynecology, May, 2008

13 Mawajdeh,S.; Al-Qutob, R., and Raad, F.B(2013) the assessment of Quality of Care in PrenatalServices in Irbid, Jordan. The Female Client and Health-Care Provider, International Development Reseach Centre

14Singh, A (2013) Mothers Choosing At Home Birth Risk Severe Complications, Higher Likelihood of Death Pub Med

15 Nsemo, A. D (2014) Influence of Abandonment, Stigmatization and Social Isolation on coping Strategies of women with Vesico Vaginal Fistula in AkwaIbom State, Nigeria. Journal of Nursing and care. ISSN: 2167-1168