

‘Leaking Women’ and the Weight of Ignorance on Maternal Health: Understanding the Sociocultural Determinants of Obstetric Fistula in Ebonyi and Plateau States, Nigeria

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Obstetric fistula or vesicovaginal fistula (VVF), an uncontrollable and continuous leakage of urine from the vagina, is a major public health problem among young women in sub-Saharan Africa. In Nigeria, it is often related to low socio-economic status and ignorance. Existing studies on VVF have focused largely on the biomedical aspects with scant attention given to specific social and cultural factors, that are implicated in its etiology. The study was conducted in Ebonyi and Plateau states, which are culturally divergent and spatially well separated, and have major VVF referral centres accessed by women from diverse locations in Nigeria. The Proximate Determinant Framework was adapted as the theoretical underpinning and quantitative and qualitative methods using the comparative cross-sectional survey design was adopted. A Questionnaire Schedule, In-depth Interviews (IDIs) and key Informant Interviews (KIIs) Guides were used to generate information on the factors that determine the thematic medical condition. Data were content-analysed and findings revealed that respondents perceived cesarean section, patronage of Traditional Birth Attendants (TBA), and evil spirit as factors that lead to VVF. Early marriage and ignorance were also implicated in the incidence of VVF. There were, however, peculiarities in the determinants of VVF in each of the states. For instance, the variance in educational level and age of respondents/age at first birth which impact on direct factors such as duration of labour are indirect factors contributing to VVF. It has been established that improvement in women's educational status apart from raising their socioeconomic status is also linked to awareness that could bolster activities that prevent VVF in these settings.

Keywords: Vesicovaginal fistula patients, socio-medical determinants of VVF, obstetrics complications

Background

Vesicovaginal Fistula (VVF), which is a condition that alters the normal physical and social life of a girl/woman victim, is an abnormal opening usually between the vagina and the bladder causing continuous and uncontrollable urine leakage (Kabir, Iliyasu, Abubakar, & Umar, 2003). Risk factors associated with the condition are presented under three main categories: indirect factors implicated in the general socio-economic setting in which VVF occurs; intermediate factors encompassing the health status, reproductive history and the utilisation of available healthcare resources; and the direct determinants identified as prolonged and/or obstructed labour. These

categories are not mutually exclusive. For instance, initiatives directed at effectively preventing fistula are linked with the direct factors, but the success of these initiatives is largely dependent on the enabling environment created by the indirect factors influencing these women's medical care and use (McCarthy, 1997).

The socio-economic context of a community influences its health milieu generally and maternal health outcomes in particular. For example household poverty, that prevents women from accessing adequate obstetric care services have been consistently linked to maternal morbidity and mortality in relevant settings (Jeong, Jang, Park, & Nam, 2020). Additionally, lack of social support for

women negatively affects maternal health especially among marginalized groups. As has been reported, poor women are less likely to receive adequate healthcare compared to their rich counterparts (WHO, 2020).

A range of factors account for the occurrence of VVF and include social, religious, early marriage, cultural, economic and political issues among others (Dars, Brohi, Masroor *et al.*, 2022; WHO, 2005; Balogun, 1995). A combination of these factors largely determines the extent to which women are vulnerable to VVF; the likelihood of developing the condition varies considerably by geographical locations. For instance, in less developed countries, numerous causes have been identified, with the most common being prolonged and obstructed labour (97%), and trauma related to operational delivery. Also, untreated infections after delivery, and irradiation necrosis from the treatment of cervical carcinoma and rape have all been reported. These factors are often exacerbated by social and cultural beliefs (Bulndi, Ireson, Adama, & Bayes, 2022) which engender early marriage and conception usually before the pelvis bones are fully matured for childbearing. The situation is worsened by pregnancies and deliveries that are supported by unqualified healthcare professionals (John, 2016; Capes, Ascher-Walsh, Abdoulaye, & Brodman, 2011; Tebeu, Fomulu, Khaddaj, 2011; Kabir, Iliyasu, Abubakar & Umar, 2003).

Recourse to religion and attendant beliefs has also been reported to influence the rate of VVF in less developed societies with patients rejecting hospital assisted deliveries due to the belief in prophecies. Several maternal mishaps that find expression in maternal mortality and morbidity including VVF have been linked to rejection of orthodox maternal health services (Fadeyi & Oduwole, 2016; Kabir, Iliyasu, Abubakar, & Umar, 2003). To be sure, prolonged waiting on miracles may lead to or aggravate complications and avoidable negative outcomes, which are often recorded in orthodox facilities where victims eventually resort to when other pathways had failed to support their conditions (Michael, Nwokocha, & Agbana, 2023). In contrast, the most common cause of VVF in more advanced societies (often a very rare situation) is bladder injury during pelvic surgeries (John, 2016). Ignorance about the remote and immediate consequences of the condition

determines the extent to which remedies are sought by and/or for the sufferer. It is however apt to note that if left untreated, VVF could lead to adverse medical, psychological and social consequences (Fiander & Vanneste, 2012; Balogun, 1994).

While several biomedical and clinical research have related VVF to gynecological surgery, obstructed labour, and cesarean delivery (Lo *et al.*, 2019; Shrestha *et al.*, 2022), the social context of the condition has recently received less attention (Obioma, Nwokocha, & Isiugo-Abanihe, 2024). For instance, where most babies are born outside the formal health care system, the social context, defining activities based on locally residual knowledge, might exacerbate the conditions that give rise to VVF. In terms of delivery patterns, statistics from the Nigeria Demographic and Health Survey (NDHS) of 2013 found that the majority of women in Ebonyi (72%) and Plateau (63%) states had their babies at home (National Population Commission [NPC], and ICF International, 2014). Although more recent data show that these proportions have declined significantly, 54.7 percent in Ebonyi and 41.6 percent in plateau (NPC, and ICF International, 2019), the numbers are still considerably high, with implications for VVF. Thus, empirical investigations on the social components of the condition have become particularly necessary for a comprehensive understanding of the disease, which is critical for arriving at context-specific recommendations for its reduction to the barest minimum.

The two states selected for this investigation are similar in many respects including low patronage of antenatal care services, poor access to basic social amenities, pervasive polygyny and child marriage. In addition, Female Genital Mutilation (FGM) is also practiced in both states (NPC & ICF International, 2009; 2019). The situation of women in these places is further compounded by poverty, powerlessness and illiteracy, which expose them to sexual advances from their male counterparts. Teenage pregnancies, abortions and related complications including VVF are largely products of gender inequity and feminization of poverty which bolster male dominance and engagement of vulnerable women in compelling sexual encounters (Ayobola & Nwokocha 2022). Also, due to low economic status some of these women cannot afford the high and unaffordable costs of VVF repairs; patients are left at the mercy of donors and

the government, requiring them to wait for longer periods (waiting period), during which they may experience social devaluation, reduced quality of life, as well as encountering other health challenges in the process (Michael, Nwokocha, & Agbana 2023).

Studies on VVF have been conducted in several cities with more emphasis in Northern Nigeria. These research efforts had focused more on the socio-demographic characteristics of VVF patients and its epidemiology. A few focused on individuals' perception about the causes, psychological stress and the likely solutions (Harrison, 1985; Balogun, 1994; Muneer-Deen, Abiodun, & Zainab 2002; Ijaiya *et al.*, 2010; Kabir, Iliyasu, Abubakar, & Umar, 2013; Okoye, Emma-Echiegu, & Tanyi, 2014; Johnson, 2015). However, patients' treatment pathways and challenges related to waiting time have rarely been documented. A huge gap therefore exists with regard to knowledge and understanding of several social aspects of the condition. Most research efforts on VVF have been clinically based and were mainly related to the repairment trajectory of victims. This study investigated the social determinants of VVF in two Nigerian regions with divergent sociocultural ecologies, as a way of highlighting the similarities and differences, which are necessary for designing context-specific policies.

The Proximate Determinants Framework by John Bongaarts (1987) was adapted to explain how different factors influence VVF. Although Bongaarts' postulation focused on biological and behavioural factors that interact collectively to influence fertility levels, primarily by accounting for lowering the rate of reproduction, its adaptation in the present study rather explains the factors that engender VVF. In the present analysis, vesicovaginal fistula is conceived as affected by indirect and intermediate variables. The socioeconomic position of women, the status of their families, and community beliefs and practices all indirectly affect whether or not a woman may experience VVF, and to what extent. This also takes into account the effects of early marriage and female genital cutting. These socioeconomic and cultural factors influence women's reproductive behaviours and outcomes directly through the intermediate factors. The status of women and their family (education, income, occupation) may

probably have an impact on their health, sexual and reproductive behaviour. For instance, the likelihood of using antenatal services is influenced by the status of women, family, and community. Additionally, socioeconomic and cultural factors can have an effect on women's health status expressed in access to modern health care including distance to the nearest health facilities for antenatal care services and emergency obstetric care, and the quality and cost of care among others.

Materials and Methods

The study involved a triangulation of quantitative and qualitative methods. The sequential exploratory design was adopted in which the quantitative method was preceded by the qualitative approach. Primary data were collected through the use of a Questionnaire Schedule and an In-depth Interview Guide. The choice of Plateau and Ebonyi states was informed by the presence of major VVF centres that serve as referral facilities for patients from other states. These centres are reputed for attending to a large number of VVF patients from different locations in the country. The population for this study included women aged 12 – 49 years with VVF admitted at the various VVF centers in the study settings. The rationale for focusing on this age range was that previous studies in Nigeria had indicated that the majority of women with VVF were married before age 15 (Basheer & Pumpaibool, 2015; Save the Children Nigeria, 2016).

In order to ensure representativeness, the sample size for this study was statistically determined using the Cochran's (1977) sample size determination formula for the community survey. A total of 422 respondents was designated for selection, in each of the states, following a sample of 384 and an additional 38, representing 10 percent to cover for probable cases of attrition and non-response. However, only 324 and 371 copies of the questionnaire were retrieved from Ebonyi and Plateau states respectively, which totaled 695, reflecting a response-rate of 82 percent. A multi-stage sampling procedure was employed by first selecting Ebonyi and Plateau states purposively based on the existence of major and well-established VVF centres that serve as referral facilities for patients from other states. Second, three Local Government Areas (LGAs) were

selected in each of the states based on their proximity to the VVF centres (ECWA Evangel VVF Centre, Jos and National Fistula Centre Abakiliki). Third, the selected LGAs were clustered based on urban LGAs and rural LGAs, where one urban LGA (Ebonyi: Abakaliki; Plateau: Jos North) and two rural LGAs (Ebonyi: Ezza and Izzi; Plateau: Barkinladi and Riyom) were chosen from each of the states.

In the fourth stage, three communities were randomly chosen from each of the selected LGAs. Fifth, in the selected communities, systematic sampling was used to select households based on the intervals already established by balloting. For stage six, in each of the selected households, simple random sampling was used to administer questionnaire to women (aged 12 – 49 years) as respondents. In a household with more than one eligible woman, ballot was used to select. While the probabilistic sampling method was adopted for selecting of quantitative data respondents, the non-probabilistic method and specifically purposive sampling and snowballing were used in the selection of participants for in-depth interviews.

Research Assistants, who were familiar with the study areas, were recruited and trained thoroughly on the intent and methods of data collection. One main criterion was the ability to

speak the local language and/or dialect fluently, namely Igbo and Hausa in Ebonyi and Plateau respectively, in addition to English. Quantitative data were analysed at univariate, bivariate and multivariate levels using inferential statistics at $P < 0.05$ level of significance. The analysis of qualitative data was done using ethnographic summaries. Recorded information were translated, transcribed and presented based on themes. The qualitative data were content-analysed using Atlas.ti version 9.1. Ethical approval was obtained from both states of the study. Clearance certificates were obtained from the National Health Research Ethics Code (NHREC) with a reference number **NHREC/21/05/2005/00625** in Plateau State and National Obstetric Fistula Centre with a reference number **NOFIC/E and RM/87/VOL.1/40** in Ebonyi State.

Results

The sociodemographic characteristics of the respondents in Table 1 indicate that the mean age was 34.2 years and Christians constituted 75 percent of the total. While the mean age at marriage among the respondents was 21.7 years, 29 percent of respondents, in the two states combined, got married at 19 years or less.

Table 1: Distribution by the Socio-demographic Profiles of the Respondents

Variables	Response categories	Ebonyi (n=324)	Plateau (n=371)	Total (n=695)
Age	15 – 19	5 (1.6)	26 (7.0)	31 (4.5)
	20 – 24	13 (4.0)	51 (13.8)	64 (9.3)
	25 – 29	67 (20.8)	89 (24.1)	156 (22.6)
	30 – 34	75 (23.3)	60 (24.1)	135 (19.5)
	35 – 39	61 (18.9)	60 (16.3)	121 (17.5)
	40 – 44	49 (15.2)	38 (10.3)	87 (12.6)
	45+	52 (16.1)	45 (12.2)	97 (14.0)
	<i>Mean Age</i>	<i>36.60±10.80</i>	<i>32.15±9.33</i>	<i>34.22±10.27</i>
Marital Status	Single	30 (9.3)	59 (16.1)	89 (12.9)
	Married	254 (78.4)	288 (78.7)	542 (78.6)
	Separated	10 (3.1)	1 (0.3)	11 (1.6)
	Divorced	2 (0.6)	1 (0.3)	3 (0.4)
	Widow	28 (8.6)	17 (4.6)	45 (6.5)
Family Type	Monogamous	223 (69.0)	264 (76.3)	487 (72.8)
	Polygamous	100 (31.0)	82 (23.7)	182 (27.2)
Highest Level of Education	No formal education	55 (17.3)	7 (1.9)	62 (9.1)
	Primary	107 (33.6)	52 (14.4)	159 (23.4)
	Secondary	99 (31.1)	178 (49.2)	277 (40.7)
	Tertiary	56 (17.6)	125 (34.5)	181 (26.6)
	Others	1 (0.3)	-	1 (0.1)

Religion	Christianity	301 (93.2)	217 (58.6)	518 (74.7)
	Islam	10 (3.1)	153 (41.4)	163 (23.5)
	Free thinker	2 (0.6)	-	2 (0.3)
	Traditionalist	10 (3.1)	-	10 (1.4)
Main occupation	Housewife	35 (10.8)	39 (10.6)	74 (10.7)
	Trading	157 (48.5)	127 (34.5)	284 (41.0)
	Civil servant	71 (21.9)	55 (14.9)	126 (18.2)
	Artisan	3 (0.9)	51 (13.9)	54 (7.8)
	Farmer	42 (13.0)	10 (2.7)	52 (7.5)
	Student	16 (4.9)	66 (17.9)	82 (11.8)
	Others	-	20 (5.4)	20 (2.9)
Average monthly income	Less than N18000	175 (70.6)	160 (54.6)	335 (61.9)
	N18000 – N49999	65 (26.2)	46 (15.7)	111 (20.5)
	N50000 – N99999	8 (3.2)	38 (13.0)	46 (8.5)
	N100000 and above	-	5 (1.7)	5 (0.9)
	Others	-	44 (15.0)	44 (8.1)
Age at marriage	Less than 15	16 (5.4)	23 (7.3)	39 (6.4)
	15 – 19	50 (17.0)	88 (28.1)	138 (22.7)
	20 – 24	145 (49.3)	118 (37.7)	263 (43.3)
	25 – 29	78 (26.5)	56 (17.9)	134 (22.1)
	30 – 34	3 (1.0)	25 (8.0)	28 (4.6)
	35+	2 (0.2)	3 (1.0)	5 (0.8)
	<i>Mean age at marriage</i>	<i>21.62±3.64</i>	<i>21.76±4.92</i>	<i>21.69±4.35</i>

NB: Figures in parentheses are in %

Approximately, 82 percent of the respondents earned less than 50,000 Naira monthly. To be sure, these statistics could have implications for incidence and prevalence of VVF. Table 2 presents the distribution of respondents by the various factors that could determine VVF at community level. When the respondents were first asked about the age at marriage at community level: while the majority of the respondents in Plateau State (63.7%) indicated that marriages are usually contracted from age 15–19 years, about half of the respondents in Ebonyi State signified that marriages are usually contracted from age 20–24 years. This implies that the age at marriage in Plateau State is markedly lower than in Ebonyi State. When respondents were asked who mostly determines the age at marriage for a girl child, the majority of respondents in both states agreed that both parents determined the age at marriage, however both parents in Ebonyi State are more likely to decide the age of marriage for a girl child than those in Plateau State as indicated by only 44.4%.

The general view of community members on the place of delivery was also ascertained. Table 2

shows that the majority of the respondents signified that their women usually use the Government Health Centres for delivery, while only a few respondents in Ebonyi State noted that their women usually give birth at TBAs' Homes. The possible reasons for the choice of the place of delivery were low cost and good services among most women across the two states. This suggests that the majority of Government Hospitals in the two states offer highly subsidized maternity care and child health services. Furthermore, respondents were also asked whether most women seek antenatal care services. The report revealed that nearly all pregnant women seek ANC services in both states. On the form of ANC services most pregnant women sought, it was revealed that the majority attended their ANC services in modern health care centres, while only one out of ten attended or sought ANC services at TBAs' homes in Ebonyi State and less than one per cent in Plateau State. This indicates that even though a few pregnant women attended their ANC at TBAs' homes, they mostly had their deliveries using modern health care centres.

Table 2: Distribution of respondents by various factors that could determine VVF at community level

Variables	Response categories	Ebonyi (n=324)	Plateau (n=371)	Total (n=695)
Age at marriage at community level	14 years and less	5 (1.6)	16 (4.5)	21 (3.1)
	15 – 19 years	147 (46.4)	228 (63.7)	375 (55.6)
	20 – 24 years	157 (49.5)	102 (28.5)	259 (38.4)
	25 years and above	8 (2.5)	12 (3.4)	20 (3.0)
Who mostly determines age at marriage for a girl child	Father	57 (17.8)	126 (34.7)	183 (26.8)
	Mother	21 (6.6)	51 (14.0)	72 (10.5)
	Both parents	232 (72.5)	161 (44.4)	393 (57.5)
	Relatives	3 (0.9)	3 (0.8)	6 (0.9)
	Community	5 (1.6)	2 (0.6)	7 (1.0)
	Others	2 (0.6)	20 (5.5)	22 (3.2)
Place of delivery for most women in the community	Govt. General Hospital	71 (22.3)	150 (41.4)	221 (32.5)
	Govt. Health Centre	200 (62.7)	198 (54.7)	398 (58.4)
	Private Hospital	33 (10.3)	7 (1.9)	40 (5.9)
	TBAs House	4 (1.3)	-	4 (0.6)
	Home	10 (3.1)	3 (0.8)	13 (1.9)
	Others	1 (0.3)	4 (1.1)	5 (0.7)
Possible reasons for the place of delivery in the community	Low cost	131 (40.7)	252 (70.0)	383 (56.2)
	Good services	180 (55.9)	80 (22.2)	260 (38.1)
	Convenience	5 (1.6)	6 (1.7)	11 (1.6)
	Proximity	3 (0.9)	21 (5.8)	24 (3.5)
	Suggested by others	2 (0.6)	-	2 (0.3)
	Other reasons	1 (0.3)	1 (0.3)	2 (0.3)
Women seek ANC	Yes	295 (94.9)	350 (97.5)	645 (96.3)
	No	16 (5.1)	9 (2.5)	25 (3.7)
Form of ANC women usually seek in the community	Modern Health Care Centre	268 (85.4)	346 (96.9)	614 (91.5)
	TBAs	37 (11.8)	3 (0.8)	40 (6.0)
	Home remedies	9 (2.9)	7 (2.0)	16 (2.4)
	Other places	-	1 (0.3)	1 (0.1)
On who decides where a woman is to have delivery	Husband	164 (51.2)	156 (43.5)	320 (47.1)
	Wife	77 (24.1)	48 (13.4)	125 (18.4)
	Both spouses	75 (23.4)	153 (42.6)	228 (33.6)
	The in-laws	3 (0.9)	1 (0.3)	4 (0.6)
	Others	1 (0.3)	1 (0.3)	2 (0.3)
Health facilities that exist in the community	Primary Health Centre	239 (75.9)	239 (68.3)	478 (71.9)
	Private Clinic	26 (8.3)	25 (7.1)	51 (7.7)
	General Hospital	50 (15.9)	78 (23.3)	128 (19.2)
	Others	-	8 (2.3)	8 (1.2)
Affordability of the health facilities	Primary Health Centres	234 (76.2)	255 (72.6)	489 (74.3)
	Private Clinic	24 (7.8)	17 (4.8)	41 (6.2)
	General Hospital	49 (16.0)	77 (21.9)	126 (19.1)
	Others	-	2 (0.6)	2 (0.3)
Main means of accessing health facilities	Trekking	45 (14.4)	40 (11.3)	85 (12.8)
	Motorcycle (<i>Okada</i>)	253 (80.8)	207 (58.6)	460 (69.1)
	Bicycle	4 (1.3)	2 (0.6)	6 (0.9)
	Taxi	9 (2.9)	85 (24.1)	94 (14.1)
	Other means	2 (0.6)	19 (5.4)	21 (3.2)
Duration to access health facilities in the community	Less than 30 minutes	233 (73.5)	298 (83.7)	531 (78.9)
	30 mins – 1 hour	78 (24.6)	57 (16.0)	135 (20.1)
	1 hour – 2 hours	5 (1.6)	-	5 (0.7)
	2 hours and above	1 (0.3)	1 (0.3)	2 (0.3)

NB: Figures in parentheses are in %

When asked who made the major decisions regarding the place of delivery, a large number of the respondents (47.1%) stated that husbands were major decision takers than their wives in both states. However, husbands of pregnant women in Ebonyi State were noted to make such decision than their counterparts in Plateau State. Generally, for both states, patriarchal ethos was quite strong in shaping household decisions. The type of health facilities available at the community could also be a factor in VVF incidence. For instance, it was found that PHC centres were available in respective study communities and were much more affordable when compared to other health facilities.

On means of accessing the PHCs, the majority of the respondents stated that they used motorcycle to access the health care facilities as reported by 80.8% in Ebonyi State and 58.6% in Plateau State. Although it took the majority of pregnant women less than 30 minutes to access the health facilities, using a motorbike during the period portended danger.

Qualitative Findings

From qualitative data, ten thematic categories were identified as determinants and perceived causes of Vesicovaginal fistula. These include under-age marriage/early marriage, home delivery, poverty, ignorance, obstructed/prolonged labour, patronising TBAs and quack health practitioners, female genital mutilation, cesarean section, hysterectomy, evil spirit/punishment and painful menses.

Early Marriage

Under-age marriage or early marriage has been identified as one of the major determinants of VVF. Indeed, most of the affected women with VVF are usually below the age of 25 years when the physiology of their body system may not be matured enough to carry a baby for safe delivery. According to one of the health professionals interviewed, certain socio-demographic characteristics of VVF patients and lack of proper management of labour during child birth are among the causes of obstetric fistula. For instance, one of the health professionals noted that underage marriage, religious affiliation, illiteracy or

ignorance in deciding appropriate health facilities for delivery indirectly accounted for VVF. As he narrated:

One of the major issues leading to VVF is under-age marriage coupled with lack of proper obstetric care. Although it is proper to recognise age at marriage as linked to the condition, our different religions and culture have different views about this. For instance, those that practice Islam especially in the far north insist that a woman is a woman only when she gets married and at a very tender age. Also, that the first menstrual period must not occur when a girl is still in her father's house. So how can you stop them from giving out their children in marriage at a very young age? From the Christian side, we notice the ladies getting pregnant out of wedlock (teenage pregnancy) and poor management of labour. I also see illiteracy and ignorance as the basis of this because when these women become pregnant, they do not attend antenatal care and even if they do, the plan is often to have a home delivery. (KII/Health/Professional/Plateau)

From the age at first pregnancy among the VVF patients, it is obvious that under-age marriage or early marriage results in VVF. In the explanation of a patient from Ebonyi State who was 11 years when she had her first pregnancy, it could be deduced that age is a critical factor in VVF etiology. As she stated:

... It was around 2008, I had come here two times for this repair, I came in 2008 and again in 2010, but the surgery was not successful. I have lived with VVF for 12 years. (IDI/VVF Patient 24 years/ Ebonyi)

Due to underdeveloped cervix, an adolescent girl is more likely to develop VVF in subsequent pregnancies even if she may not have had the condition at the time of her first birth. For instance, when a respondent was asked when she first had VVF, she informed that she was 19 years old when

she gave birth to her fourth child and had lived with the condition only for six months. The implication is that the condition could also, in some women, be the outcome of the cumulative effect of previous experiences related to VVF causation. As stated by an interviewee:

I developed VVF at the age of 19 years during my 4th pregnancy (multiparous). I have lived with VVF for 6 months.
(IDI/VVF Patient 19 years/Plateau)

It may be deduced from the submissions of medical professionals, who were IDI respondents, that age is a major determinant.

Home Delivery

In the view of caregivers and medical professionals, engaged in the study, home delivery, which was mostly attributed to poverty is implicated in VVF as a causative factor. A nurse-interviewee noted that, even if the majority of parents were born at home in their days, it is still important to recognise the danger signs that should prompt one to refer a patient to the hospital. He explained:

I will not totally frown at home delivery because the majority of us and our parents were born at home but recognising the danger signs in pregnancy and early presentation of a patient to the hospital is extremely important. So many stories have been told about how and where pregnant women turn to when the need arises... some depend on prayers and blessing of water for drinking to aid their delivery. Some others call on persons they believe have some sort of spiritual powers to either rub the women with some substances and/or conjure spirits to assist the women to deliver, thereby accounting for avoidable delays. (KII/Nurse/Plateau)

One of the respondents provided evidence to corroborate the aforementioned statement, claiming that she truly went into labour at home and made no attempt to access any antenatal care services because her parents had determined she would give birth at home.

When I got pregnant, I did not go for antenatal visits and my parents decided I was going to give birth at home. I obeyed them considering they have more experience than I do. (IDI/VVF Patient 16 years/Plateau)

To be sure, listening to parents and elders generally, is regarded among the most accepted values in Africa. However, with exposure to formal education and modernisation, obedience to a dangerous prescription as exemplified in the preceding narrative is tantamount to attempting suicide and/or victim precipitated risk. Granted that several women in rural Nigeria do not have access to adequate maternal healthcare services, are without basic knowledge related to prolonged labor, bleeding and other major causes of maternal death, insisting on home delivery amounts to unprecedented risk. For instance, one of the respondents reported giving birth at home but laboured for two days; she started experiencing urine leakage soon after the delivery. indeed, such a situation could have been avoided had the woman recognised the consequences and sought remedies early. The negative implications of delays in seeking maternal healthcare have been noted in literature (Nwokocha, 2012). Another respondent reported almost the same experience in the following statement:

When it was time to deliver my baby, I labored at home for two days and I finally gave birth. The delivery process was difficult; two women had to insert their hands into my vagina to help the delivery. After everything I started experiencing leakage of urine two days after. How will I not have VVF when people kept putting their hands inside and touched where urine comes from? When it started, I knew all was not well because it was smelling.
(IDI/VVF Patient 30 years/Plateau)

In another statement, a respondent noted that she desired to give birth in the hospital but lack of funds influenced her decision to opt for home delivery. In her explanation:

I gave birth at home due to lack of money for hospital delivery. My husband always

complains about finance and he made the decision of where I am to give birth. (IDI/VVF Patient 35 years Plateau 2020)

Based on the foregoing explanations, it would not be wrong to infer that home delivery and poverty affected a lot of VVF patients' decision about place of delivery, which led to problems such as protracted labour, and ultimately a cesarean section that precipitated the VVF condition in some instances.

Ignorance

Ignorance could be implicated as a factor in VVF causation given that it could engender other issues that may have resulted in VVF. A health care provider, for instance, noted that ignorance is a catalyst for other issues like, FGM, underage marriage. In his statement:

I see married children going down with VVF due to immature body structure and not accessing clinics at the right time. The truth is that ignorance, lack of education and poverty play a major role in VVF incidence. Some of them complain of lack of money for hospital delivery but some of those who can afford it still do not go to the hospital but instead prefer home delivery. It is only when they had tried at home and experienced difficulty that they resort hospitals and if it results to VVF you hear them say the doctors touched where they urinate during CS. Female genital mutilation (FGM) is another factor leading to VVF and other obstetric complications; I cannot say why people still practice it other than culture despite the harm associated with it. (KII/Health Caregiver/Plateau)

Cultural beliefs, ignorance and illiteracy are blinders that could prevent individuals and groups from adhering to conventional pathways to reproductive health, including on issues that relate to VVF.

Obstructed/prolonged labour

Many VVF patients in this study claimed to have had it as a result of a difficult or protracted labour.

A woman who had obstructed labour for hours and was eventually presented for emergency obstetric care claimed she had vaginal leaks after the experience. In her statement:

It started after the cesarean section. Labour started around 3pm at night, I laboured throughout the night, until morning, my husband took me to the maternity home where I registered for antenatal. She checked me and said it is not yet time for me to deliver, she asked me to be going around the premises, until around 7pm in the evening, she induced me with some drugs, immediately I started having signs of labour, I started pushing, I pushed till the following morning until I did not have strength to push again, I stayed there till around 2pm no way, no strength for me to push again. I requested for my husband to be called, when my husband came, I asked him to take me out of that place, but the quack nurse insisted that I should try harder, that the head of my baby is closed, but when they saw that I cannot push again, no strength to push again, my husband looked for bike and carried me to a private hospital at Ezzamgbo. After observing my condition, they referred me to a bigger hospital, FMC Abakaliki and I immediately taken in for emergency caesarean section, but before then, the baby has already died. They put catheter on me, I stayed with the catheter for 3 weeks, on removal of catheter, I noticed the urine leaking. (IDI/VVF Patient/20 years/Ebonyi)

Although obstructed labour is a cause of VVF, the attitude of medical professionals could also be a contributing factor in prolonged labour. Another respondent in Ebonyi State who had a similar experience with prolonged or obstructed labor claimed that she had actually gone to a modern facility for delivery, but that due to her inability to receive medical attention, there was a delay in her delivery, which later led to urine leakage after delivery. As she noted:

Labour started around 8am, we went to the maternity home around 12pm, stayed there till around 4pm, no delivery, my husband came and took me to FMC Umuhia, when we got there, we discovered they were on strike, we left for a private hospital in Mbaise, and the doctor said that he did not have facilities to aid the delivery, we went to another hospital, which did not accept me, we left to the last place where they admitted me for emergency cesarean section. I did not know what happened again according to my parents. I was told that I regained consciousness 3 days. to my greatest surprise after I was discharged, I discovered that my urine was leaking, I complained to the doctor and he referred me to Abakaliki, I thought it was just a minor thing, that may stop after some time; but to no avail. I had scan but nothing was found, I went to another hospital at Aba, that eventually referred me to the VVF referral centre in Ebonyi State. (IDI/VVF Patient/33 years/Ebonyi)

Considering the inherent experiences of the respondents, it is obvious that various circumstances contributed to a prolonged labour that ultimately resulted in urine leakage after delivery. It is believed that while some of the prolonged labour cases that resulted in urine leakage were influenced by the attitudes of some women toward professional obstetric care, others were due to the unavailability of skilled healthcare professionals.

Patronizing TBAs and quacks

The patronage of TBAs and quack healthcare providers by some pregnant women has been attributed as a major determinant of VVF. According to a health caregiver, mid-wives who were not professionally trained undertake child delivery which eventually resulted in VVF. In his explanation:

Many women who are not trained mid-wives take deliveries at home just because they had assisted in several births and hence tagged themselves as experienced. Before a person qualifies herself to be able

to take delivery, they should know the danger signs and when to make referrals (KII/Health Caregiver/ Plateau)

In the explanation of another patient who stated that she delivered her baby at a TBA's home and after that she could not control her urination. As she explained:

I did not have any problem during my pregnancy, what I usually experienced was waist pain and weakness, sometimes. I did not attend antenatal clinic because our place is far from hospital so my husband asked me to consult the TBA... (IDI/VVF Patient/34 years/Ebonyi)

Female Genital Mutilation (FGM)

One of the identified contributing factors to the development of VVF in women is Female Genital Mutilation (FGM). According to a health professional, interviewed during the study, the cultural practice of FGM was directly linked to the onset of VVF in a nine-year old girl. The health care provider emphasised that she had experienced trauma at an early age due to this cultural practice. As she stated:

Another factor of VVF is female circumcision; look at a 9-year old girl with VVF; that is due to circumcision. They have put the little girl into so much torture at her young age. (KII/Health Caregiver/Plateau)

It was perceived that subjecting a girl child to female circumcision can lead to VVF. It was observed that most female circumcisions are carried out by inexperienced traditional attendants who are unaware of the appropriate part of the vagina to be cut off.

Perceived Determinants of Vesicovaginal Fistula

In this study, VVF patients attributed its occurrence to a combination of perceived factors. These perceptions are shaped by personal experiences, cultural interpretation and community narratives, which is likely a reflection of a complex interplay of misinformation, stigma and limited health education. The effects of misinformation and stigma have been reported in literature (Efam,

Nwokocha, & Isiugo-Abanihe, 2024). Exploring how VVF patients understand the causes of their condition is crucial not only for contextualising the burden of the disease but also for informing culturally sensitive prevention and intervention strategies. The following are patients' perceived causes of VVF:

Cesarean Section (CS)

From the participants who actually experienced VVF, it was perceived that undergoing cesarean section (CS) during childbirth was the cause. As this patient narrated:

It was after the C/S I had; one week after the removal of catheter, I noticed something like water gushing out on my leg, I was surprised... Labour started around 8am, I went to the hospital where I usually go for antenatal, I laboured till around 11pm before the doctor performed surgical operation on me; my baby was already confirmed dead. I was surprised about the leakage and I called the attention of the nurse on duty. The nurse called the doctor who said, it will stop; maybe my bladder was weak to retain the urine. (IDI/VVF Patient/29 years/Ebonyi)

From the respondents in Plateau State, similar experience of CS was perceived to have been attributed to VVF. As she shared:

When labour started, I went to the hospital (that was after I had labored at home for two days) and then the doctors checked me and said I was going to undergo a cesarean section. It was carried out and, in the process, I started having this problem. When it started, I thought it was water that was coming out, but the smell was different, and the hospital said it was VVF. (IDI/VVF Patient/25 years/Plateau)

Hysterectomy

Instead of pregnancy complications, a VVF patient had stated that it was after a hysterectomy that she developed VVF. This participant claimed during an interview that her womb was removed and that the

procedure involved touching her bladder. Precisely, she said:

My womb was said not to be okay due to pressure and was advised to have it removed. It was in the course of the surgery that my bladder was improperly handled. After the surgery I began to leak. The hospital told me they were going to refer me to another hospital; that was after two weeks. When it started it was like something swollen in my stomach and busted and I also thought it was water from the womb until the doctors told me what it was VVF. (IDI/VVF Patient/47 years/Plateau)

One can infer from this explanation why hysterectomy was perceived as the cause of VVF; that either the surgery was carried out by an unqualified surgeon or there were insufficient facilities for performing some of the surgical procedures. This shows that the facilities and medical personnel who performed the surgery may have contributed, in some way, to cases of VVF in women rather than the women themselves.

Evil spirit/ punishment from God

In the narration of a patient, VVF was ascribed to evil spirit. In the statement of the patient's mother:

We gave birth to her that way. At first, we taught it was normal childhood bedwetting but at the age of four we realised it was not so but a problem since she could not control her urination even during the day. This is her 9th year with VVF. I think that from creation she was not properly formed. I was later told that it was caused by "iska" (spirit) because why should a child be born with this kind of problem. (IDI/VVF patient/9 years old/Plateau)

In another viewpoint, the cause of VVF was attributed to punishment from God due to her mockery against those that have had the condition. As she narrated:

Child birth caused me VVF but I also think when you mock one for a particular thing it happens to you. I once mocked a VVF victim with a song on VVF so I feel it is what caused mine as a punishment for mocking her. (*IDI/VVF Patient/35 years/Plateau*)

While it is obvious that clinical factors have a role in understanding the causes of VVF in women, there are also perceived supernatural factors. Indeed, the decision to seek assistance may be affected if VVF is attributed to spiritual forces or the devil as punishment for sins committed. And if women insist on this perception situations could get worse before they seek the help of a medical professional.

Painful Mensuration

In the narrative of another patient who attributed the cause of VVF to painful mensuration and the washing of her stomach with drugs in the hospital, it was explained that:

It started due to painful menstruation. Anytime I see my menstruation it is really very painful so my parents took me to the hospital and they washed my stomach then I developed VVF. When the urine leakage started, at first, I thought it was the water from my stomach as a result of the washing. (*IDI/VVF patient/20 years/Plateau*)

From another explanation, it was attributed to menstrual cramps. In her explanation:

I got VVF because I had serious menstrual cramps. My period was usually very painful and was advised I needed to wash my 'stomach' in the hospital. It was in the process of washing that my bladder was touched then I began to leak. At first, I thought it was the water that was used in washing my stomach that was coming out but then it smelled like urine. So, my Dad told me it was urine that was coming out and not water. I did not know anything about it and how it should be treated. (*IDI/VVF Patient/18 years/ Plateau*)

In these narratives however, there is need for medical professionals who performed the said washing of the stomach to substantiate claims by the VVF patients that attributed the etiology of their condition to painful menstrual cramps. It is clear from the descriptions of the determinants of VVF provided above that no single determinant stands alone. They are linked together. For instance, ignorance could lead a patient to seek out TBA or quacks while delaying visits to the hospital for delivery or even antenatal care. Therefore, as they were not managed by doctors, both delay and ignorance could lead to home delivery, complications, stillbirth, and damaged bladder. Again, it seems that the magnitudes of the factors affecting VVF by type in Plateau and Ebonyi States are comparable. Despite some variations, similar patterns on causative factors have been reported among VVF patients in the two states. While there were more VVF patients attributing their condition to painful mensuration and patronage of quacks in Plateau State than in Ebonyi, there were more VVF patients attributing the cause of VVF condition to cesarean section in Ebonyi State than in Plateau State. Despite these differences in magnitudes, there seems to be similarities in the general causes of VVF among patients in both states.

Discussion of Findings

In discussing the results of this research on VVF, earlier reports from the Nigeria Demographic and Health Survey (2013) had shown that women in Ebonyi (72%) and Plateau (63%) states delivered their children at home which portended grave danger in emergency situations such as obstructed labour, which has been identified as one of the major causes of VVF. This study found that although the majority of VVF patients delivered their babies in hospitals, there were usually delays in deciding to use hospital for delivery either because they preferred home delivery inexpensive or do not have the resources necessary to defray the cost of hospital delivery. Others, due to the likely difficulties in accessing hospitals considering the distance to be covered.

Yet, due to other difficulties encountered in home deliveries, most VVF patients eventually resorted to hospital delivery after prolonged and/or obstructed labour. Thus, recourse to hospital deliveries is often a product of crisis and emergency when insistence on home delivery is perceived as

risky. The delays at delivery encountered by patients that eventually led to VVF aligned with the earlier finding of Harrison (1985) who identified three delays that eventually lead to VVF: delay in decision making on whether or not to patronise obstetric care, delay in reaching a health facility, mainly due to accessibility factor and delay in getting medical attention from healthcare providers.

Previous studies have associated the cause of VVF to indirect and direct factors such as prolonged labour, poverty, illiteracy, early marriage, FGM and status of African women among others (WHO, 2020; Meh, Thind, Ryan, Terry 2020; 2019; WHO, 2019; Umeora and Emma-Echiegu, 2015). This study also found, as most earlier ones, that most of the VVF cases were directly associated with lack of proper obstetric care, congenital issues, prolonged labour and hysterectomy which were largely linked to poverty, ignorance, early marriage and FGM. These risk factors predisposed several women to VVF. Ignorance among caregivers could define the entire spectrum of VVF that exacerbates both the incidence and prevalence. Thus, it takes professionalism and expertise to observe that any labour that becomes difficult at the lower pelvis affects the urethra and bladder neck than that which occurs at the pelvic brim depending on the level and nature of obstruction, especially for those who prefer home delivery, TBAs and unqualified healthcare providers at the onset of delivery (Browning, Allsworth and Wall 2010). Indeed, most of the obstructions in childbirth are usually associated with under-age pregnancy, which aggravate the conditions that give rise to VVF.

Several intermediate determinants have been identified, by researchers, to be associated with the determinants of VVF. For example, the state of health of individual women, their reproductive health condition, access and utilisation of healthcare resources have been consistently linked to VVF (Muleta, Rasmussen and Kiserud, 2010; Balarajan *et al.*, 2011; Wall, 2012; Aryal, and Shrestha, 2020). From the findings of this research, it is notable that the status of women including the socioeconomic condition of VVF patients such as poverty, access to facilities and young age at marriage, among others increased the likelihood of the risk associated with VVF compared to those

who were of higher socio-economic status and adequate reproductive health status. These findings suggest that although physiological and clinical factors associated with VVF are critical in any analysis of the condition; sociocultural factors such as lower socio-economic status, cultural beliefs and practices including FGM and under-age marriage also have significant influence on the etiology of the disease. This result is similar to the finding of Andargie and Debu (2017) which indicated that the socio-demographic characteristics of patients have a major influence on women's predisposition to obstetrics complications, including VVF.

This research further found that inadequate care during antenatal period or absence of antenatal care resulted in pregnancy complications, which in turn, led to VVF. This finding corroborated the study Robertson *et al.* (2020) which found that there is a reduction in antenatal visits in low income and middle-income countries. Raji, Hassa, Yusuf *et al.* (2018) also observed that most VVF patients did not receive any form of antenatal care prior to their delivery.

Conclusion

This study demonstrates that the perceived determinants of Vesicovaginal Fistula (VVF) in Ebonyi and Plateau states are not isolated but interconnected. The findings clearly show that social and demographic factors, such as educational level, age at first birth, access to medical facilities, and professionalism in maternal healthcare influence prolonged and obstructed labour which have mainly been identified as direct causes of VVF. While certain factors may be more prevalent in one state than the other—for instance, a higher proportion of VVF patients in Plateau State attributed their condition to painful menstruation, while those in Ebonyi State more frequently cited cesarean sections—there is a similarity in the perceived determinants of the conditions in both locations. Notwithstanding the perceptual similarity in VVF causation in the thematic study areas, the study opines that due environmental and cultural differences, interventions should be context-specific.

Recommendations

The study suggests that an improvement in the status of women, particularly through education, is crucial for preventing VVF. Higher educational levels not only raise socioeconomic status, but also increase awareness, which can bolster VVF prevention activities. It is therefore suggested that increasing the status of women through education and its concomitant advantages will go a long way to preventing the occurrence of VVF.

There is a need for the government and healthcare providers to further sensitize women about the best practices for preventing VVF. The paper highlights the significant role of ignorance in the incidence of VVF, as it prevents women from understanding the importance of antenatal care and recognising the dangers of prolonged labor. Sensitisation efforts should aim to correct misinformation and address cultural beliefs that may worsen VVF condition, such as the attribution of the condition to evil spirits or a cesarean section that was not well carried out.

Additionally, given that the findings show that social and demographic factors, which are indirect determinants, influence direct factors like the duration of labor, interventions should address these underlying issues:

- **Poverty:** Financial poverty and lack of social support negatively affect maternal healthcare, making it harder for women to afford VVF repairs. Addressing poverty can improve access to medical care and reduce reliance on home deliveries.
- **Early Marriage:** The paper identifies underage marriage as a major determinant of VVF because the bodies of young women may not be mature enough for safe delivery. Efforts should be made to prevent early and underage marriages.
- **Patronage of Traditional Birth Attendants (TBAs) and Quacks:** The study found that using unqualified healthcare professionals is a factor in VVF incidence. Recommendations should include promoting the use of professional, orthodox maternal health services instead of TBAs.
- **Antenatal Care:** Since a lack of antenatal care can lead to pregnancy complications, it is crucial to encourage and facilitate women's access to professional healthcare providers during the pregnancy period.

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