

A Study Of The Predisposing Factors To Vesico-Vaginal Fistula In Women Of Ebonyi Local Government Area Of Ebonyi State

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Abstract

Vesico-vaginal fistula is an abnormal hole between the urinary bladder and the vagina leading to involuntary discharge of urine into the vagina. Vesico-vaginal fistula still remains one of the main morbidities of childbirth in developing world and Ebonyi Local Government Area of Ebonyi State is a typical example.

The study was aimed at identifying those predisposing factors to VVF in women of Ebonyi local government area of Ebonyi State. It is a cross-sectional descriptive community based study and a total of 386 women of child bearing age were assessed using interviewer administered questionnaires.

The study revealed that 80% (309) of the studied population were aware of VVF. The study also revealed that the predisposing factors to VVF were influenced by one's level of education and employment status as both variables were statistically significant. Level of education and employment status were directly proportional to one's knowledge and inversely proportional to those predisposing factors to the development of VVF.

In conclusion, major breakthrough is still needed in order to get the women of Ebonyi Local Government Area of Ebonyi State to actually know about VVF and those predisposing factors for the development of VVF. To decrease those predisposing factors that can lead to VVF; the study suggested advocacy, health education, economic empowerment of women, girl child education and improving the socio-economic status of women as tools to bringing the desired change.

1. Introduction

In the year 2000, Nigeria and other members of the United Nations agreed on a number of Millennium Development Goals (MDGs) to improve the welfare of the people in their countries in the 21st century. The first goal of MDGs was dedicated to the reduction of poverty and extreme hunger and one of the health related goals concern reducing maternal deaths by three-quarters (75%) by the year 2015 (MDG 5).

Less than a year to the date set for attaining the MDGs many women still die or get disabled because of pregnancy, labour and child delivery. These ailments and disabilities such as anaemia, obstetric fistula, chronic pelvic inflammatory disease and post-partum psychosis (women losing their minds after childbirth) afflict the victims for periods ranging from days to life.

One of the most serious injuries of childbearing is obstetric fistula, a hole in the vagina or rectum caused by labour that is prolonged – often for days – without treatment. Usually the baby dies. Because the fistula leaves women leaking urine or faeces, or both, it typically results in social isolation, depression and deepening poverty. Left untreated, fistula can lead to chronic medical problems.

1.1. Vesico-vaginal fistula

Vesicovaginal fistula (VVF) is a subtype of female urogenital fistula (UGF). Vesicovaginal fistula is an abnormal fistulous tract extending between the bladder and the vagina that allows the continuous involuntary discharge of urine into the vaginal vault. In developing countries, the predominant cause of VVF is prolonged obstructed labor (97%).

Other causes of VVF include urologic or gynecologic instrumentation, pelvic malignancy (cervical cancer, etc.), inflammatory diseases, radiation therapy, and trauma.

The most common complaint is constant urinary drainage per vagina although small fistulas can present with intermittent wetness that is positional in nature.

Vesico-vagina fistula occurs when emergency obstetric care is not available to women who develop complications during childbirth. This is why women living in remote rural areas with little access to medical care are at risk.

1.2. Geographical distribution

Fistula used to be present in the U.S. and Europe, but was largely eliminated in the latter part of the 19th century and early 20th century with improved obstetric care in general and the use of caesarean sections in particular to relieve obstructed labor. In 1991, the World Health Organization identified the following geographic areas where vesico-vaginal fistula prevalence is high: virtually all of Africa and south Asia, the less-developed parts of Oceania, Latin America, the Middle East, remote regions of Central Asia, and isolated areas of the former Soviet Union and Soviet-dominated eastern Europe.

In Nigeria alone, Harrison (1985) reported a Vesico-vaginal fistula rate of 350 cases per 100,000 deliveries at a university teaching hospital ¹.

1.3. Rational for the study

Over seventy percent of the Nigerian population lives in the rural area and the urban suburbs. These greater bulks of the Nigerian population in the rural area and suburbs are mainly constituted by the vulnerable groups (women and children). These vulnerable groups are saddled with limited expenditure on priority social sectors that benefit them, absence of governance structures that bring the voices of the marginalized people into public setting, lack of transparency in the use of public funds for basic services, and the exclusion of women and girls from family and community decision making.

The major factors associated with vesico-vaginal Fistula are deeply embedded in political, economic and social determinants that underlie poverty and vulnerability.

Ebonyi State, the youngest in the South-East geopolitical zone of Nigeria is a typical example of the manifestation of this canker worm in the fabrics of our society some years back.

1.4. Objective of the study

1.4.1. Main objective

- ❖ To identify the predisposing factors to VVF in women of Ebonyi local government area of Ebonyi State

1.4.2. Specific objectives

1. To identify the level of awareness and knowledge of the women about Vesico-vaginal fistula.
2. To identify the predisposing factors to VVF in the women.
3. To determine whether any of the socio-demographic variables have effect on the predisposition to VVF.

2. Literature review

Millions of girls and young women in resource-poor countries are living in shame and isolation, often abandoned by their husbands and excluded by their families and communities. They usually live in abject poverty, shunned or blamed by society and, unable to earn money, many fall deeper into poverty and further despair. The reason for this suffering is that these young girls or women are living with vesico-

vaginal fistula (VVF) due to complications which arose during childbirth. Their babies are also probably dead, which adds to their depression, pain and suffering.

Actual incidence/prevalence rates from community-based studies are difficult to come by because the condition is under reported due to stigma associated with it. However, in many parts of Africa especially in the more remote rural areas, it is one of the commonest pregnancy related morbidities.

Vesico-vaginal fistula is a health condition caused by the interplay of numerous physical factors and the social, cultural, political, and economic situation of women. This interplay determines the status of women, their health, nutrition, fertility, behaviour, and susceptibility to VVF².

2.1. Lack of access to maternity care

In developed countries, both obstructed labour and VVF are medical problems which are largely in the past. This is because problems with labour may be anticipated during antenatal care and a difficult labour that may become obstructed can be identified by the use of the partograph, and a caesarean section can be performed.

In resource-poor countries, the reality is different. In these countries the vast majority of the women who die, or who develop fistula during childbirth, do so because they did not receive the health care that they needed. This may be due to a lack of basic health-care provision or through, for whatever reason, an inability to access the local health-care services.

Improving access to timely obstetric care is the most important first step that can be taken to prevent fistula from occurring in the first place. The problems in accessing maternity care that can lead to maternal death or complications are commonly referred to as the “three-delays”³. Fistula can develop because of any one of these:

- 1) Delay in deciding to seek care.
- 2) Delay in reaching a health-care facility.
- 3) Delay in receiving adequate care at the facility.

2.2. Socio-cultural factors

The World Health Organization (WHO) argues that poor socioeconomic development is the basic underlying factor responsible for maternal ill-health, including the prevalence of obstetric fistulae. It further argues that the standards of health in developing countries are low and those natural hazards such as malnutrition and infections remain largely unchecked. The situation worsens where health services are deficient or absent, particularly in isolated rural areas. Logistic problems compound the problem, including the failure of existing health systems to provide appropriate health care that is accessible, acceptable, and adaptable; the sole development of urban areas to the marginalization or total exclusion of rural areas; unequal distribution of government resources; and the lack of appropriate basic infrastructure such as roads, water, health centres, schools, and electricity².

Most fistula occur among women living in poverty in traditional cultures, where a women’s status and self-esteem may depend almost entirely on her marriage and ability to bear children.

2.2.1. Malnutrition: In areas where malnutrition is an indicator of a community's nutritional status, women have been noted to be more acutely malnourished than men due to differential feeding practices for boys and girls from birth. This reflects a fundamental undervaluing of girls and women which leads to discrimination and their neglect. The effects of malnutrition contribute greatly to the underdevelopment of women's physiology, and eventually to some of the physical problems. In developing countries, the poverty and malnutrition in children contributes to the condition of stunting, where the girl skeleton, and therefore pelvis as well, do not fully mature. This stunted condition can contribute to obstructed labor, and therefore fistula. Evidence to support this is found in Murphy and Baba Tukur's 1981 study⁴

2.2.2. Early marriage and childbirth: The traditional practice of early marriage contributes to a risk of obstructed labour and fistula. In parts of sub-Saharan Africa and South Asia, where VVF is most

common, women often marry as adolescents, sometimes as young as ten years of age, and many become pregnant immediately thereafter, before their pelvises are fully developed for childbearing. This helps to explain why VVF sufferers are often very young girls.

Study results on VVF vary geographically. In Africa, where the problem appears to be most prevalent, studies have shown that at least 70% of women with fistulae are aged 30 years and under.

In Asia, the same trend holds true, except that a greater concentration of women with VVF fell within the 20 to 24 year age group (except in Bangladesh, where almost half were under 20⁵

The case is different in Latin America, in that VVF has only been reported in Ecuador. A study by Calle⁶ indicated that 75% of the women with fistulae were primiparous, but the numbers were reported to be so small as to make the findings inconclusive.

In Ethiopia and Nigeria, for example, over 25% of fistula patients had become pregnant before the age of 15, and over 50% had become pregnant before the age of 18⁷. Fistula formation is also more likely to follow a first labour⁸ and often these girls and women may have been the victims of forced marriages. In a study by M. Kabir, Z. Iliyasu, I. S. Abubakar and U. I. Umar at Kano, Kano State Nigeria, the patient's age ranged between 10 and 36 years with a median age of 16 years. A majority of the patients 87 (72.5%) were between 10-20 years of age. 98(81.6%) of the patients had their first marriage between the ages of 10-15 years. A majority of these patients 94(78.3%) were illiterate.

Obstructed labour is directly related to the custom of early marriage in Nigeria (frequently below the age of 18 and sometimes before the onset of menstruation, as early as 11 years old). Early marriage invariably leads to early sexual contact and subsequent pregnancy at a time when a young girl is not adequately physically developed to permit the passage of a baby with relative ease. This can lead to a prolonged and obstructed labour and damage leading to the misery of fistula. The same phenomenon also occurs in women whose growth has been stunted as a result of poor nutrition or malnourishment.

In many traditional communities early marriage and childbearing, and large families, are the norm. There is little awareness of the need to delay the first pregnancy, or to space pregnancies well apart to enable the mother to recover and gain strength before a subsequent pregnancy. However, health services alone are unable to respond to these problems. Deeply embedded cultural and social values, and systems of beliefs, continue to form barriers which prevent young women from being able to manage their own lives and bodies. Changes in social and cultural attitudes, and enabling legislation to protect the rights of the health of adolescent girls, are also needed to help women delay their first pregnancy until they are physically able to deliver safely.

2.2.3. The role and status of women in a typical africa society: The low status of women, particularly young women just after marriage, plays a fundamental part in fistula development. Some women are denied access to care, or actually harmed, due to cultural beliefs and traditional practices. Some women may live in seclusion and, for many, the responsibility to decide to seek health care in pregnancy, or even after prolonged labour, falls to the husband or other family members, including the mother-in-law. When these women fail in their perceived duty to bear live children and, still worse, develop the stigmatizing condition of VVF, they are often rejected by their husband's family and have no means of subsistence. They are usually immediately divorced and left to fend for themselves.

Another social contributor to VVF is the lack of decision-making power available to women, even in decisions pertaining to their own health. This situation has been found to be particularly true for women in seclusion or "purdah"⁹. The existence of this problem is a major determinant in the health seeking behaviour of women. For example, if labour becomes obstructed and all local methods fail, a woman may be taken to hospital only if consent is given by her husband, the village chief, or sometimes her mother-in-law. Most times the decision comes too late. Depending on the distance to the nearest hospital, such women and/or their babies may not make it alive; if they do, permanent damage to the internal organs would have occurred. This situation is reported in Margaret Murphy's research in Zaria (1981), where it is characteristic for VVF patients to come from rural areas⁹

2.2.4. Harmful traditional practices on women: Harmful traditional practices, such as female genital cutting or mutilation (FGC or FGM), also contribute to the risk. Such cutting is usually carried out under unsanitary conditions, often by removing large amounts of vaginal or vulval tissue, thus causing the vaginal outlet and birth canal to become constricted by thick scar tissue. These practices increase the likelihood of gynaecological and obstetric complications, including prolonged labour and fistula. Although there are few reliable statistics available, these practices may increase the likelihood of such complications by up to seven times.

Harmful cutting before or during labour by unskilled birth attendants also contributes to fistula formation. In some countries, a traditional midwife or barber uses a sharp instrument, such as a knife, a razor blade or a piece of broken glass, to make a series of random cuts in the vagina in an attempt to either prepare the vagina for delivery or, during labour, to remove the obstruction and make way for the baby. These practices may explain as many as 15% of fistula cases in some parts of Africa¹⁰.

2.3. Socio-economic factors

2.3.1. Poverty: The single most important economic factor contributing to the prevalence of VVF is poverty, especially poverty in rural areas. According to the WHO 1991 Report on Obstetric Fistulae, women with fistulae come almost exclusively from poor families and communities¹¹. In her 1981 Zaria study, Murphy indicated that her data pointed to the fact that fistula patients usually come from poor subsistence farming backgrounds^{9,12}. While the immediate causes of vesico-vagina fistula are obstructed labour and a lack of emergency obstetric care, pervasive poverty is an important underlying cause. Women who suffer from vesico-vagina fistula tend to be impoverished, malnourished, lack basic education and live in remote or rural areas. Two epidemiologic studies of fistula have found that over 99% of women undergoing repair were illiterate¹³.

In sub-Saharan Africa the incidence of vesico-vaginal fistula has been estimated to be about 124 cases per 100,000 deliveries in rural areas, compared with virtually no cases in major cities¹⁴. Like many other women in remote areas of poor countries, most women who develop untreated fistula give birth at home, without assistance from skilled birth attendants.

Poverty also serves as a disincentive or deprives fistulae patients from using modern health facilities due to personal costs incurred as a result of attending these facilities. Examples of this type of cost include costs of transportation to the hospitals, costs of medication, hospital fees, costs of bandages and sutures, and costs associated with feeding both the patient and those who accompany her.

2.3.2. Illiteracy: With respect to education, Murphy and Baba Tukur's study⁴ also demonstrated that only boys attend school in Zaria (this research coincided with Universal Primary Education in Nigeria). Girls were seen hawking foodstuffs and other goods prepared by the women, who were confined to their compounds. Adult education for women was not fully accepted. In three villages, home economics was the only course offered to girls, while in six villages, adult literacy classes were for men only.

In many instances, a lack of health education hinders VVF prevention. Most rural dwellers see obstetric complications either as a result of the pregnant woman's sin, the anger of the gods, a curse, evil spirits, or heredity. For example, studies conducted across West Africa by the Prevention of Maternal Mortality Network (1992) demonstrated that certain behaviour, including infidelity and disregarding the authority of one's husband or elders, is believed to lead to obstructed labour and hemorrhage¹⁵. According to the study, women in Accra (Ghana), Benin, Calabar (Nigeria), and Freetown (Sierra Leone) reported that when complications arose, oracles were consulted. If the oracle confirmed insubordination, the pregnant woman was forced to apologize and to perform cleansing rites before she was taken for treatment. Similarly, in Bo, Sierra Leone, complications determined to have arisen from infidelity led to forced confessions of sin and the husband spitting water on the woman's abdomen to appease the gods. Only then was further help sought in hospitals, and only if the complication was thought to be serious enough¹⁵.

Illiteracy is also a factor which determines what kind of medical help is sought^{13, 16, &17}. Illiteracy deters people from attending hospitals, particularly when they are made to feel stupid and when hospital staff come from an alien culture with differing traditions, customs, and language^{4, 17& 18}.

According to Edström¹² and Royston and Armstrong,¹⁹ education gives young women better access to profitable employment alternatives. It also reduces the incidence of high-risk pregnancies, unwanted pregnancies, and abortions by increasing contraceptive use and reducing fertility. As girls stay in school longer, the average age at marriage tends to rise, as does the average age at first birth, especially when family planning services are promoted, readily available, and accepted by the women^{15,5}.

3. Methodology

3.1. Study area

Ebonyi State, the youngest in the South-East geopolitical zone was created in the year 1996 by the then Head of State – Late General Sani Abacha.

3.2. The people

Going by the official gazette of Federal Government of Nigeria of 2nd February 2009, the population of Ebonyi State is put at about two million, two hundred people. These people live in the thirteen (13) local government areas of the state.

Ebonyians are mainly agrarians, hardworking and industrious. Similarly, endowed with rich heritage, the people have peacefully and harmoniously co-existed for ages, justifying their socio-cultural congruency and ancestral commonality.

Its people have suffered years of neglect with the result that backwardness, poverty, illiteracy, ignorance, poor health service delivery and lack of basic amenities characterized its people at inception. These factors have impacted adversely on the health and social status of the people especially women and children. Maternal morbidities like Vesico-Vaginal Fistula (VVF) have incapacitated some of their women, improvising them and condemning them to perpetual poverty.

3.3. Geography

Ebonyi State lies between 7°31'N longitudes, 5°N'E with a land mass approximated at 5,932 square kilometers. The State is bounded in the North by Benue State, East by Crossriver State, South by Abia State and West by Enugu State.

With its savanna and semi-tropical vegetations, humid, sandy and dotted marshy soils, Ebonyi State is blessed with moisture land for growing not only variety of both cash and food crops but also animal husbandry.

There is the additional endowment of river which surround and criss-cross the state, which if effectively and systematically harnessed will distinctly place Ebonyi on the forefront of all season agricultural production in the country.

3.4. Study site

Ebonyi local government area is one of the thirteen (13) local government areas in Ebonyi State. It is bound in the north by Ado local government areas of Benue State and in the south by Abakaliki local government area. The eastern and western boundaries are Izzi and Ohaukwu local government areas respectively.

Ebonyi local government area has one of the worst road network in the State and has been one of the main source of negative health indices in the State. The people are mostly peasant farmers with relatively low socio-economic status compared to most part of Ebonyi State.

The local government area was carved out from Izzi local government area in October 1996 by the General Sani Abacha military administration. The local government is made up of 13 wards with a total population of 126,679 (66,679 are women and 27,878 are women of child bearing age). The local government has a total of 11 secondary schools, only one is government owned while the rest is community owned. A total of 6 health facilities including one State general hospital, mission and privately owned health facilities exist in the local government area. Most of the referral cases go to Sudan United Mission Hospitals in Izzi and Ohaukwu local government areas, Mile four hospital, Federal medical centre and the State teaching hospital in the state capital Abakaliki.

As a result of low level of education and other socio-economic factors, the health status of the people is very poor as indicated by Ebonyi local government being one of the local governments in Nigeria where wild polio virus was found in 2010

3.5. Study design

The design is cross-sectional descriptive community-based study.

3.6. Study population

Inclusion Criteria:

- Women of child bearing age.

Exclusion Criteria:

- Women below child bearing age
- Women above child bearing age

3.6.1. Sample size: The above inclusion criteria.

Women of child bearing age: The minimum sample size is determined by using

the formula: $n = \frac{z^2(pq)}{e^2}$ (where the population is more than 10,000) -

where n is the minimum sample size required

p = proportion of women that is knowledgeable about VVF

q = proportion of women that is not knowledgeable about VVF

z = value corresponding to the level of confidence

e = margin of error required

Since there is no documented study so far on the knowledge of the people on VVF and its associated factors;

$$p = 50\% = 0.5$$

$$q = 1-p = 0.5$$

$$z = 1.96 \text{ which is } 95\% \text{ level of confidence}$$

$$e = 0.05$$

The population of the women of child bearing age in Ebonyi local government area is 27,878

$$\begin{aligned} \text{Therefore } n &= 1.96^2(0.5^2)/0.05^2 \\ &= 384 \end{aligned}$$

3.7. Sample method

Multistage sampling technique was employed in the study. In stage 1: Ebonyi local government area was selected by random sampling from the sampling frame of the thirteen (13) local government areas in Ebonyi State.

In stage 2: Onuenyim Agalegu ward was selected by simple random sampling from a frame of 13 wards in the local government area

Stage 3 was the selection of the three hundred and eighty four (386) women of child bearing age (WCBA) from the eleven (11) villages making up Onuenyim Agalegu ward.

The 4th stage was the selection of the number of women within the women of child bearing age in all the villages in Agalegu ward using the systematic sampling technique.

$$n = 386$$

N = estimated number of women of child bearing age in Onuenyim Agalegu ward is 2633.

$$\text{Therefore the sampling interval} = \frac{2633}{386} \\ = 7$$

To collect the simple systematic sampling of every seventh (7th) person was after the random start was selected from a table of random numbers. The women were identified by the preliminary household listing in the villages and a house to house survey conducted to recruit and search out the eligible respondents.

3.8. Data collection

Data was collected using an interviewer-administered semi-structured questionnaire. The questionnaire was divided into 2 sections: The socio-demographic status of the respondents and the socio-demographic characteristics of the studied population were used to identify the predisposing factor to VVF in the women. Several measures were taken to ensure confidentiality. The questionnaire was interviewer administered and there was no column for self identification. The questionnaire covered several aspects of the knowledge and awareness of VVF with respect to socio-demographic variables. Two doctors and four nurse midwives were recruited to help those that could not read nor write to respond to their questionnaire.

3.8.1. Data analysis: The data from the questionnaires were entered into a Microsoft excel sheet and analysis was done with SPSS version 16. Social demographic features of the study participants were presented in frequency tables. Cross tabulations were done and Pearson's Chi square was used to test for statistical significance. The level of significance was set at ≤ 0.05 while confidence level was set at 95%.

3.9. Ethical concern

- Express permission was secured from the local government authority and the ward counselor.
- All the participants in the study were politely asked to give verbal consent before giving a questionnaire
- The information was collected confidentially with complete respect to the respondent's wish and without any force or coerce.

4. Results

The study was carefully designed and carried out in two sections- The socio-demographic status of the respondents and the socio-demographic characteristics of the studied population were used to identify the predisposing factor to VVF in the women. The results of the study were summarized in the following seven (7) tables.

Table 1. Socio-demographic characteristics of respondents

Socio-demographic variable	Frequency N = 386	Percent
Age group (years)		
15-24	87	22.5
25-34	265	68.8
35-44	27	6.9
≥45	7	1.8
Highest level of education		
Diploma and above	63	16.3
WASC/SSCE	92	23.8
FSLC	143	37.1
None	88	22.8
Marital status		
Single	53	13.7
Married	310	80.4
Separated	9	2.3
Divorced	14	3.6
Employment		
Employed	83	21.5
Unemployed	303	78.5

Majority of the respondents 265 (68.8%) were in the age group 25-34 years while 231 (59.9%) have less than senior secondary school certificate or its equivalent. About 310 (80.4%) respondents were married and as high as 303 (78.5%) were unemployed.

Table 2: Awareness of VVF in relation to socio demographic characteristics of respondents

Socio-demographic variable	Frequency (N = 386)	Awareness of VVF		X ²	P value
		Yes Freq. (%)	No Freq. (%)		
Age:					
15 -24	87	67 (77.0)	20 (23)		
25 -34	265	202 (76.2)	63 (23.8)	0.694	0.875
35 -44	27	22 (81.5)	5 (18.5)		
≥45	7	6 (85.7)	1 (14.3)		
Marital status:					
Married	310	232 (74.8)	78 (25.2)		
Single	53	45 (84.9)	8 (15.1)	3.999	0.262
Divorced	14	12 (85.7)	2 (14.3)		
Separated	9	8 (88.9)	1 (11.1)		
Highest educational qualification:					
Nil	88	60 (68.2)	28 (31.8)		
FSLC	143	103 (72.0)	40 (28.0)	14.009	0.003***

WASC/SSC	92	78 (84.8)	14 (15.2)		
Diploma & Above	63	56 (88.9)	7 (11.1)		
Employment status					
Employed	83	79 (95.2)	4 (4.8)	19.824	0.000***
Unemployed	303	218 (71.9)	85 (28.1)		

*** Statistically significant

Awareness of VVF is directly proportional to one's level of education. Employed people also had more awareness of this morbidity than their unemployed counterpart. The awareness of VVF had no strong link with the age and marital status of the respondents. Respondents' awareness of VVF was statistically significant for level of education and employment status as P is equal to 0.003 and 0.000 for highest level of education and employment status respectively.

Table 3. ANC attendance of respondents in relation to their socio-demographic characteristics

Socio-demographic variable	Frequency (N = 386)	ANC Attendance		X ²	P value
		Yes Freq. (%)	No Freq. (%)		
Age:					
15 -24	87	68 (78.2)	9 (21.8)		
25 -34	265	199 (75.1)	66 (24.9)	6.475	0.091
35 -44	27	22 (81.5)	5 (18.5)		
≥45	7	5 (71.4)	2 (28.6)		
Marital status:					
Married	310	238 (76.8)	72 (23.2)		
Single	53	37 (69.9)	16 (30.1)	3.838	0.279
Divorced	14	13 (92.8)	1 (7.2)		
Separated	9	6 (66.7)	3 (33.3)		
Highest educational qualification:					
Nil	88	67 (76.1)	21 (23.9)		
FSLC	143	116 (81.2)	27 (18.8)	10.556	0.014***
WASC/SSC	92	84 (91.3)	8 (8.7)		
Diploma & Above	63	63 (100)	0 (0.00)		
Employment status					
Employed	83	82 (98.8)	1 (1.2)	30.754	0.000***
Unemployed	303	210 (70)	93 (30)		

Antenatal attendance had a strong link with one's level of education. The more one's level of education is the more one's tendency to attend ANC. This reflected conspicuously in the data where 63 (100%) of those that had diploma certificate and above attended ANC. Also 92 (98.8%) of those who were employed also attended ANC. ANC attendance was therefore statistically significant for both highest level of education and employment status. P is 0.014 and 0.000 for highest level of education and employment status respectively.

Table 4. Means of transport of respondents to hospital during labour in relation to their socio-demographic characteristics.

Socio-demographic variable	Frequency (N = 386)	Means of transport during labour		X ²	P value
		Trekking Freq. (%)	Other means Freq. (%)		
Age:					
15 -24	87	52 (59.9)	35 (40.1)		
25 -34	265	144 (54.4)	121 (45.6)	0.922	0.820
35 -44	27	16 (59.2)	11 (40.8)		
≥45	7	4 (57.2)	3 (42.8)		
Marital status:					
Married	310	146 (47.2)	164 (52.8)		
Single	53	30 (56.7)	23 (43.3)	6.934	0.074
Divorced	14	11 (77.8)	3 (22.2)		
Separated	9	5 (57.2)	4 (42.8)		
Highest educational qualification:					
Nil	88	58 (66.0)	30 (34)		
FSLC	143	81 (56.7)	62 (43.3)	49.536	0.000***
WASC/SSC	92	46 (50.0)	46 (50.0)		
Diploma & Above	63	7 (11.1)	56 (88.9)		
Employment status					
Employed	83	4 (4.8)	79 (95.2)	117.436	0.000***
Unemployed	303	216 (71.3)	87 (28.7)		

As one's level of education increases one's means of transport to hospital during labour improves from trekking to other better means of transportation. This changes are evident in educated people 56 (88.9%) for those that had diploma and above; and employed people 79 (95.2%). Means of transportation to hospital during labour was statistically significant for level of education and employment status.

Table 5. Circumcision of girl child in relation to the socio-demographic characteristics of respondents

Socio-demographic variable	Frequency (N = 386)	Circumcision of VVF patients		X ²	P value
		Yes Freq. (%)	No Freq. (%)		
Age:					
15 -24	87	24 (27.6)	63 (72.4)		
25 -34	265	68 (25.7)	197 (74.3)	1.463	0.691
35 -44	27	5 (18.5)	22 (81.5)		
≥45	7	1 (14.3)	6 (85.7)		
Marital status:					
Married	310	85 (27.4)	225 (72.6)		
Single	53	10 (18.9)	43 (81.1)	4.110	0.250
Divorced	14	2 (14.3)	12 (85.7)		
Separated	9	1 (11.1)	8 (88.9)		
Highest educational qualification:					
Nil	88	26 (33.0)	59 (67.0)		

FSLC	143	46 (32.2)	97 (67.8)	14.726	0.002***
WASC/SSC	92	16 (17.4)	76 (82.6)		
Diploma & Above	63	7 (11.1)	56 (88.9)		
Employment status					
Employed	83	6 (7.2)	77 (92.8)	18.408	0.000***
Unemployed	303	92 (30.4)	211 (69.9)		

The assertion to the question whether one is going to circumcise her female child was more amongst the uneducated and unemployed ones. Non-circumcision of one's girl child was statistically significant for the level of education and employment status as P is equal to 0.002 and 0.000 respectively.

Table 6. Age at marriage of respondents in relation to their socio-demographic characteristics

Socio-demographic variable	Frequency (N = 386)	Age at marriage			X ²	P value
		<25 Freq. (%)	>25 Freq. (%)	Don't know Freq. (%)		
Age:						
15 -24	87	56 (64.3)	2 (2.3)	29 (33.4)		
25 -34	265	167 (63.1)	9 (3.4)	89 (33.5)	3.214	0.782
35 -44	27	18 (66.7)	2 (7.4)	7 (25.9)		
≥45	7	4 (57.5)	1 (14.0)	2 (28.5)		
Marital status:						
Married	310	190 (61.3)	12 (3.8)	108 (34.9)		
Single	53	38 (71.7)	1 (1.9)	14 (26.4)	6.112	0.411
Divorced	14	9 (64.3)	1 (7.1)	4 (28.6)		
Separated	9	8 (88.9)	- -	1 (11.1)		
Highest educational qualification:						
Nil	88	51 (58)	4 (4.5)	33 (37.5)		
FSLC	143	86 (60.2)	3 (2.1)	54 (37.7)	8.059	0.234
WASC/SSC	92	65 (70.7)	5 (5.4)	22 (23.9)		
Diploma & Above	63	43 (68.3)	2 (3.2)	18 (28.5)		
Employment status						
Employed	83	62 (74.7)	4 (4.8)	17 (20.5)	4.535	0.104
Unemployed	303	183 (60.4)	10 (3.3)	93 (36.3)		

Unlike the other factors we have taken into consideration previously. Age at marriage of the respondents was not influenced by respondents' level of education or employment status. Age at marriage of the respondents was not statistically significant for any of the socio-demographic variables used in this study.

Table 7. Respondents' view about early marriage in relation to their socio-demographic characteristics

Socio-demographic variable	Frequency (N = 386)	View about early marriage			X ²	P value
		Good Freq. (%)	Bad Freq. (%)	Undecided Freq. (%)		
Age:						
15 -24	87	10 (11.5)	32 (36.8)	45 (51.7)		
25 -34	265	16 (6.0)	122 (46.0)	127 (48.0)	5.500	0.481

35 -44	27	1 (3.7)	13 (48.1)	13 (48.2)		
≥45	7	1 (14.3)	2 (28.6)	4 (57.1)		
Marital status:						
Married	310	18 (5.8)	132 (42.6)	160 (51.6)		
Single	53	8 (15.1)	25 (47.2)	20 (37.7)	9.278	0.159
Divorced	14	1 (7.1)	6 (42.9)	7 (50.0)		
Separated	9	1 (11.1)	6 (66.7)	2 (22.2)		
Highest educational qualification:						
Nil	88	6 (6.8)	28 (31.8)	54 (61.4)		
FSLC	143	9 (6.3)	61 (42.7)	73 (51.0)	11.854	0.065
WASC/SSC	92	7 (7.6)	50 (54.3)	35 (38.1)		
Diploma & Above	63	6 (9.5)	30 (47.6)	27 (42.9)		
Employment status						
Employed	83	10 (12.0)	46 (55.4)	27 (32.6)	12.545	0.002***
Unemployed	303	18 (5.9)	123 (40.6)	162 (53.5)		

Respondents' view about early marriage was only influenced by respondents' employment status and nothing more. Respondents view about early marriage was only statistically significant for respondents' employment status. P is 0.002 for view about early marriage in relation to employment status of the respondents. How bad one views early marriage is dependent on ones employment status as employed people see it as a bad practice.

5. Discussions

Over 80% of the study population is aware of VVF as seen in Table 2. In as much as awareness cut across their various social demographic variables, the level of awareness of VVF differs. Awareness of VVF is statistically significant for level of education and employment status. This implies that awareness of VVF is directly proportional to one level of education and economic status. This is in agreement with studies done in other places which said that VVF is more among the illiterates and people with low economic status. According to Edström¹² and; Royston and Armstrong,¹⁹ education gives young women better access to profitable employment alternatives. It also reduces the incidence of high-risk pregnancies, unwanted pregnancies, and abortions by increasing contraceptive use and reducing fertility.

In table 3 there is really an improvement in antenatal attendance which could be because of the free maternal and child health services of the Ebonyi State Government. However ANC attendance is more with educated and employed women than their uneducated and unemployed counterpart. Antenatal attendance therefore has a strong relationship with one's level of education as well as economic status. As "P" is statistically significant for level of education and employment. Just like the Nigeria Demographic and Health Survey (NHDS) 2008 which showed that about 75.7% of Ebonyi State women within child bearing age attend ANC²⁰. Our study showed that about 76.2% of the studied population attends ANC. ANC attendance increased with increasing education level and employment. The slight deviation and increase could be accounted for by the free maternal health services of the present administration in Ebonyi State.

This study also tried to access the means through which these women go to hospital when they are in labour. The study discovered in table 4 that majority of the women trek to the hospital when they are in labour irrespective of the distance. However this does not apply for those who are educated and employed as many of them go hospital during labour through other better means other than trekking. The means with which a woman in labour goes to the hospital is a function of one's level of education and

employment status. This particular item which is one of the causes of second delay in seeking for care is statistically significant for education and good economic standing. This simply means that the ease which a pregnant woman gets to the hospital is function of her education and economic status.

One of the predisposing factors to VVF is female circumcision. This study shows that greater than 75% of the respondent wouldn't circumcise their girl child but the statistical difference amongst other socio-demographic variables under study is not significant except for level of education and economic status. From table 5 even though other socio-demographic variables wouldn't circumcise their female child but it is assuredly most unlikely amongst the educated people and people who are employed compared to their uneducated and unemployed counterparts. Educated and working class people are more prone to not circumcising their female child as "p" is statistically significant for level of education and employment status.

The age at which our respondents married was not in any way statistically significant for any of the socio-demographic variables as can be seen in table 6. Over 60% of the respondents married before the age of 25 years and one would have been wondering why their level education could not stop them from marrying early. This could be that those educated respondent has married before going to school or they were married off by their poor parents who couldn't train them and they are now trained by their husbands. This is agrees with what is obtainable here where a girl is given in marriage early by their poor parents to a capable man who now train the girl. This particular item implicates custom of the people as well as economic status of parents and would be husbands.

Most of the respondents were undecided as touching their view about early marriage as is seen in table 7. This could be shying away from the truth as many would like to train their girl child before giving her to marriage but for the financial burden involved. It was only the employed ones that 55% were saying that it is bad to marry out a girl child so early. This shows that poverty is the major reason why people marry out their girl child early. Marrying out a girl child does not only provide a relief by reducing the number of dependent ones but also boost the economy of the family through bride price and other incentives from the in-law. Education alone or employment without good financial base is not enough to stop this predisposing factor to VVF. This show the role reduction and eradication of poverty will have in reduction of the predisposing factors to VVF. P is only significant for employment status i.e. socio-economic status. This goes a long way to show that early marriage is caused by poverty and that is the more reason the data shows that marrying out a girl child before 18 decreases with employment. The attitude of the population to marrying out girls early was a function of their financial state alone irrespective of one's level of education. Even with many certificates and inability to afford for the comfort of one's family, such a person will opt to marrying out the girl child prematurely or early which serves as a relief and source of income to the family. The study in Murtala Mohammed Specialist Hospital in Kano showed most VVF patients married early²¹.

6. Conclusion

The root cause of Vesico-vaginal fistula is deeply embedded in political, economic and social determinants that underline poverty. The whole work in this study revolves around education and poverty. These two socio-economic variables have strong connotations as the absence of one leads to the other. Both of them according to our findings in this study have a strong effect on the development of VVF. This study was also able to establish two social classes among the studied population:

Class 1: the educated and employed

Class 2: the uneducated and unemployed

One of the most striking revelations from this study is that about 80% of the participant in the study are aware of VVF yet those predisposing factors to the development of VVF are still indisputably existing. The big question now is why this discrepancy?

This study was able to pin down the reason for this incongruence to:

Poverty: Education and employment status are the two socio-demographic characteristics that influence one's predisposition to VVF according to the study. Notwithstanding, there are still some practices like early marriage which people still indulge in despite their education. This goes a long way to show that the root cause of VVF according to our studies is illiteracy which leads to unemployment. Unemployment in turn leads to poverty. Poverty as the main social risk factor leads to early marriage which is seen as a relief and also a source of income for the impoverished family. Poverty debases a woman and because of their low status in the communities, they lack the power to choose when to start giving birth to children and also when to seek for obstetric care. All these webbed up factors drag the poor rural uneducated woman to VVF.

Come what may, major breakthrough is still needed in order to get the women of Ebonyi local government area of Ebonyi State to actually stamp out these predisposing factors to VVF. Like what the scripture said "you shall know the truth and the truth shall set you free". The identification of these predisposing factors to VVF can only be complete when it reflects in the attitude of the people which in all entreties culminate in the reduction and eradication of VVF.

7. Recommendations

The study therefore makes the following submissions as the way forward based on the revelations from this study.

- I. **Advocacy:** Advocacy at the level of the community and the different tiers of the government about VVF, its associated factors, the control, prevention and cure is very important. Acceptability and accessibility to modern health facilities should be enhanced, by bringing it within the reach of the communities and to the women especially. Advocacy for the establishment and use of emergency obstetric care centres in the community.
- II. **Health education:** This enables the community to be better informed about reproductive health issues and the dos and don'ts pertaining to maternal morbidity and mortality. Awareness campaign should be organized in schools, clubs and other organizations. Traditional and religious leaders should be involved and ex-VVF patients should be recruited to participate in the campaigns. The campaigns should focus on those basic truths about VVF and its associated factors. The campaign should also encourage those who already have VVF to seek for help. Existing health facilities should also tailor their teachings in their health talks during antenatal visits to include those basic truths about VVF.
- III. **Economic emancipation:** It is the primary responsibility of the government to provide adequate infrastructure especially in the rural areas. Good all season roads are essential to improve geographical access to health institutions. It is also primarily the responsibility of government to establish modern health institutions and facilities but communities and religious organizations can also play a role. The government of this country should be more proactive in poverty eradication by creating jobs to the Nigerian populace and enacting those laws that will make it favourable for investors to come in. Economic empowerment of women through organization of women's cooperatives and establishing small income generating projects are to be encouraged in order to give them some economic independence.
- IV. **Girl child education:** Illiteracy and ignorance are among the most potent root causes of maternal mortality and morbidity including VVF. The more people are educated and informed the less likely they are to embark on risky behaviours and lifestyle which predisposes them to VVF. Formal education and religious teaching should be actively encouraged. In this regard the communities as well as all the tiers of government and NGOs have roles to play. Government should establish more schools and these should be either free or subsidized, especially for girls, depending on local conditions. Withdrawal of girls from school for marriage should be discouraged. Family life education should be taught in schools. Formal education enables recipients to better appreciate the value and benefits of qualitative healthcare.

V. **Improving the status of women in the society:** At the background of many of those morbid occurrences is the traditional low status of women in the society. Culturally women take the back seat in most things and are only to be seen and not to be heard or be in control of their reproductive life. In some cultures when they are in labour and problems arise which endangers their life or health they cannot even take decision to go to hospital for help if the husband is away. As a strategy male over dominance should be the focus of action not dominance. Hence, male involvement in all awareness and community mobilization is very important.

Micro-credit scheme should be put in place to empower the women economically. This will enable them to have access to medical care and control the issues of non patronage resulting from the high level of poverty, as well as the dependency of the women on their husbands and other relations for almost everything.

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8.1. Appendix

8.1.1. Questionnaire: Kindly tick the option(s) that most apply to you. All information will be treated confidentially.

Socio-demographic characteristics:

1. How old are you?
2. What is your marital status? (i) Single (ii) married (iii) separated (iv) divorced.
3. What is your highest level of education? (i) Nil (ii) FSLC (iii) WASC/SSCE (iv) Diploma/above
4. Which of the following applies to you? (i) employed (ii) unemployed

Awareness of VVF

5. Do you know about VVF? (i) yes (ii) no (iii) don't know
6. What do you think are the causes of VVF? (i) evil spirit (ii) adultery (iii) obstructed labour (iv) early marriage (v) female circumcision (vi) inadequate health facility (vii) ignorance (viii) poverty (ix) poor nutrition (x) curse (xi) don't know
7. Do you think VVF is curable? (i) yes (ii) no (iii) don't know

Predisposing factors to VVF

8. At what age did you marry? (i) 18yrs (ii) 18-25yrs (iii) 25-40yrs (iv) >40yrs (v) don't know
9. At what age did you have their first pregnancy? (i) <18yrs (ii) 18-24yrs (iii) 25-40yrs (iv) >40yrs (v) don't know
10. Will you circumcise female child? (i) yes (ii) no (iii) don't know
11. Do you attend ANC? (i) yes (ii) no
12. What is the commonest means of transport to the hospital during labour? (i) trekking (ii) wheel barrow (iii) bicycle (iv) motorcycle (v) motor car
13. Who do you think takes the decision of when to go for treatment? (i) father (ii) mother (iii) husband (iv) wife (v) both partners (vi) others (vii) don't know
14. Do you like your girl child to marry and get pregnant before the age of 18? (i) yes (ii) no (iii) undecided
15. What in your mind do you perceive as the commonest cause of VVF in this village? (i) obstructed labour (ii) female circumcision (iii) illegal abortion (iv) sexual assault (v) none of the above.