SOCIAL CONTEXT OF VESICOVAGINAL FISTULA IN EBONYI AND PLATEAU STATES, NIGERIA

BY

Chioma Okwuchi OBIOMA

Matric. No.: 172841

B. Sc. Sociology (Jos), M. Sc. Sociology (Ibadan)

A Thesis in the Department of Sociology
Submitted to the Faculty of the Social Sciences in Partial Fulfillment of
the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

of the

UNIVERSITY OF IBADAN

JUNE 2023

CERTIFICATION

I certify that this work was carried out by C. O. Obioma in the Department of Sociology, University of Ibadan.

.....

Supervisor
E. E. Nwokocha,
B.Sc. (IMSU), M.Sc., PhD. (Ibadan)
Professor, Department of Sociology
University of Ibadan, Nigeria

DEDICATION

This thesis is dedicated to God and my husband.

ACKNOWLEDGEMENTS

I give all glory, honor and majesty to the Lord Almighty, for being my Tower of strength in this phase of my life. The accomplishment of this Ph.D programme was possible only because God's grace and mercy was upon my life. I sincerely appreciate my supervisor, Prof. E.E. Nwokocha, who made sure this doctoral programme was a success; despite his busy schedule and various activities requiring his attention, he was always available whenever I needed his attention. I really appreciate his patience, intellectual and moral encouragements. He thought me a lot in the course of this work and he is to me a mentor and a role model.

To my husband Efam Raymond, words fail me; your support towards the accomplishment of this work was second to none. To my Ph.D babies, Raymond Jnr, Ariana and Amalya thank you for disturbing just a little and letting mummy fulfill her dreams. My profound gratitude goes to my loving parents, Mr (late) and Mrs Obioma, who supported and encouraged me in the course of this work, although my loving father could not see the end due to death I know he is proud I made it through; I don't know how much to thank you. Having loving and wonderful siblings is a blessing. I am really indebted to my siblings, Nnenna, Chinyere, Ugochukwu, Oluchi, Nkechi and Okechukwu for their great support and encouragement towards the success of this programme. I love you all.

I am also grateful to all the lecturers in the Department of Sociology University of Ibadan, for their inputs towards the success of this programme. I want to specially thank Prof. U. C. Isiugo-Abanihe who treated me as a daughter and gave me support and encouragement needed in obtaining a Ph.D. Special thanks to my close friends, Drs. A. D. Ayinmoro, Turnwait Micheal, David Musa, Kyendi Daniel, Yale Nalong, Maiwada Samuel, Bewul, Ifeoma Uwalaka. You all are wonderful. I sincerely appreciate my mentor and role model, Prof. E.O. Alemika for your great support toward the success of my programme. You encouraged me a lot and made sure it all went well. God bless you. I thank all members of Dominion City Rayfield, Jos, especially Pastor Esosa Agbontaen whose prayers and lifting words made me a victor. God bless you all.

Finally, to my Creator, I say thank YOU.

ABSTRACT

Vesicovaginal Fistula (VVF), an uncontrollable leakage of urine through the vaginal, is a global public health problem associated with maternal death. In Nigeria, it is a common gynaecological issue associated with marital disruption and social exclusion. Studies on VVF have mainly focused on its biomedical aspects with scant attention given to the social factors associated with the condition, especially in Ebonyi and Plateau states where there are availability of well-established VVF Centres for patient referrals. This study therefore, examined the determinants, community perception, prevalence, treatment pathways and factors influencing care and support for VVF in Ebonyi and Plateau states.

The Ecological Model of Health provided the framework. A mixed-methods approach comprising a comparative cross-sectional survey design was adopted. A sample of 695 respondents: Ebonyi (324) and Plateau (371) states were drawn using Cochran's (1977) formula. A multi-stage sampling technique was used to administer semi-structured questionnaire to community members to elicit information on community perception and socio-economic consequences of VVF. Hospital Records (Ebonyi (136) and Plateau (381) states) were used to generate information on the prevalence and determinants of VVF. Key Informant interviews were conducted with four gynaecologists and four nurses. In-depth interviews (20 from each state) and case studies (4 from each state) were conducted with VVF patients to elicit information on treatment pathways, and care and support. Quantitative data were analysed using descriptive statistics, Chi-square and Logistic Regression at $p \leq 0.05$, while the qualitative data were content-analysed.

The respondents' age was 34.22±10.27 years; 78.6% were married and 40.7% attained secondary education. The major determinants of VVF included obstetrics complications (86.1%), congenital (1.0%) and prolonged labour (0.6%). Eight per cent had negative perception about VVF patients, but those in Plateau were six times (OR=5.56) more likely to hold negative perceptions of VVF patients than those in Ebonyi State. Prevalence of VVF was 12.2 (Ebonyi) and 23.7 (Plateau) per 100,000 women; and these were significantly related to age at child delivery (x^2=20.19), parity (x^2=27.02) and education (x^2=102.34). The common treatment pathways for VVF among patients started from simple home remedies and herbs with few visiting modern healthcare facilities before referrals to VVF Centres. Ignorance and the belief that the traditional therapy was more effective were factors that influenced VVF patients' decision to utilise home remedies and herbs at the beginning of the condition. Perceived severity of the condition and referrals made by the healthcare providers influenced the choice of subsequent treatment options. Delay to visit modern healthcare facilities aggravated the VVF condition. In Ebonyi State, care and support for VVF patients was influenced by marital status and level of spousal affection, while the number of times VVF repairs were done as well as relatives' decisions influenced care and support for VVF patients in Plateau State. The burden of odour from VVF patients and the cost of treatment resulted in stigmatisation, divorce, job loss and economic disempowerment among these patients.

Social and demographic factors influenced the determinants and treatment pathways for Vesicovaginal Fistula in Ebonyi and Plateau states, Nigeria. There is a need for government and healthcare providers to further sensitise women about the best practices leading to the prevention of the condition.

Keywords: Vesicovaginal Fistula Patients, Treatment Pathways, Marital Disruption

Word counts: 499

TABLE OF CONTENTS

CHAPTER FOUR: RESULTS AND DISCUSSION

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

LIST OF TABLES

LIST OF FIGURES

LIST OF BOXES

LIST OF ABREVIATIONS

ANC	Antenatal Care
C/S	Cesarean Section
DHS	Demographic and Health Survey
FGD	Focus Group Discussion
FGM	Female Genital Mutilation
FWA	Family Welfare Assistant
IDI	In-depth Interview
LGA	Local Government Area
NDHS	Nigeria Demographic and Health Survey
NGOs	Non-Governmental Organisations
NPC	National Population Commission
MCH	Maternal and Child Health
MICS	Multiple Indicators Cluster Survey
OTC	Over the Counter
OF	Obstructed Fistula
PHC	Primary Health Center
SAMCO	Sub-Assistant Community Medical Officer
SSA	Sub-Saharan Africa
SVD	Spontaneous Vaginal Delivery
TBAs	Traditional Birth Attendants
UNICEF	United Nations Children's Fund
VVF	Vesicovaginal Fistula
VF	Vaginal Fistula
WHO	World Health Organisation

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Improved maternal health is a major indicator of progress particularly with regard to achieving the Sustainable Development Goal 3 (SDG-3) among less developed societies (United Nations Development Programme, 2015). The health of women and children has remained a public health issue especially in sub-Saharan Africa. With 814 per 100,000 live births and 104.3 per 1000 live births, Nigeria is among the countries with the highest rates of maternal and child mortality respectively (World Health Statistics, 2018). Vesicovaginal fistula (VVF), which develops during childbearing, is one of the key contributing health problems to high maternal mortaility (Wall, 2010).

Vesicovaginal Fistula (VVF), which is an abnormal openining that forms between the bladder and the vagina that results in an uncontrolled urine flow (Shanmugasundaram, Murugavaithiaatha and Arabind, 2020; Kabir, Iliyasu, Abubakar, and Umar, 2003), is a serious public health issue, particularly in less developed countries. It affects more than 2 million women globally, with 50,000 to 100,000 new cases reported each year, and majority of those affected live in sub-Saharan African and Asian countries. Due to improved obstetric care in more developed societies, its prevalence has relatively decreased, but it remains the leading cause of maternal morbidity in less developed societies (Bashah, Worku, and Mengistu, 2018). For example, the estimated rate of VVF in the United States between 0.5% - 2% (John, 2016), while the estimated rate in sub-Saharan Africa is between 1.3 – 5.5 per 1000 women of reproductive age (Maheu-Giroux *et al.*, 2015).

In West Africa, the incidence of VVF ranges from 1.4 to 4 per 1000 births, with Nigeria having an annual incidence rate of 2.11 per 1000 births, with about 20 new cases added each year to already large number of untreated patients (Umoiyoho, and Inyang-Etoh, 2012;

Ijaiya, Rahman, and Aboyeji, 2010). In Nigeria, it was discovered that the prevalence of VVF is 3.2 per 1000 women, with approximately 13000 new cases per year (Federal Ministry of Health [FMoH], 2019). More worrisome is the estimate of over 2 million untreated obstetric fistulas sub-Sharan Africa and Asia (World Health Organisation, 2018), with approximately 150,000 women awaiting repairs and about 33,000 new cases reported (Maheu-Giroux *et al.*, 2015; Ijaiya, 2004; Ijaiya, 2002; Muncer-Deen, Abiodun, and Zainab, 2002). Meanwhile, Wall (2012) has argued that obstetric fistula is usually associated with poor countries; hence it should be classified as a neglected tropical disease.

A range of interacting factors influence the occurrence of VVF, including social, religious, cultural, economic and political factors, among others (Dars, Brohi, Masroor et.al, 2022; WHO, 2005). The interaction of these elements, on the other hand, impacts women's socio-economic and health statuses, as well as their vulnerability to VVF. Despite the interaction of these factors in the occurrence of VVF in women, the magnitudes of developing the condition vary considerably by countries. For instance, in less developed countries, numerous causes of VVF have been posited in the literature, with the most common being prolonged obstructed labour (97%) without timely emergency obstetric care, as well as trauma during operational delivery. Also, untreated infections after delivery and irradiation necrosis from the treatment of cervical carcinoma and rape have been linked to VVF. These factors are exacerbated by the backdrop of social and cultural beliefs (Bulndi. Ireson, Adama and Bayes 2022) which encourages early marriage and conception usually before the pelvis bone gets fully matured and ready for the process of childbirth, and this is further compounded by unsupervised pregnancies and deliveries and unqualified health care professionals (John, 2016; Capes, Ascher-Walsh, Abdoulaye, and Brodman, 2011; Tebeu, Fomulu, Khaddaj, De Bernis, Delvaux and Rochat, 2011; Kabir, Iliyasu, Abubakar and Umar, 2003).

Religious beliefs have also influenced the increased rate of VVF in less developed societies; patients reject hospital deliveries due to prophesy from their religious leaders thereby leading to VVF or even death (Fadeyi, and Oduwole, 2016; Kabir, Iliyasu, Abubakar, and Umar, 2003). The implication is that when they don't get the desired 'faith' delivery and and complication arise, they turn to orthodox medicine, which is usually too late. In contrast,

the most common cause of VVF in more developed countries is largely linked to bladder injury during pelvic surgeries (90%), resulting in fewer case of VVF than in less developed countries (John, 2016). Therefore, the nature, knowledge and accessibility of medical care in mored developed and less developed countries are all affected by the social and cultural factors. If left untreated, Vesicovaginal Fistula leads to adverse psychological, health and social problems (Fiander, and Vanneste, 2012).

1.2 Statement of the Problem

Vesicovaginal fistula is a bio-medical condition that has socio-economic, psychological and health implications (Kabir, Iliyasu, Abubakar, and Umar, 2003). Due to the fact that urine leaks provide a constant stench or odour, patients become repulsive to other persons, thus leading to stigmatisation. The stigmatisation of VVF patients increases the likelihood of under-reporting thereby making it difficult to determine the actual incidence/prevalence rates; as a result, obtaining reliable data, which is necessary for proper classification of the condition, is challenging. This has implications for the accuracy of policy formulation.

While several biomedical and clinical research have linked VVF to gynecological surgery, obstructed labour, and cesarean delivery (Lo *et al.*, 2019; Shrestha *et al*., 2022), the social context of the condition has received less attention. In terms of delivery trends, particularly in Ebonyi and Plateau States, 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). Despite the fact that the percentages of home deliveries in the two states have decreased significantly, according to the 2018 NDHS report, with Ebonyi having 54.7 percent and Plateau having 41.6 percent (NPC, and ICF International, 2019), the observed decline in home delivery is still significant, with implications for VVF. As a result, empirical investigations on the social elements of home birth, and the state of VVF are required.

In addition, both states have low antenatal patronage and poor access to basic social amenities, as well as the widespread of Polygyny and child marriage. Female Genital Mutilation (FGM) is also practiced in both states (NPC, and ICF International, 2009; 2019).

Women with these characteristics are more vulnerable to VVF. These women are also characterised by poverty, powerlessness and illiteracy, which expose them to sexual advances from their male counterparts who appear to meet their economic needs, resulting in a rise in teenage pregnancies and pregnancy-related complications such as VVF. Also due to low economic standard 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 them to wait for longer periods of time (waiting period), during which they may experience social devaluation, reduced quality of life and may encounter other health challenges in the process of waiting.

Women in Nigeria are generally economically reliant, and when they are diagnosed with VVF, they may become even poorer. Women who develop VVF require care and support to ensure their survival, however this care care and support may not be available, which might have negative consequences (Odu, and Cleland, 2013). The lack of financial support leaves them with no option than to beg for their living, thus making them vulnerable especially to malnutrition, ridicule and violence. The increase in the rate of untreated VVF among patient may likely be a problem of treatment pathway; VVF patients may choose to harness so many options and may finally end up at the hospital and most likely when they are long gone with the ailment.

Studies on VVF have been conducted in several cities with more emphasis in Northern Nigeria. These researches have focused more on the socio-demographic characteristics of VVF patients and its epidemiology with a few concentrating on individuals' perception about the causes of VVF and how the patients perceive the solution to the condition (Harrison, 1985; Muneer-Deen, Abiodun, and Zainab 2002; Ijaiya *et al,* 2010; Kabir, Iliyasu, Abubakar, and Umar, 2013; Okoye, Emma-Echiegu, and Tanyi 2014; Johnson, 2015). However, scarcely documented are patients' treatment pathways and challenges encountered while waiting for treatment. Also, the aspect of documenting social situations as it relates to VVF in two states with different cultural orientations hence, comparing and bringing out peculiar issues as they relates to the different study sites is a gap the study intends to bridge. Therefore a huge gap exists in the knowledge and understanding of the social aspects of the condition.

There is documented evidence concerning the efforts of some governments and non-governmental organisations with aims of Vesicovaginal Fistula reduction or eradication (Ijaiya *et al*, 2010). These organisations include the World Health Organisation, UNFPA and government of some northern states (UNFPA, 2005), but these efforts have been clinically based and mainly towards the repair of VVF victims**.** Hence this research aims at examining the social context of VVF in Ebonyi and Plateau states.

1.3 Research Questions

The research will be guided by the following questions:

1. What is the belief of respondents to Vesicovaginal Fistula in Ebonyi and Plateau states?
2. What is the prevalence of VVF in the study locations?
3. What are the treatment pathways of VVF?
4. What are the factors influencing care and support for VVF victims in the study sites?
5. What are the socio-economic consequences of VVF?

1.4 Research Objectives

The general aim of this study is to investigate the social context of VVF in Plateau and Ebonyi State. The specific objectives are to:

1. Investigate the determinants of VVF in Ebonyi and Plateau States;
2. Examine community perception of VVF in the study locations;
3. Determine the prevalence of VVF in the study locations;
4. Describe the treatment pathways adopted by the victims of VVF in the study areas;
5. Investigate the factors influencing care and support for VVF victims in the study sites;
6. Ascertain the socio-economic consequences of VVF in the study areas.

1.5 Justification for the Study

A study of this nature is timely and significant for the following reasons; first, several studies have been done with a majority focusing on VVF treatment/repair. A few have

addressed factors predisposing women to the condition, its epidemiology, clinical management and factors inhibiting health seeking among VVF patients (Harrison, 1983; Ojanuga, 1994; Aboyeji, 1997; Muneer-Deen *et al*, 2002; Mteta, 2006; Ijaiya *et al*, 2010). Scantily documented in the literature is the social context of the illness especially in the south eastern and north central region of Nigeria. By investigating and documenting VVF patients' treatment pathways and health care services used from the onset of the condition to the present state among other social contexts of the health condition, the study will contribute to the growing literature on VVF.

The findings of the study could be useful in creating a procedure for health enlightenment on how VVF can be prevented and may be quite useful in creating policies toward appropriate interventions against the occurrence of VVF in Nigeria. A study of this nature will bridge a gap in VVF research in the area that concerns victims' treatment pathways. Also in the aspect of documenting social situations as it relates to VVF in two different states with different cultural orientations hence comparing and bringing out peculiar issues as it relates to the different study sites which will inform place specific policies. Additionally, the study will document information that could be useful in creating more awareness, intervention programmes and policies especially in aspects of care and support of VVF victims. It will also serve as a platform for further research.

1.6 Scope of the Study

This research employed both hospital and community based approach. It considered VVF patients awaiting repair in the hospitals and also elicit responses from women in the community. The study laid emphasis on the social context of Vesicovaginal Fistula by considering the determinants, knowledge/perception, prevalence, factors influencing care and support for the condition of VVF, treatment pathways taken by the patients and the socio-economic consequences of the condition on the patients.

1.7 Definition of Concepts

This section is concerned with the definition of concepts used within the context of the study:

Vesicovaginal Fistula (VVF): VVF means an unusual interaction between the bladder and the vagina thus making waste passage from the bladder to the vagina constant and uncontrollable.

Maternal health: Maternal health means the total well-being of women in their child bearing ages during the period of pregnancy, childbirth and postpartum.

Hysterectomy: A hysterectomy is a surgical procedure that is performed on a woman to remove her uterus. The VVF that occurred as a result of the removal of the uterus is said to be associated with hysterectomy.

Parity: Parity is the number of live births a woman has had, regardless of survival, at any gestation or at 24 weeks or more. There are two forms of parity, namely; primigravida, also known as pirmiparous, which is referred to as the first pregnancy of a woman; and multigravida, also called multiparous, which is referred to the subsequent pregnancies of a woman.

Congenital: Congenital refers to series of conditions or traits that exists at birth which accounted for the cause of VVF.

Obstetric issues (problems): These are medical terms used to describe birth related causes of VVF such as vaginal tears and C/S.

Iatrogenic: Refers to a medical term used for a condition induced inadvertently by physician or by a medical treatment or diagnostic procedures. This cause could be as a result of a removal of dysfuntional organ or reactions to medical treatment.

Trauma: Trauma is an injury to living tissue caused by an extrinsic agent.

Cesarean (C/S): CS is a medical term used to describe the surgical delivery of a child through an incision or cut made in the mother's uterus of abdomen.

Spontaneous Vaginal Delivery (SVD): SVD is a form of delivery that happens on its own without requiring the assistance of a medical professional to pull out the the baby.

Social Context: Operationally, social context signifies the situations around a woman that make her vulnerable to VVF; circumstances with which VVF occurred and how victims cope with their social environment.

Care and Support: In the context of this study, care and support is the adequate help VVF victims may need to live as well as possible even with their ailments so that they can stay strong in order to pull through VVF. Help needed could be material, emotional, moral or financial. Help could come from spouse, children, mother, relatives, neighbors or friends, member of religious group or other organisations.

Treatment Pathway: This refers to the different channels VVF victims follow to get treatment; it involves a back-and-forth movement within the various health systems available to victims which could be traditional healing, orthodox medicine, faith healing, patent drug seller or chemist.

Determinants of VVF: Determinants of VVF refers to the social, cultural, economic and political situations around a woman that make her vulnerable to VVF. These situations influence VVF directly or indirectly.

CHAPTER TWO

LITERATURE REVIEW

2.0 Chapter Overview

This section presents a thematic review of literature as it relates to Vesicovaginal Fistula (VVF). The review focused on the prevalence, perceived causes of VVF, factors determining the incidence and prevalence of VVF in societies, treatment pathways of these VVF patients, their care and support system, and consequences of VVF. Literature review started with issues related to maternal health and the history of VVF. The theoretical and conceptual frameworks were also presented.

2.1 Maternal Health

This concept is synonymous with total health and safety of a woman during pregnancy, childbirth and postpartum (WHO, 2010). Several determinants which fall under the backdrop of social, economic, political and biological factors influence the success of maternal health ; issues such as nutrition, child spacing, access to obstetric care facilities, antenatal care, non-harmful cultural practices, qualified health care workers, etc. are indicators of increased maternal health hence, societal development (Panel, 2010). The importance of investing in maternal health cannot be overemphasized; this is so because maternal health is a major indicator of progress particularly with regard to achieving the Sustainable Development Goal 3 (SDG-3) among less developed societies (United Nations Development Programme, 2015). This progress has remained slow or stagnant in less developed societies because maternal and health has remained a public health issue especially in Nigeria with very high rates of maternal deaths (World Health Statistics, 2018).

Major determinants of maternal health identified by WHO are unsafe abortions, high blood pressure, hemorrhage, infection (during pregnancy or shortly after birth), and obstructed

labour (WHO, 2010). They can result in death or morbidity; women who survive obstructed and prolonged labour, in many cases experience other health consequences, and common among these is obstetric fistula such as VVF (United Nations Children's Fund, 2008). Globally, about 20 million girls and women survive childbirth, but suffer VVF (Women Deliver, 2010). Victims of VVF often suffer from discomfort due to the uncontrollable waste passage through the vagina opening (Wall, 2012a).

2.2 History of Vesicovaginal Fistula (VVF)

For years, issues relating to obstructed labour and other avoidable complications in women have been a topic in literature. In 2050 BC, Henhenit, the Queen, was discovered with the first case of obstructed labor. When she was transferred to the Art Museum in 1907, it was discovered to be the oldest ever found. Her vagina was found to be normal, but there was a mass tissue about 10cm long that appeared like intestine sticking out of the anus. To determine what went wrong, Henhenit was returned to Ciaro in 1923 to be examined by a professor, and the findings found an opening in the bladder that connects to her vagina, which was said to have occurred during parturition, resulting in her death. According to the professor, Henhenit suffered an antique Vesicovaginal Fistula (Zacharin, 1988; 2000).

Later in the 11th century, an association was established between obstructed labour and Vesicovaginal Fistula by a physician called Avicenna. He noted that in situations where women get married at very young ages, and in women with weak bladders, physicians should educate such patients on ways of preventing pregnancy; this is to avoid the fetus from causing a tear in the bladder and result in uncontrollable urine passage. He further stated that the condition had no cure and remains until the victim dies (Zacharin, 1988). Although the condition of VVF may have remained incurable due to primitive health technology and health professionals at the time of the study, development in health technology and professionals who can handle the situation to keep the victims alive appears to be occurring as time and space pass.

At the end of the first 1600BC, a clearer and more accurate description of fistula was discovered. In describing what fistula is, Felix Platter Basle stated in 1597 that VVF is the result of first labor among the young in society, resulting in a visibly noticeable opening of

the bladder. As a result of the injury, waste products such as urine spilled repeatedly and uncontrollably, producing inflamation in the affected areas (Zacharin, 1998). Remarkable progress was seen at the beginning of the 19th century in the repair and treatment of VVF with credits to Lmballe, Wutser, Simon, Sims, Emmet and Bozeman who were physicians at that time (Zacharin, 2000). Doctor Marion Sims became prominent between year 1845 and 1859 for his brilliant findings of instruments and materials used in fistula closure. With the developments by Doctor Sims and colleagues, more developed countries in the 20th century were on the verge of ensuring that the problem of obstructed labour and Vesicovaginal Fistula go into extinction or at least a rare occurrence. However, this cannot be said to be the situation in less developed countries where the problem of fistula is still evident. Although doctor Sim was not the first to close a fistula, he was credited with considerably improving surgical technique for fistula closure and for recognizing that maternal health difficulties required immediate medical and surgical intervention (Medscape, 2003).

2.3 Determinants of Vesicovaginal Fistula

Risk factors associated with VVF are presented under three main categories; the indirect factors which are implicated in the general socio-economic setting in which VVF occur; intermediate factors which encompass the health status, reproductive history and the utilisation of available health care resources; and the directs determinants which influence the final outcome of obstructed labour. The three categories as stated above are not mutually exclusive; for instance, initiatives directed at effectively preventing fistula are concerned with the direct factors, but the success of these initiatives are largely dependent on the enabling environment created by the indirect factors surrounding these women for medical care delivery and use.

The socio-economic growth of a society influences its maternal health; therefore, poor socio-economic status of a society is an underlying factor responsible for maternal morbidity and mortality (Jeong, Jang, Park, and Nam, 2020). Risk factors and conditions such as poverty, lack of social support, etc. in which their (women) personal behaviour are embedded, indirectly influences maternal health especially among marginalized groups.

Poor women are less likely to receive adequate health like their rich counterparts (WHO, 2020; Rosato, 2008). The statuses of individual women in the family, the family's position in the society and the position of the community are interconnected and influences the larger socio-economic setting in which maternal wellbeing is embedded (Wall, 2012). This implies that the well-being of an affected woman with VVF is a function of her status within the social environment to which she lives.

Obstructed labour and fistulas are problems that have been eliminated and not regarded a cause of maternal death in high income countries (John, 2016). This is because the technological environment of countries in high income countries has provided the opportunies to timely identify the anticipated problems of labour mostly during antenatal care, while also performing cesarean section when there is a noticeable difficult or obstructed labour. However, the situation is different in less developed countries where obstructed labour has remained a clinical problem and one major factor leading to maternal death and morbidity (Onyeugo, Chimezie, Nwufo, Sally, Obinna, and Udujih 2019; Khan *et al,* 2006; Johnson, 2015).

A woman who dies, or develops a fistula do so as a result of lack of proper obstetric care needed which further reflects a chaotic socio-economic and political system (Harrison, 2000). Harrison (1985), identified "three-delays" that can eventually lead to VVF: First, is the delay in decision making on whether or not to patronize obstetric care; second, delay from place of residence to health facility, which were mostly due to distance or dearth in modern facilities; and third, is the delay in getting prompt medical attention by health givers. One of the delays occurs in the majority of less developed nations, although occasionally health facilities encounter two or all three delays. Whatever the cause of the delay, it is clear that women with low socioeconomic position are more prone than their counterparts with high socioeconomic status to experience obstructed labor, which could predispose them to the condition of VVF.

Furthermore, the disparity of what is obtainable in high and in low income countries in relation to maternal death and morbidity was made vivid in the idea of Gilligan (1997) "structural violence" in which he stated that; the rates of deaths and disability among the

"bottom rungs" in the society which is on the increase is as a result of "class structure" which is an outcome of the choices made by humans collectively concerning how to distribute societies wealth. This excess death is in contrast relatively lower among those societies above them (above the bottom rungs). Putting it another way, people in the bottom rungs are more likely to be poor and more likely to be susceptible to fatal diseases (such as VVF) than people in the wealthy group, who have the means to access better medical care when necessary.

Structural violence, on the other hand, is reflected in the global distribution of obstetric fistula where the condition is solely the problem of women with lower statuses living in resourced poor societies (Wall, 2012a; 2012b; Kabakyenga *et al*, 2011). Human Development Index (HDI) with low scores strongly indicates a high level in the rate of maternal death and morbidity (McAlister, and Baskett, 2006). Hence, the importance of having a conscious effort in increasing these scores cannot be overemphasized; as it will reduce maternal health issues such as VVF. It should come as no surprise that the condition of VVF seems to be more unique to some countries' regions than to others, partly because the social and economic variables that predispose women to such a health condition varied greatly between countries, states, and regions.

2.3.1 Indirect Factors (Socio-Economic and Cultural Determinants)

Indirect factors influencing maternal health will be discussed under the following headings; poverty, illiteracy, early marriage and childbirth, the role and status of African women and harmful cultural practices.

Poverty: Poverty influences the general wellbeing of an individual and has been a major contributor the prevalence rate of VVF especially in rural areas. Poverty makes evident the interrelated nature of the categories (see above) of determinants influencing VVF; while the direct causes of VVF are obstructed labour and inadequate access to emergency obstetric care, poverty is an underlying cause (Umeora and Emma-Echiegu, 2015). Poverty has a likelihood of depriving women from the use of modern health care facilities due to cost; cost in this context include transportation to the clinics (which may be due to distance or

lack of these facilities in their communities), cost of medication, hospital fees, time (due process involved before seeing a physician) (WHO, 2020; WHO, 2019; Johnson, 2015).

The evident disparity in the use of health care services, use of cesarean section delivery, and access to emergency obstetric care between the wealthy and the poor quintiles, shows that vesicovaginal fistula and other fistulas is associated mostly to women of reproductive ages of the lower orders of resource- poor countries who do not have proper access to obstetric care (WHO, 2019; Ronsmans, Holtz, and Stanton, 2006; Houweling *et al*, 2007; Say and Rainse, 2007). Poverty is a risk factor leading to the high rate of early marriages which is seen as a medium of reducing poverty in families; young girls are used as bait to generate income in homes. The low status of a woman due to poverty inhibit their powers to choose when to start giving birth and also when to get obstetric care; this makes the individual women under this low status vulnerable to VVF and other fistulas (Johnson, 2015). Hence, the reduction of economic retrains to maternal care will go a long way in reducing maternal mortality and VVF.

Illiteracy: Illiteracy is one major backdrop in the incidence of vesicovaginal fistula. Education goes a long way in determining the kind of health care service to use and also when to use it; education here could be either formal or informal. Studies have recorded significant relationships between level of education and maternal death and morbidity; for instance, as far back as 1981, Murphy (1981) reported that VVF patients are often disadvantaged in terms education. Her study also revealed that 'ba' education (no education) was not only very evident among victims but also with their spouses; stating that only 15% of newly admitted victims had husbands who were educated and 8% of long-term VVF patients has had some form of education or the other. Adetoro (1989) in agreement also found a deficit in education among the 29 VVF victim in the university of Ilorin teaching hospital studied. His research saw that 69% and 52% of victims and their husbands has had no formal education. Poor or no education is a contributory factor to delays in seeking proper and prompt medical attention (Daru, Karshima, Mikan, and Nyango, 2011). Also, the level of education is still a factor influencing maternal death and morbidity; it influences the use and non-use of antenatal healthcare, child spacing, unwanted pregnancies and

delivery in proper health care centers (Meh, Thind, Ryan, Terry 2020; 2019; Wietzam, 2017).

The occurrence of VVF in societies is largely due to widespread illiteracy; lack of knowledge hinders VVF prevention. For instance the erroneous belief about VVF being a consequence of sin committed by the victim, a bad omen etc may influence proper VVF prevention. Educations of women helps delay marriage, gives young women access to employment alternatives which in turn helps in the reduction of teenage pregnancies and abortions thereby reducing the prevalence of VVF (Johnson, 2015).

Early Marriage and Childbirth: Marriage at very young ages adds to the risk of having maternal health complications such as VVF in societies. Often time girls married out at early ages are not biologically and physically fit for delivery hence, complications comes to play. Girls in Sub-Saharan Africa are made to face marriage at an early age of 9-16 years old and in most cases conceive almost immediately. For instance rates of child marriage in Niger, Chad, Guinea, Mali, Nigeria was 81.7%, 77.9%, 72.8%, 69.0% and 64.0% respectively (Yaya, Odusina and Bishwajit, 2019). Early marriage has been connected with increased occurrence of poor child and maternal health because at that stage of their lives, they take up adult responsibilities, engage in marital issues, their pelvises have not fully developed and are themselves babies and unfit for childbearing leading to adverse reproductive outcomes (Yaya, Odusina and Bishwajit, 2019; de Groot, Kuunyem, and Palermo 2018; Odu, 2000; Kanu, 1990). Child marriage is being practiced and justified masked in the name of culture and tradition thus creating a vulnerable stage for VVF (Akpan, 2003).

Kabir *et,al*. (2003) submitted that in Kano, Kano State Nigeria, ages of VVF victims studied were within ages 10-36 and a median age of 16 years. The study also showed that most (72.5%) of the victims were between 10.-20 years. About 82 percent of that population got married at ages 10-15 years and were mostly illiterates. This also agrees with findings of Akpan (2003) who found out that it was not uncommon for girls below the age of 13 to get married and give birth thereafter. Child marriage as a risk factor influences awareness, outcome and management of maternal morbidity such as VVF (Kolade, Hanson, Makinde and Abolarinwa 2019).

Curbing early marriage will be very instrumental in reducing VVF prevalence and even maternal deaths. Early marriage is a cultural problem and often seen as a norm in African traditional societies. Most times the need to delay first pregnancy and child spacing receives little or no attention as it seems to be going away from the norm. Health services cannot respond to these problems alone as long as deeply embedded cultural values continue to pose a barrier to young women from managing their own bodies and lives. Interventions towards changing certain cultural practices that is not healthy by enacting legislation for the protection of adolescent rights, will help curb the menace of early marriage and childbirth thereby protecting the health of young girls. Although Nigerian government included the legal age for marriage at 18 years in the child's right act, some states are yet to enact this law at the state level to ensure its effectiveness (Girls not bride 2016). In 2016, a bill that will help end child marriage faced resistance with claims that it was against the traditions and cultures of the northern part of Nigeria (Amodu *et al.*, 2018). Cultural beliefs are a huge factor to maternal health.

The Role and Status of African Women: Gender relations in Africa are largely patriarchal thereby relegating the female gender under the sole authority of the male folks (Nwokocha, and Obioma, 2016). The voices of women are suppressed even in issues pertaining to their reproductive life; decisions regarding time to get pregnant, access medical attention even in cases of emergences rest on the shoulders of the spouse or other members of the family especially the mother in-law. The above assertion is particularly true for women in "purdah" (seclusion) and women in rural areas (NPC and ICF International 2009; Murphy, 1981). Social and economic factors influencing maternal death and morbidity are closely linked to the financial power of women and their access to wealth; the economic situation of people including women gets compounded by several factors such as global economic crises which is largely influenced by the Covid 19 pandemic (Olonade, Olawande, Alabi and Imhonopi, 2019; Akokwuebe and Okafor 2015). The Covid 19 has further reduced the status of women in the society. Health seeking behavior of individual women is also determined by their status in the family and by the approved consent of the family. In cases were these approvals come late the girls or women bear the health consequences or even die in the process.

Harmful Traditional Practices on Women: Certain traditional practices carried out in societies often pose damages on individuals. One of such harmful practices is Female Genital Mutilation (FGM). FGM involves the removal of the female external genitalia by traditional midwives (WHO, 1998). This procedure is often carried out under unsupervised and unhealthy circumstance thereby exposing victims to infections and constricting their birth canals by thick scar tissue (NPC, and ICF International, 2019; NPC and ICF International, 2014; WHO 1998). This practice has been documented to be a factor increasing the tendency of obstetric complications including fistula because it leads to narrowing of the vaginal orifice and fetal distress (Sripad, Ndwiga, and Keya, 2017; Okeke, Anyaehie, and Ezenyeaku, 2012).

FGM practice is widespread in Nigeria and highly celebrated; a girl who undergoes FGM becomes famous and seen as complete. In 2001, Nigeria accounted for the highest rate of genital mutilation cases with about one-quarter of the estimated circumcised females worldwide (UNICEF, 2001). But the rates are decreasing. Nigeria experienced a decrease in FGM in 2018 as against results from 2013; in 2018, 20% of women between ages 15-49 were circumcised as against 25% reported in 2013 (NPC, and ICF International 2019; NPC and ICF International, 2014). The prevalence rates of FGM is highest in south east Nigeria with 35% and south west with 30% and lowest in North West (6%). A continuous decrease will influence positive maternal health outcomes.

The use of sharp unhygienic instruments such as razors, knives by traditional midwives in making harmful cuts before or during labour also contributes to fistula; these cuts are done in the vagina with the aim of preparing the vagina for childbirth, or in the process of labour to make way for the baby to pass freely. In many cases these injuries are usually not properly taken care of by these birth attendants (Oshonwoh, Nwakwuo and Ekiyor, 2014; Ojanuga, 1992).

2.3.2 Intermediate Determinants

This category sets the stage for clinical factors to put forth their final determining influence on whether or not fistula will be the outcome. Factors to be discussed include: health status of women, their reproductive status and access and use of health care resources.

Health Status: The general health status of women goes a long way in determining outcomes of pregnancy. Women with better health status are more likely to have better pregnancy outcomes than their less healthy counterparts; a woman with healthier tissues may withstand the stress associated with obstructed labour better. All things being equal, a woman may likely have better outcomes in her reproductive ages if she had good nutrition and health during childhood (Wall, 2011). Anemia is a health issue in pregnancy whose distribution is determined by interactions between socio-economic, biological, and ecological reasons (Balarajan *et al*, 2011). Anemia is dominant among women who are socio-economically disadvantaged, with the resourced poor and least educated at a higher risk (Balarajan *et al*, 2011). Anemia reduces the ability of women to fight off infections during pregnancy, and the declining capacity of the infected blood to carry oxygen would imply that in a case of labour that is prolonged anemic women will have lower threshold for tissue injury than women who have higher hemoglobin level.

An important aspect with implications to vesicovaginal fistula outcome is the size of the pelvic bone; the development of obstructed labour is implicated the size of the pelvic bone (Naegle, 1939). Stunting growth is another aspect of a woman's health that should not be neglected. Its results in short stature in adulthood and is in some cases a result of nutritional deficiencies during childhood. A woman whose stunted growth is a product of poor nutrition often have difficult labour and is associated with a higher risk of VVF and other fistulas hence, a cesarean section becomes a better option (Ozaltin, Hill, and Subramanian, 2010; Merchant Villar, and Kestler 2001; Kwawukume, Ghosh and Wilson, 1993).

Reproductive Status of Women: Reproductive history of women helps in determining future reproductive outcomes especially in cases of emergency. There are two extremes in the reproductive life of women; the young primigravida young girls and multigravida women who are older and approaching menopause. Women who belong to these extreme groups are often at a higher risk of obstetric complication (Santhya, 2011; Geidam, Audu and Oummate, 2011) In consonance with the above assertion, Ujah (2005) in his review revealed that teenage girls between ages 15 and younger and women above the age of 40 are at higher risk of maternal mortality and morbidity. Although most fistula victims are those who developed them in the course of first delivery, many victims developed theirs in

their later reproductive years after a couple of other deliveries; this may likely be as a result of subsequent increase in birth weight, nutritional factors influencing the pelvic structure and injury (Muleta, Rasmussen and Kiserud, 2010; Sjoviean *et al*, 2011).

Vesicovaginal fistula is likely to be more common in areas where early adolescent marriage is commonly practiced; in this situation, their reproductive organs are not fully ready for childbirth hence obstetric complications or even death (de Groot, Kuunyem, and Palermo 2018). Wall *et al.* (2004), in his study among 899 fistula victims in Jos, Plateau State, revealed that fistula victims were mostly younger women who were also victims of early marriage even before the onset of their first menstruation cycle. Respondents had a mean age of 14.5 years which was quite young ; among the victims, the means age at marriage (15.5%) also showed that many married quite early. 46% of the fistulas occurred during first pregnancies most likely as a result of pelvic bones that were not matured enough to go through the rigor of childbirth. The pelvic capacity takes years to mature; hence, early infliction of pressure on the pelvic bone due to early marriages practices predisposes women to VVF (Moerman, 1982).

Access and Utilisation of Health Care Resources: The importance of timely access and utilisation of modern health care cannot be overstated. When access and utilisation is limited, the rate of mortality and morbidity is likely to increase. VVF occurrences are mostly cases of delay in seeking medical attention especially in emergency situation such as obstructed labour; thus timely access is crucial to the reduction of fistula. The Nigerian health care system is replete of challenges ranging from poor funding, dearth in infrastructure, dearth in health personnel, lack of accessible health facility, lack of adequate health information and so on (Ajilowo and Olujimi, 2007; Efe, 2013; Odu, 2013). Also the use of modern health care facilities for the purpose of delivery is very vital especially when complications surfaces. In Nigeria majority of the deliveries take place outside these modern facilities with high rate of home delivery (NPC, and ICF International, 2019; NPC and ICF International, 2014; Dada, 2005). This can be attributed to the poor conditions of health services and also the Maternal and Child Health (MCH) programmes, poverty and cultural beliefs. Even when patients desire the use of modern health services, the availability becomes a barrier; for instance, the knowledge that a woman's labour is obstructed and help

is needed cannot in itself prevent fistula but availability of accessible health facility with competent personnel must be put together to prevent fistula especially in rural areas.

Studies continue to reveal issues of prolonged labour at home, low rate of antenatal use, childbirth in homes among women who later develop obstetric fistulas (Sjoviean *et al*, 2011; Muleta, Kiserud and Rasmussen, 2010).The role of adequate involvement of women in antenatal care programs cannot be overemphasized; this is so because it is associated with better pregnancy outcomes. With antenatal visits, women are better educated and aware of fistula hence; take precautionary measures to curb its prevalence. Also it helps reveal warning sign of risky pregnancy and prompt solutions provided (Balcha, Nigussie, Beyene and Tesfu, 2020). The low rate of antenatal visit increased during the Covid 19 pandemic; many "non-crucial" health services were postponed which led to the reduction antenatal visits (Kotlar, Gerson, Petrillo, Langer, and Teimeir, 2021).

A study revealed that in 118 Low income and Middle income countries, the reduction in antenatal visits was estimated to at least 18% and possible up to 51.9% (Roberton *et al.*, 2020). The reduction was also due to general mistrust of health workers, lack of transportation, pressure from family to isolate due to fear of the virus (Aryal, and Shrestha, 2020). The reduction in these visits may likely make risky pregnancies go unnoticed hence possible complications. Harrison *et al* (1985) submitted that high mortality rates, low birth weight and prenatal deaths were recorded due to lack of antenatal and prenatal care among women who had poor or no formal education. But the case was different with lower mortality rates among women who were more educated and received antenatal and prenatal care. Raji, Hassa and Yusuf *et al.* (2018) reported that most of the patients of VVF studied did not receive any form of antenatal care which is important and a determinant for good pregnancy outcome. Accordingly, one of the main reasons of maternal issues, aside from the social and economic factors that influence the condition of VVF, is poor attitudes of women regarding ANC visits where pregnancy abnormalities could have been identified and avoided.

2.3.3 Direct Determinants

This has direct impact on the patient and determines the outcome when labour becomes obstructed. Factors under this category include: degree of fetopelvic disproportion, level at which labour is obstructed, force of uterine contraction, extent to which labour is obstructed and the quality of care given to this women when difficulty in labour is diagnosed.

Degree of Fetopelvic Disproportion: This is a biological and direct cause of obstructed labour; it is a condition where the fetus finds it difficult in passing through the birth canal despite adequate level of contractions (Neilson *et.al*. 2003). In other words, there is a disproportion between the fetus and the pelvic; usually as an effect from a big fetal head with smaller birth channel.

Level and Nature of Obstruction: There are three pelvic locations; the pelvic inlet, mid pelvis and the pelvic outlet. The level and nature of obstruction depends on the location labour becomes obstructed during childbirth (Elkins, 1994). For instance, labour that becomes difficult at the lower pelvis affects the urethra and bladder neck than that which occurs at the pelvic brim (Browning, Allsworth, and Wall, 2010).

Force of Uterine Contractions: The force of the uterine contraction refers to the energy and forces that propels a fetus through the birth canal of a woman. A labour can become prolonged if the labour is not efficient. The uterine contraction determines the level of force exerted on the fetus and the entrapped tissues when labour is obstructed. The level of force varies from pregnancy to pregnancy in any individual labour (Wall, 2012).

Duration of Obstructed Labour: There is limited number of possible outcomes when labour becomes obstructed. First and ideally, obstructed labor is often detected shortly after it surfaces and method of delivery changed as quickly as possible usually by doing a cesarean section; in most cases a positive outcome is achieved with mother and child staying alive. On the other hand, when obstructed labour is not handled promptly and lingers for days (mostly due to delays in seeking emergency obstetric care), the fetus may die and the mother may most likely develop a fistula (Hilton, and Ward, 1998; Wall *et al,* 2004; Muleta, Rasmussen, and Kiserud, 2010; Sjoveian *et al,* 2011).

Quality of Care after Obstructed Labour: Obstructed labour in itself does not solely determine fistula outcome but is largely dependent on the level of care a woman receives in the process and after delivery. Prompt decompression of over-distended bladder, good nutrition, adequate drugs prescribed etc will let bladder injury heal before it crosses its threshold and forms a fistula (Kongnyuy, Mlava, and van den Broek, 2009b).

People's environment is said to influence their health patterns. Thus, this study seeks to investigate the determinant of VVF in two regions. Factors influencing VVF may differ in the two regions; hence this study wants to investigate the similar and varying determinants that can influence VVF outcomes; results will enhance proper intervention.

Several studies have identified risk factors to VVF such as: Swain *et al* (2020), who carried out a population-based cross-sectional study among married women of reproductive ages (15-49) who have had a life or still birth or at least one abortion (proven fertility) in the eastern rural community of India. The study aimed at estimating the prevalence of Obstetric Fistula (OF), determining its risk factors, knowledge and health seeking behavior towards fistula. The study was carried out in duration of 26 months among 3939 women with the aid of a pre-screening interview schedule of fistula which comprised of only close-ended questions. Study revealed about nine factors which were significantly associated with developing OF; education, family monthly income, parity, ANC, place of birth, distance to nearest health facility, labour duration, traditional method and planned moves towards delivery.

Results from analysis revealed that participants who had no formal education and those with some/complete primary education (AOR =3.89 and AOR = 2.86 respectively) were more at risk of developing OF. Families who earned less than Rs.5000 monthly were more susceptible to fistula than families who earned higher. In this study, women who have had more than two births (AOR = 2.51) were more vulnerable to OF and respondents who have undergone one or more abortions (AOR = 2.04) were significantly at risk of developing fistula. The study further emphasized the importance of ANC visit by revealing that women with no ANC or very few visits are more likely to fall victims of fistulas (Swain *et al*., 2020). This suggests that women's income and level of education are significant predictors

of the factors that influence VVF. In comparison to women from high socioeconomic position, individuals from low socioeconomic status or poor families with low educational attainment are more likely to lack awareness about VVF prevention and be at risk of developing it.

Similarly, where a woman gives birth is an important determinant of fistula outcome. In this study, home delivery (AOR = 4.38) was one of the major risk factors to the development of fistula. This was likely due to distance to the nearest health facility from their place of residence and the patronage of TBAs who have inadequate skills and less knowledge about the fistula risk factors and obstetric complications. While distance to the nearest health facility was documented as a risk factor (2 hours walk to the nearest facility = AOR = 1.7), the study also revealed that planned moves such as knowing when and where to deliver was crucial in reducing the incidence and prevalence of fistula compare to those who had unplanned moves (two or more moves) AOR = 2.49 were more prone to fistula. The study concluded that addressing socio-demographic factors (education, income, residence among others) will contribute to the reduction of obstetric fistulas. Also adequate training should be given to health workers on early identification of risk factors and adequate referral should be done as at when due (Swain *et al*., 2020). Many of the patients in the Plateau and Ebonyi states may have been predisposed to VVF risk due to similar conditions identified in Indi. This is due to the fact that many healthcare facilities in less developed countries are typically situated in areas where patients must travel long distances before receiving medical attention. There is a chance that many of the patients would transfer haphazardly to contemporary medical centers where urgent medical conditions can be treated.

Onyuego *et al* (2019) conducted a hospital based study which was retrospective in nature to determine trend of VVF in Kano state. The study included predisposing factors to VVF and considered attendees in fistula centers from August 2018 to February 2019. Data collecting guide and a semi-structured questionnaire were adopted for data collection. Results showing socio-economic factors revealed that about 32% of the attendees were below 18 years of age, 40.4% were between ages 19 and 28, attendees between the age of 29-38 and 29-48 were 18% and 8.4% respectively. The age of respondents as shown above depicts issues likely relating to early marriage, early age at first birth and VVF due to first

birth (primiparous). A huge majority of the respondents were housewives (76.4%) with only 2 % as civil servants indicating that most of them were totally dependent on their spouses, about 57% of them were resident in rural areas, and 84% had an income of less than 18000 indicating that most of them are financially disadvantaged. In terms of education, majority (67.6%) had Quar'anic education, 10% had no formal education, primary, secondary and tertiary education were 15.6%, 6.4% and 0.4 % respectively.

Obstetric factors recorded include; prolonged labour (72.8%), early pregnancy (23.3%), FGM (0.4%), *gishiri* cut (3.6%). Reports pertaining to duration of labour shows that more respondents (44.8%) labored for 4 to 5 days, those who labored for 1-3 days accounted for (40%), only about 14% labored for less than 24 hours; this is likely because they stay so long at home or try other birth options such as TBA. Findings from the study revealed a statistical significance relationship between respondents socio-economic and demographic variables and the development of VVF ($P<0.0001$); factors showing significant relationship are education, occupation, income level, place of residence , place of delivery (TBAs), duration of labour, birth attendant present during delivery, early marriage, prolonged labour, 'gishiri' cut and FGM. Majority of the respondents perceived hospital delivery as a sign of weakness and associated home delivery with the help of a traditional birth attendant as a sign of strength. The study recommended the need to monitor the predisposing factors accountable for the increase in VVF prevalence rates and government should deliberate on a scheme that will enable a functional home antenatal care and educate women and TBAs on the associated risk factors.

Greenspan *et al.* (2019) studied the role of men in care seeking of maternal and new born health in Morogoro region of Tanzania. It was a qualitative study which applied the three delay model to male involvement among the study population. Data was collected using a semi-structured interview guide among 27 male respondents and considered their experiences of care seeking during pregnancy, delivery and postpartum. Respondents were included in the study on the basis that their wives gave birth without complications and excluded men whose wives experienced complications. Results showed that majority (63%) of the respondents had completed primary education and lived quite far from the closest health center (55.6%). Notwithstanding majority gave birth to their children in a health

facility (82%). Results were analyzed based on the three delays which are: recognizing a need to seek care, reaching facilities, and receiving care at health facility.

In recognizing the need for health care, results showed that during spousal decision making, the respondents categorized themselves as the head of the household and the final decision makers and felt responsible for the health of their family members. However, they lacked knowledge about certain things such as if and when to seek medical care and therefore resorted to seeking information from others in the community. One of the respondents stated that:

> He discusses and agree about seeking medical care with his spouse but the final decision rests on his shoulders and because she is no longer under the care of her parents, he will have to take full responsibility and seek help when it becomes difficult (Greenspan *et al.*, 2019, p. 13).

The respondents acknowledged the importance of facility-based care because of the availability of services such as vaccinations, antenatal care, test, counseling and prevention of pregnancy complications. Another respondent accounted that "when his wife was under labour, a 'qualified' TBA was present but insisted on facility delivery to avoid complications and future problems" (Greenspan *et al.*, 2019, p. 14). In this study, the men played their role as decision makers positively but in a situation where their decisions were not favourable to seeking proper medical care, issues such as maternal morbidity (VVF), maternal and child deaths may arise.

Based on men's role in ensuring family gets to the facility, few acknowledged they accompany their wives to the facilities for mostly non-routine visits such as childbirth. Some other respondent stated they could not forgo their activities (farming, building, preaching) that generates income and follow their spouse to the facility, but make an alternative arrangement for their partners such as providing transportations, finding someone else to follow her or she seeks care on her own. One of the respondents stated that: "He has so many other commitments and do not have the ability to take her to the facility and then still be able to do his work…she is used to seeking care by herself" (Greenspan *et al.*, 2019, p. 15). Factors challenging access to health services as documented in this study include,

location of health facility especially during the rainy season; during this season roads and river crossing becomes difficult and it increases the cost of transportation. Also distance and lack of funds were also factors influencing access. These factors may likely increase the rate of home deliveries and low patronage of antenatal care.

In terms of ensuring that care is received at the facility, they ensured they provided funds for drugs and other supplies needed. Results showed that respondents questioned the restrictions of men at facilities and stated that public facilities lack necessary supplies. A man stated that:

> The doctor responsibility is just to write prescriptions after which you will be told the drugs are not available; it is to be gotten from a pharmacy. This means one can only be treated if he has money if you don't you will not be treated because drugs in the facility are supposed to be free or for a little token due to our yearly contribution for that purpose but are not available (Greenspan *et al.*, 2019, p. 17).

Challenges to receiving adequate care as documented in this study include, dearth of staff, drugs, long waiting time, inexperienced providers and closure of facility at night hours; this factors can be a problem in emergency situations such as obstructed and prolonged labour or other emergency situations thereby leading to maternal and child morbidity or mortality which could likely be the case for women who experienced complications but were not included in the study.

The study concluded that despite the barriers to health seeking, men supported facility based care and advocated for improvement of public facilities and recommended that men should be more educated about maternal health; its danger signs and ways to prepare for childbirth and unforeseen complications. The study focused on respondents whose wives had deliveries without complication however, accounting for those who experienced complications may likely be more revealing about men's role in such situations, how the three delay model will play in and factors surrounding such complications.

Raji, Hassan, Yusuf, Yusuf, Ahmad *et al*. (2018) carried out a hospital-based study on the knowledge and effects of VVF. The study also ascertained respondent's satisfaction in

relation to VVF repair services in North Western Nigeria. A structured interview questionnaire was adopted for data collection among ninety-nine (99) VVF victims receiving care in the facility. Findings revealed that most of the respondents had no formal education (83.6%) and were mostly housewives. Early marriage was evident among the study population with about 84.8% of the participant being married before the age of 18 years with a median age of marriage of 15 years. Results further revealed that most (80.8%) of these young women give birth to their babies at home with very low ANC patronage (73.7% did not attend antenatal at all). This poses grave danger because identifying risky pregnancies will be difficult hence possible complications and even maternal death.

The study also showed that respondents knew that home delivery and prolonged labour with 63% and 86% respectively were risk factors to vesicovaginal fistula. However, majority (67%) of them seem not to agree that delivery by TBAs could predispose them to VVF; this could be due to the fact that almost all the women (93.9%) were rural dwellers where TBA patronage is high coupled with situations where other women in their communities have had delivery by TBAs without complications. Similarly, half of the respondents did not perceive female genital mutilation as a risk factor which is likely due to lack of knowledge about FGM; findings from NDHS (2018) showed that only about 13.7% of women in Sokoto have heard about FGM that is to say 76% are ignorant about it. The study concluded that girl child education should be promoted and government should consider education free up to secondary level. This study demonstrates that the majority of women who had VVF are under-aged, and their physiological characteristics are not yet fully formed to sustain pregnancy without experiencing difficulties that could later result in maternal mortality. And to make matters worse, the majority of them use TBAs for their deliveries.

Maheu-Giroux *et al.* (2016) carried out an analysis of household survey data which was pooled up from 27 surveys in available demographic and health surveys (DHS) and multiple indicators cluster survey (MICS) that included vaginal fistula carried out in SSA between 2005 and 2014. The analysis included responses from 334,606 women and those who reported ever having VF symptoms among them were 2,048. Logistic regression models were adopted to assess the effects of the risk factors on the prevalence of VF in the long run. Results indicated that about 38.6% of women could read; a woman's ability to read a

card given to her was translated as being literate. Twenty-seven per cent of the women had completed post-primary education, 42.2% had experienced FGM, those with height below 150cm were 8.7%, about 11.0% of women who were sexually active had their first intercourse before the age of 14 and 3.8% of both primi and multiparous women had their first birth before the age of 14. In terms of seeking permission before seeking healthcare, 18.3% of the women recounted that it was difficult and quite a problem for them obtaining permission to seek medical attention. Indirectly, a woman's husband's disapproval of her use of modern medicine may have an impact on the development of VVF. This is primarily a social environment attitude, but it has an impact on a woman's behaviour while seeking out health care. This is typical of patriarchy society where the husbands are the decision takers in all matters that affect women, which may portend to serious dangers to the health of mothers.

Further analysis of the study also showed that ability to read and completion of some post-primary schooling reduced the chances of VF by 20% and 21% respectively; literacy and education in their analysis was interpreted as the direct effect on VF without controlling for gravidity. Women who were short in stature had 31% chances of VF than their taller counterparts. Among women who were sexually active, the odds of VF for those who were active sexually before the age of 14 were 41% higher than those who became active in older ages. Age at first birth before age 14 increased the probability of having VF by 39% than those who had their first birth at older ages. Risk factors identified in their analysis include: literacy, education, age at first birth, FGM, height, sexual activeness, permission to seek health care. Marital and socio-economic status was not analysed in their study because it was tagged a likely cause or an effect of VF. They recommended universal access to sexual and reproductive health and adequate efforts should be channeled towards girl child education and women empowerment. This result suggests that women who are predisposed to VVF may be affected not only by being under-aged or their underdeveloped physiological characteristics, but also by their low educational attainment, which may act as a mediating factor in the cause-and-effect relationship between socio-demographic factors and VVF.

Again, Johnson (2015) in her cross-sectional descriptive community-based study sought to identify the predisposing factors influencing VVF among 384 women of child bearing ages in Ebonyi Local Government Area of Ebonyi State. Data was collected using a semi structured questionnaire. The study revealed that about 68.8% of the respondents were between ages 25-34 and 22% were 15-24 years old. While 37.1 %, 23.8% and 22.8% had primary, secondary and no formal education respectively, 78.5% were unemployed. 80.4% were married. The study further revealed that over 80% of the women were aware of VVF, about 60% of respondents got married before the age of 25, 76.2% of the population under study attended ANC, 75 % stated they will not circumcise a girl child. The study was divided into two sections. While the first section comprised age, education, marital status, and employment status (demographic variables, which are also distant factors to VVF); the second segment included predisposing factors such as awareness (ignorance), antenatal care, means of transportation during labour, FGM, and age at marriage. In this sense, the socio-demographic charcteristics were used to identify the risk factors for VVF. On the other hand, while the first segment acted as the independent variable, the second served as the dependent variable to test for relationships.

Results from the statistical relationships pointed out that respondents across the various socio-demographic characteristics had some level of awareness about VVF but at varying levels; of all the variables, awareness about VVF was statistically significant to respondent level of education and their employment status. That is to say ones level of education and employment status is proportional to her level of VVF awareness. When ANC visits were considered, results showed higher ANC visits among the educated and employed respondents than their uneducated counterparts. Also FGM was most unlikely among the educated and those who were gainfully employed. Age at marriage was not statistically significant with the variables. Perception on early marriage showed an association with employment status; this is likely because they can afford to take care of their children's needs such as education, food, etc. hence, poverty seem to be a factor leading to early marriage.

The study concluded that political, economic and social determinants that underline poverty are the root causes of VVF. Both education and poverty have a strong influence on VVF

outcome. They therefore recommended health education, economic liberation, girl child education among others. This indicates that none of the affected women had a single independent cause of VVF. In a way, it implies that there must have been an underlying economic component in relation to a political aspect even though a specific social factor predisposes a woman to the condition of VVF.

Barageine *et al*. (2014) documented the risk factors to obstetric fistula in Western Uganda by carrying out a hospital-based case control study which compared background factors of women with obstetric fistula (OF) and women without OF (controls). A face-to-face interview method was adopted for data collection from 420 women (140 victims and 280 controls). At the bivariate level of analysis, results showed that women and/or spouses with higher education (OR = 0.30 and/or OR = 0.32) were less likely to fall victims of VVF when compared to the less educated respondents. Women who were income earners (OR = 0.35) were less likely to develop VVF than housewives, but peasant farmers (OR = 2.08) were more susceptible to developing OF when compared to women in other occupations. With a median distance of 17.5km for the cases and 5km among controls, the study significantly showed that more of the victims of fistula lived quite far from the nearest emergency obstetric care center. The factors with p-value ≤ 0.10 at bivariate analysis were entered at multivariate analysis. Among the risk factors that were significantly associated to fistula development in western Uganda, caesarean section (AOR = 13.30) accounted for more of the fistula cases among the respondents which resulted from atrogenic complications.

While respondents who are at risk of developing fistula are those with body height of 150cm and less (AOR = 2.63), women who had any post primary level of education (AOR = 0.31) were less likely to develop of when compared with women with no education. Prolonged labour was also a risk factor (AOR = 1.06). The weight of the baby (AOR = 1.52) was associated with developing fistula among Uganda women. Other risk factors documented in this study include: parity which indicated that women are more likely to develop OF in their first pregnancy (primiparous) than women who are multiparous. Furthermore, women who did not attend ANC were at more risk of obstetric fistula (AOR = 2.04). The study revealed that the use of herbal medicine during labour is also a determinant and the duration of labour is very crucial to whether a woman will likely develop OF or not. Women with

cases of fistula recorded a median duration of 21 hours compared to the controls whose median duration was 12 hours. The study concluded on the note that there is need for improvement in obstetric care at different levels to avoid prolonged labour through proper health education, improve skills of medical officers and midwives through proper supervision and training. Sensitizing community members on risk factors should be implemented.

Tahzip (1983) in his study analysed 1443 VVF patients (from year 1969-1980) who have undergone correction in Amadu Bello University Teaching Hospital Zaria based on their obstetric history, social and environmental settings; his work showed that 83% of VVF cases was due to prolonged labour which often gets obstructed, '*gishiri'* cutting accounted for 13%. The study accounted high proportion of young 'girls' (33%) who were under 16 years of age and 52% of the victims were primiparous whose cases were more severe (they had both VVF and recto vaginal fistulas). But women over 30 years had greater incidence rates of VVF alone without recto vaginal fistula. The study reflected higher rates of obstructed labour in young and immature women with about 6% of the below the age of 13 and women with low levels of education. Results in his study depict that early marriage, harmful traditional practices and poor educational level makes women and girls vulnerable to VVF. Age at first birth influences the incidences and severity of VVF; girls who are young and immature will likely fall victims to VVF than their older counterparts. He therefore recommended that later marriage, eradication of certain harmful traditional practices, education and sensitisation about referrals will help in preventing incidences if fistulas.

Ampofo *et al*. (1990) carried out a retrospective study of 241 VVF cases and 148 women without VVF (controls). The study reviewed 2 years records of VVF patients in tertiary hospitals in Maiduguri. Factors associated with VVF included prolonged labour (75.9%), *gishiri* cut (6.2%). Early marriage for VVF patients was also significantly related to VVF condition. Of the total cases reviewed, more than 26.9% occurred in girls aged 15 years, 58.8% in women aged 18 years. This indicates that issues such as early marriage and early age at first birth are linked to VVF, implying that cultural factors are involved. Again, early marriage is a cultural phenomenon that is prevalent in some parts of Nigeria (Save the

Children Nigeria, 2016), and it has a significant impact on childbirth and, as a result, the occurrence of VVF becomes inevitable.

Ampofo *et al*. (1990) discovered that anthropometric parameters, such as the height of VVF patients, have an impact on the prevalence of VVF in addition to the cultural factors already mentioned. In his research, it was found that 37.1% of the controls and more than half of the responders (51.9%) had heights under 150 cm. Despite these findings, the authors call for formal education to reduce the number of pregnancies among females under the age of 18. There is a case to be made for the connection between anthropometric and cultural factors in terms of VVF predisposing factors. This is due to the fact that these elements are consistent with the risk factors over time that have been identified by previous research (Tahzip, 1983; Barageine et al., 2014), which include age at marriage/early marriage, education, prolonged labor, FGM, *gishiri* cut, height, duration of labor, income, parity (primiparous/multiparous), place of delivery, and distance (residence to health center). While early marriage for girls under the age of 18 may be influenced by cultural reasons, it is certain that anthropometric factors like height and early pregnancy, which affect VVF, will also be influenced.

2.4 Perception of Vesicovaginal Fistula in Sub-Saharan Africa

Lack of or low level of awareness of VVF, particularly in Africa and South East Asia, can be ascribed to victims not disclosing their ailment out of shame and concern for stigma. The effectiveness of initiatives designed to reach the majority of women who are at risk of developing vesicovaginal fistula is also related to the amount of awareness about VVF (Morhason-Bello, Kareem, Abdus-Salam, and Bello *et al*., 2020). Despite a slight improvement in awareness of fistula from reports in the NDHS 2008 (30.7 per cent) and NDHS 2018 with 31% (NPC, and ICF International, 2019), it is nonetheless worrisome that younger women, who are more likely to experience VVF than older people, are still largely ignorant about the condition. Not all people who are aware of VVF have sufficient awareness of the problem. Even VVF victims have limited knowledge of the condition; the causes, treatments, and preventive measures for vesicovaginal fistulas appear to be

misunderstood by many people (Changole, Kafulafula, and Sundby *et al*., 2019; Animut, Mamo, and Abebe *et al*., 2019).

The cultural views of the populace may influence how individuals perceive what causes VVF. According to literature, witchcraft, punishment for adultery, sexually transmitted infections, heredity, co-wife manipulation (in the case of women in polygamous households), and idleness during labor are among the causes of VVF. Only a small number of women ascribed the cause to pregnancy-related issues such as inadequate nutrition, labours that lasted too long, and a lack of medical services among others (Morhason-Bello, Kareem, Abdus-salam, Bello *et al*., 2020; Nsemo, 2014; Emma-Echiegu, Okoye, and Odey, 2014; Okoye, Emma-Echiegu, and Tanyi, 2014; Kasamba, Kaye, and Mbalinda, 2013; Umoiyoho, and Inyang-Etoh, 2012). Many patients didn't find out the true causes of VVF until they spoke with medical specialists, and a small percentage of them still cling to their preconceptions.

People's beliefs about the causes of VVF may have an impact on how it should be handled. In other words, a faulty understanding of the origin of VVF can result in a faulty understanding of how VVF should be treated. The misconception about treatment options is likely to be impacted by the limited awareness of VVF. For example, one who believes that VVF is caused by the sin of infidelity may likely believe that there is no cure for VVF. The use of herbal remedies and the assistance of conventional healers are examples of forms of treatment as viewed by people in literature. Some people also thought it could be treated in hospitals, while others claimed there was no cure (Umoiyoho, and Inyang-Etoh, 2012; Kasamba, Kaye, and Mbalinda, 2013; Emma-Echiegu, Okoye, and Odey, 2014). Reduced poverty, parental education against early marriage and using daughters as a source of income, education for girls, sex education, and prompt and appropriate medical care are some of the perceived preventive approaches (Morhason-Bello, Kareem, Abdus-salam, Bello *et al*., 2020; Kasamba, Kaye, and Mbalinda, 2013).

This means that the type of the care and support that VVF patients receive from significant others is also influenced by the perceived cause(s) of the illness, even if treatment pathways for VVF are implicated in how patients and their family members see the condition. It,

therefore, makes sense that many patients try a variety of treatment options, from natural remedies to conventional medicines, before turning to medical specialists. It should however be noted that the inability of VVF patients to act quickly and seek medical attention from qualified healthcare providers suggests that the condition is becoming worse.

2.5 Prevalence of Vesicovaginal Fistula

The prevalence of Vesicovaginal fistula (VVF) among all girls and women at a certain time in a specific society is measured. It is difficult to produce accurate estimates of the actual prevalence of Vesicovaginal fistula in Nigeria due to a number of variables. While the lack of community-based research is a problem, stigmatizing VVF patients makes it more likely that the condition will go unreported; as a result, it is challenging to get reliable data that is necessary for classifying the condition as endemic. Additionally, it could perhaps affect how accurately policies are developed (De Ridder, 2009; Kabir, Iliyasu, Abubakar and Umar, 2003). The predicted annual incidence of VVF is 2.11 per 1000 births (Ijaiya, Rahman, and Aboyeji, 2010). This refers to a higher proportion (40%) of African women who have VVF (UNFPA, 2003).

In 2011, Sunday-Adeoye, Okonta and Ulu recorded a VVF prevalence rate of 43.4 per 1000 deliveries which was higher than previous rates recorded in other states in Nigeria; Harrison (1985) reported 3.5 per 1000 births in Zaria, Ijaiye (2004) reported a prevalence rate of 1.1 per 1000 deliveries, also in Zaria which revealed a decline in the prevalence rate (Ijaiye, 2004). The relatively high rate recorded in Ebonyi was due to the fact that the fistula center serves as a referral point for many states within and outside the region (Sunday-Adeoye, Okonta, and Ulu, 2011). The use of hospital records in ascertaining prevalence rates of VVF may likely not depict the actual rates of VVF for each state and Nigeria as a whole; this is so because a VVF victim can visit two fistula centers within a year and it will be recorded separately hence giving an erroneous prevalence rate.

Data from the National Health and Demographic Survey showed obstetric fistula prevalence rates without separating the rates based on types of fistulas and this was determined by women who have reported ever experiencing symptoms consistent with fistula. While the 2008 NDHS revealed fistula prevalence rate to be 0.4% with the northern part of Nigeria

constituting a higher number than their southern counterparts, the 2018 NDHS recorded less than 1% prevalence rate which was not shown separately (NPC, and ICF International, 2019; NPC and ICF International, 2009). This study seeks to record hospital and community-based VVF prevalence in Abakiliki and Ecwa Evangel Fistula Centers.

Onyeugo *et al.* (2019) in their retrospective hospital-based study in Kano state analyzed the proportion of VVF among attendees of all fistula centers from 2009-2018 in Kano state in other to ascertain its prevalence. Results showed an upward and downward movement over the years. In 2009 1,560 cases was documented and of that number, 332 were new cases bringing the prevalence rate to 54.7%. However in 2010 and 2011 the number of fistula new cases increased to 561 and 758 respectively with a VVF prevalence of 73.8% and 65.3% respectively. 2012 and 2013 recorded a slight decline in cases (423 and 360 new cases) with a total of 1876 and 1984 fistula cases with VVF prevalence rate of 52.0% and 50.3% respectively.

In 2014, the VVF prevalence rate dropped significantly to 46.0% however; in 2015 the state experienced a sharp increase of VVF cases with 77.2% prevalence rate. 2016 to 2018 documented a relatively continuous decline with a slight increase in 2017; VVF prevalence rates for the three years were 52.1%, 59.3% and 51.2% respectively. However, the trend shows an overall decrease of VVF prevalence in the ten years period. Factors that influenced high prevalence rates in the study were place of residence tilting toward rural areas, low educational level, poor income and traditional method of delivery. It suggests that improving the lives of women with respect to the factors listed will reduce the incidence and prevalence of VVF in Kano State and nationwide.

Adler *et al*. (2013) in a two stage systematic review which included the review of studies reporting on issues relating to fistula and vesicovaginal fistula. The review considered population based studies that captured estimates of incidence and prevalence of fistula. Results showed a prevalence rate of 0.29 fistulas per 1000 women of reproductive age in all regions reviewed. By region, 28,128 participants were considered with a prevalence rate of 1.60 fistulas per 1000 women in sub-Saharan Africa and 1.20 per 1000 women in south Asia. The review further reported that fewer than 1 per 1000 women in low and middle

income countries suffer fistula but when cases from Sub-Saharan Africa and South Asia was factored in, the figure rose to 1.57 per 1000 women of reproductive age. This shows that more of the burden of fistula is in sub-Saharan Africa and South Asia; of which prevalence rate of SSA is still higher than that of Asia. The study concluded that the reduced rates of VVF reported should not hinder the move to eradicate fistula completely considering the fact that it is highly preventable.

2.5.1 Perceived Causes of VVF

The causes of VVF differ, and what is believed to be the cause of VVF depends on who is making the claim: the patients themselves, traditional healers, religious figures, manufacturers of patented medicines, or licensed medical professionals. In other words, obstetric, spiritual, or cultural factors could be a cause for VVF. Based on their cultural and spiritual understanding of the causes of VVF, patients attribute unusual VVF to a variety of factors, such as "being cursed by the gods," "being born under the influence of an evil spirit," eating excessive amounts of certain foods, such as sugar, using public toilets, having a large family, succumbing to temptation, among many others (Raji, *et al*, 2018; Emma-Echeigu, Okoye, and Odey, 2014). Most patients who assign the causes of VVF to the aforementioned circumstances are probably unaware that it could also be caused by problems during childbirth, insufficient medical care, a lack of nourishment, etc.

Based on the soci-cultural environment, only a very small number of victims in Nigeria agree that obstetric factors like prolonged labor, obstructed labor, advanced cervix cancer, caesarean section, forceps delivery, infection, craniotomy, insertion of corrosive substances into the vagina, and female genital mutilation can cause VVF. Most of these cases are reported by medical professionals (Onyeugo, Chimezie, Nwufo, Sally, Udujih, and Udujih, 2019; USAID, 2015; Emma-Echeigu, Okoye and Odey, 2014; Ijaiya, *et al*., 2010; Shittu, Ojengbende and Wara, 2009; Wall, *et al* 2004). Most often, sufferers learn from medical professionals during their hospital admission what the true cause of VVF is and how to properly prepare for it (Hassan, and Ekele, 2009). But would the right information be retained while the wrong is disregarded? That is the case of many of the patients of VVF in Nigeria.

In their investigation on the causes of VVF using patient records and opinions, Onyeugo *et al*. (2019) found that the majority of patients (57.6 per cent) thought the condition was brought on by extended labor. Traditional birth attendants, female genital mutilation, the "*gishiri*" cut, early marriage, and lack of knowledge were each cited as causes for 27.6%, 4.8%, 4.4%, 2.4%, and 3.2 per cent of cases, respectively. However, according to the patient's hospital record, early pregnancy accounted for 23.3 per cent of VVF instances, whereas extended labor accounted for a higher percentage (72.8 per cent). The study participants' attendance at VVF clinics or stays in the fistula center can be ascribed to their knowledge of the causes of VVF. This supports the findings of the study by Daru, Karshima, Mikah, and Nyango (2011), which found that protracted labor accounted for 82 per cent of VVF cases, contrary to the patients' perceptions of the causes of VVF, which many attributed to cultural and spiritual aspects, with *gishiri* cut made up 2% of the total.

Another cause of VVF which is quite rare is sexual violence such as rape (traumatic fistula). In countries such as Ethopia, 1.2% cases of VVF in the past are caused by rape (USAID, 2015; Muleta, and Williams, 1999). Contrary to the case of Nigeria and other less industrialized societies where prolonged and obstructed labour and other obstetric factors are the major causes of VVF, hysterectomy is found to be the most common cause of VVF in more industrialized countries (Ijaiye *et al.*, 2010).

Indeed, level of education, age at marriage, economic status of women, access to competent healthcare, and good judgment are only a few of the variables that may have an impact on the cause of VVF as the case may be in Nigeria (Onyeugo, Chimezie, Nwufo, Sally, Obinna, and Udujih, 2019; USAID, 2015; Emma-Echeigu, Okoye, and Odey, 2014; Ijaiya *et al*., 2010). However, there is a chance that the prevalence and incidence rates of VVF will drop in Ebonyi and Plateau States where there are large incidences of the condition among women, if these variables are given significant concern among women at all levels of the society.

2.6 Pathways to Treatment

Health care systems put in place for the management of health related problems exist in every given society. In Nigeria, a variety of those health care delivery systems exists and has evolved overtime. First, in the traditional era, health care delivery was mainly the sole responsibility of the traditional healers who gained patronage from community members due their perceived vast knowledge and understanding of their environment (Adefolaju, 2014). This system still exists and is largely culture bound; it is influenced by the cultural values of the people and thus, varies from community to community. Just as it is with other health care delivery systems, the traditional systems consist of a variety of practitioners which include: herbalist, diviners, bone setters psychiatrist, birth attendant among others. This system has continued to enjoy patronage not only in rural areas where about 70% of the Nigerian populace reside but also in urban areas with better access to orthodox medical facilities which was later introduced as a result of the coming of missionaries and the colonisation of the society (Adefolaju, 2014; Alubo, 1995).

In Nigeria, the utilisation of spiritual healing in resolving health challenges is well known (Badru, 2001). This system is practiced alongside with the traditional and orthodox health care system (Owumi, Raji, and Aliyu, 2013). It is pertinent to note that health care services are also sought from western style agents such as patent medicine sellers and pharmacies. Often time, there is a simultaneous use of the above discussed systems by patients. Despite great opposition from the modern system to traditional medicine, the practice of traditional healing has not whittled down its patronage by the people because it is bound by their cultural values and stems from the understanding of their environment (Adefolaju, 2014). From the above discussion, the following are the available health systems available for individual use; traditional medicine, faith healing, orthodox medicine, patent drug sellers and pharmacist.

Jegede (2002) posited that treatment usually starts with simple home remedies; usually with a notion that the illness will go away, after which the patient may decide to utilize the services of traditional or modern medicine. His study further noted that over two-thirds of respondents revealed they attempted the traditional healing method before going to the

hospital. In consonance with this discourse, Gordon (2016) asserted that patients who chose a particular healing service (say traditional medicine) and later switched to another may have done that due to failure of the first health care system in curing their illness; when perceptions of the patient and his or her significant others regarding cause of illness do not support that of the healer; and when symptoms initially regarded as supernatural disappears.

Patients can also start seeking healing from the orthodox system and later make a switch either to traditional of faith healing. This situation may likely be as a result of failure of the illness in responding to treatment and also when symptoms cannot be diagnosed by modern medicine. For instance, when VVF persist over a long period of time and do not respond to treatment it ceases to be a normal illness and certain supernatural attributes may likely be attached to it (Gordon, 2016). In some cases, the change within health systems is gradual and involves a back-and-forth movement of patients across the health systems available to them (Federick, and Stephen, 2007). Perception of individuals about the seriousness of diseases influences their health seeking behaviour (Jegede, 2002; Federick and Stephen, 2007). Also the cost of treatment, its accessibility and the patient's knowledge about the effects of each choice of treatment can also determine therapeutic choices.

Literature has shown different perceptions about VVF; as a punishment from God. Some perceived it as being sexually transmitted (Okoye, Emma-Echiegu, and Tanyi, 2014). But treatment pathways of these victims have not been documented. Most of the treatments method documented is hospital based. This study seeks to explore other medical systems where victims sought healing and if they use different systems simultaneously. Sibley and Amare (2017) carried out a study in Ethiopia on illness recognition and care seeking for maternal complications of pregnancy and childbirth in two rural regions. The study was among adult women between ages 18 – 49 years who experienced bleeding or any complication. Twenty-two (22) mothers participated in the study and the report revealed that 17 of them had experienced excessive bleeding with five died from other complications.

Qualitative data were collected by collating illness narratives from affected mothers, caregivers and witnesses. For the dead mothers, witnesses and their caregiver prior demise served as interviewees. Findings revealed that mothers utilized several pathways to seek

care and their choices were informed by perceived cause of illness, perceived severity, place of delivery, decision makers. A mother who was reported to have died from headache was first taken to a health center before a bigger hospital for treatment. The choice of the health center as their first point of call was because they did not perceive the illness as serious, hence could be handled by the center. Of the five mothers who died, two attributed their illness to biological factors and perceived it as serious which informed the hospital as their first point of receiving treatment but died eventually (one eventually went back home then back to a private clinic i.e. hospital – home – private clinic). Three attributed their condition to evil spirit and initially did not think the illness was serious hence went back home and took between three to six steps to receiving care mostly moving between home, primary health centers and hospitals. One of the three mothers started from home to a health center then back home then to a private clinic back home again and then to the hospital where she eventually died (Sibley, and Amare, 2017). According to the authors, four steps were undertaken by mothers who died and these are stated as follows:

First, the hospital;
Second, the hospital – home – private clinic;
Third, the health center – home – health center – hospital;
Fourth, the health center – home – health center – health center – health center – hospital.

The study further revealed that of the seventeen mothers who survived, 9 sought orthodox care; among the nine, eight took one or two steps except one who took a total of five. Thus, it was indicated that they visited the following health facilities:

First, the hospital;
Second, the health center – home remedies;
Third, the home call-in (calling a traditional healer to their homes) – health center, and
Fourth, the home – health center – home – private clinic – home.

However, eight of the participants did not utilize any form of biomedical care but home care. Some while at home called in traditional healers for care while continuing with home remedies. The non- biomedical care seekers took these steps; Home – home call-in – home. From the pathways documented, it frequently showed that the mothers utilized home

remedies which may likely be influenced by place of birth; the study showed that 65% of the mothers gave birth to their babies at home. However factors that influenced proper health seeking were antenatal visits (where counseling and teachings were adequately provided), proximity and decisions by family members. Other factors that influenced the use of biomedical care include traditional practices that keep women in seclusion after child birth (‘*hamo*’), lack of awareness, means of transportation and funds. The study showed mothers ability in recognizing abnormal symptoms such as bleeding and seeking proper help. The study recommended reduction in barriers to health seeking and continuous health education and counseling on maternal complications. Findings from this study can be used in explaining treatment pathways of VVF victims because fistula is a maternal health complication mostly resulting from pregnancy situation and steps to treatment can be influenced by factors documented above.

Dempsey, Sripad, Sultana, Kirk *et al*. (2021) in their community and hospital-based study identified pathways to access service for pre-eclampsia and eclampsia in rural Bangladesh. A cross-sectional qualitative approach was adopted for the study. Twenty-two (22) survivors of eclampsia were interviewed based on live experiences and eight FGDs were conducted among married men and women in the community. Findings revealed a complex pathway often followed by women in Bangladesh which involves making numerous formal and informal contacts before receiving needed care. In some cases the formal health care systems was initially bypassed by these women for treatment but all made contacts with them either during antenatal, delivery or post-natal visits and ended in a tertiary formal health sector for treatment of eclampsia. At the onset or later during the complications, women who received treatment from formal facilities first sought care at the primary health centers and then to the tertiary hospitals. Results further revealed there was no singular pathway to health seeking as respondents combined staying at home with seeking treatment, sought advice from family and friends, went to traditional healers for care or going to formal health centers.

One of the participants first visited a traditional healer at the onset of complication in the course of delivery, as the complications lingered, she then went to a primary health center where she was attended to by a Sub-assistant Community Medical Officer (SAMCO) and

then to a different primary health facility then back to the SAMCO who attended to her previously. She finally went to a tertiary facility and delivered her child and complications cared for. The pathway followed by this mother shows a back–and–forth movements across different health care options with the aim that they will receive treatments required. Below are the steps taken by seven (7) respondents in seeking care for pre-eclampsia and eclampsia (during pregnancy, delivery and postnatal period):

First, traditional healer – SAMCO – another PHC – SAMCO – tertiary facility;

Second, advice from family/friends – home without receiving care - SAMCO (for ANC) - advice from family/friends – SAMCO – tertiary facility – private clinic – private clinic – tertiary facility – private clinic – tertiary facility;

Third, tertiary hospital

Fourth, tertiary hospital (made five contacts with the tertiary hospital);

Fifth, private hospital (for ANC) – SAMCO – family welfare assistant (FWA at a primary center – private hospital (delivery and complication) – SAMCO – tertiary facility;

Sixth, advice from family/friends – traditional healer (without ANC) – tertiary hospital – FWV at a primary facility – private hospital– primary facility – tertiary hospital.

Seventh, advice from family/friend – private hospital (ANC) – tertiary facility – primary facility – private clinic – primary facility - tertiary hospital.

The study revealed that the above pathways taken by these women were consistent among other women across the four (4) districts studied.

Factors that influenced choice of health care of respondents ranged from cultural factors, awareness about antenatal and postnatal care and insufficient equipment in facilities. One of the FGD participants disclosed that the primary facilities do not have adequate facility for measuring blood pressure. Another stated that only people who are economically solvent utilize private clinic as treatment in the primary facilities was classified as not good; dearth

of health providers and had no medicines in stock hence patronage of village doctors and traditional healers (*kobiraj*). Mothers/in-laws, female relatives, neighbors and friends were women's first source of information relating to pregnancy and childbirth. This has implications to pregnancy and childbirth outcomes because wrong information can lead to negative outcomes and even death. Most of the women were ignorant about signs and symptoms of various maternal complications which would have been taught if they attended antenatal care. But in this study women who attended ANC were rarely educated about complications from blood pressure and protein in blood. The study further showed that despite low knowledge about maternal health by men who tagged it as women issues, they were still sole decision makers as they are mostly the only financial contributors in the family. Mother in-laws and religious readers were also influencers of maternal health seeking behavior.

Similar to the study by Sibley and Amare (2017), the perception about the causes of eclampsia influenced victim's treatments pathways with a socio-cultural undertone. Results from FGD revealed symptoms were perceived to be outcomes from witchcraft or the will of God hence influences women to seek care from traditional healers before any formal health center. Also perceived severity of symptoms as documented in this study influences treatment pathways; symptoms such as swollen feet, dizziness, headaches and many more were tagged as normal pregnancy signs hence seeking care in formal facilities was not necessary but they suggest the use of traditional/spiritual remedies for the pregnant women such as holy water, herbs charmed amulets among others. A respondent accounted that her husband was willing to take her to the hospital but her mother in-law declined saying daughters of nowadays do not trust in Allah; in their days they do not seek care from doctors or hospital for delivery. But when her situation and that of the baby became serious or in a bad condition she consented to hospital care at the point it was too late.

This study revealed varied pathways shuttled by women and how several factors which were both enabling and constraining influenced it. The study concluded that women die from eclampsia as a result of utilizing one or more health systems and delays in seeking proper formal health facility. Seeking adequate maternal health care is a tasking process that is further complicated by the numerous players involved such as non-medical staff. The study

recommended adequate refurbishment of PHC which is often the only available facility in rural communities and also women should be granted autonomy to make decisions concerning their maternal and reproductive health with the support of their spouses. This study can also be used in comparing treatment pathways for VVF victims.

A qualitative community-based study carried out by Akeju *et al*. (2016) on the determinants influencing health seeking behavior of pregnant women in Ogun State, Nigeria revealed places women seek care during pregnancy, delivery and postpartum. Instruments utilized for data collection were FGDs and in-depth interview. Findings showed that respondents utilized multiple health care givers among the following; prayer houses, TBAs, modern health facilities and over the counter medications (OTC). The study reported most women patronize more than one provider; some respondents stated that utilizing TBAs or prayer houses does not stop them from registering in a formal health facility. The care provider they visit is dependent on their perception of the condition for instance; complications from pregnancies were taken to the female priest (*'iya l'osha')* who they believe has the power to treat it. The priest is either visited on the onset of the complication or when orthodox medicine is perceived to have failed. The choice of seeing a spiritual leader is because complications in pregnancy are believed to be from a supernatural origin hence supernatural intervention. Another instance is repositioning babies in the womb is done by TBAs.

Women in the study were said to have strong interpersonal relationship with traditional birth attendants such that after visiting modern facility, they still go to TBAs at intervals because they are more affordable and most times they pay for services after several months which will not be acceptable in government hospitals. Generally, the study reported the women resort to orthodox care when they perceive they are at risk such as childbirth complicated by prolonged obstructed labour. Factors influencing pathways as reported in their study include closure of health facility at night (women who ordinarily want to utilize modern facilities when issues such as labour comes up at night may not gain access due to closure), distance, funds, spousal decision making. Efforts should be put towards better education on the importance of timely and proper access to health care services in pregnancy situations.

Okafor, Sekoni, Ezeiru, Ugboaja, and Inem (2014) conducted a qualitative study on the locations women in southwest Nigeria seek prenatal treatment utilizing FGDs and in-depth interviews. The study found that while some women can only employ the traditional or orthodox procedures, others can combine the two at the same time. When using various providers, patients choose different days to see each one. For instance, if a modern facility's clinic day is on Thursday, patients will choose a different day to see a traditional healer. They have special reasons why they need to see a doctor; for example, problems with miscarriage prevention, "maridejo," "kaka," which affects children, and "kambutu," which affects pregnant women, were thought to be treated only by TBAs rather than in hospitals.

According to respondents, hospitals are better equipped to handle problems like post-date (after the expected delivery date has passed), labor weakening, blood pressure monitoring, ultrasounds, and protracted labor than TBAs are. This means that depending on her perceived health during her pregnancy and during childbirth, a woman may occasionally visit a hospital and traditional healers. As the researchers concluded, rural health clinics should offer free or heavily discounted maternal health treatments. Women should receive better education on how to obtain proper medical care, and the prevalent misperception about orthodox medicine in the study region needs to be addressed (Okafor *et al.*, 2014).

It may be inferred from the many research discussed above that there are alternative therapies to treating and managing health conditions in women. The perception of the sufferers or patients toward their health condition and the healthcare facilities plays a significant role in determining the various treatment pathways a patient chooses, even though it is true that a number of treatment and management pathways have been identified by various scholars. This suggests that pathways to treatment and management of health condition is dependent on the severity and perception of the condition. For example, patients are more likely to use modern facilities or a combination of both therapies if they believe their condition is spiritual in nature. Conversely, patients who believe their condition is merely a physical challenge are more likely to use only modern therapeutic regimen, rather than combining both traditional and modern medicines.

2.7 Care and Support in Maternal Health

Improved coping mechanisms among VVF patients have been associated with proper care and support from close relatives. While some studies indicated a strong link between social support and maternal health, there have been instances in which husbands, friends, and extended family provided the VVF patient with sufficient care and support, enabling the patient to manage her position well (Adeusi, Olujide, and Ebere, 2014). Others claimed that VVF patients didn't receive the attention and support they needed. Results showed that victims were left to fend for themselves after being dumped by husbands, friends, etc. (Okoye, Emma-Echiegu, and Tanyi, 2014; Ijaiya *et al.*, 2010; Wall, 2002).

Nsemo (2014) showed several factors that contributed to sufferers being abandoned, including smell, uncontrollable urine leakage, and sporadic leakage even after surgical repair. He claimed that the lack of care and support from spouses was a result of the sufferers' inactive sexual life. Because they did not receive the necessary support (emotional and financial), survivors reported trouble coping. As a result, many of them became withdrawn, depressed, and resigned to their fate, depending on charity and begging (Nsemo, 2014).

In a slightly different account, Okoye, Emma-Echiegu and Tanyi (2014) carried out a study in Ebonyi state, Nigeria on women living with VVF and their experiences while awaiting repair at the national fistula center Abakiliki. The study adopted the qualitative method of data collection among 10 women who were interviewed. The study revealed that almost all the respondents acknowledged they had adequate care and sympathy at the onset of VVF because their family members felt it would not take long to get treatment. But as the situation lingered, they began to experience withdrawal and getting blamed for their situation; the initial care and support they experienced was no longer as it used to be. One of the victims accounted that she did not receive care from her husband and was avoided. Respondents said they were avoided by spouses, children, relatives and friends. Some of the victims revealed they received support from their mother and other family members in other to cope with VVF. One respondent stated she stayed with her mother and she (the mother) supported her with everything including helping to sell her melon seed so she can

afford her basic needs. They concluded that family support is very crucial in the recovery process of VVF and it also helps in restoring dignity to the victims.

Women also get formal support from some Governmental and Non-Governmental Organisations (NGOs) to reduce the incidence of or eradicate Vesicovaginal Fistula through financial support for repairs and relief materials (Ijaiya *et al.,* 2010). Churches and the community also play roles in the care and support of VVF victims but underlying problem is the adequacy of care. This implies that even though the patient received care and support from the government, NGOs, religious organisations, among others, without receiving reasonable care and support from their husbands and relatives, there may still be intolerably negative consequences because close relatives are typically more likely to provide higher emotional stability than other groups in the society in African societies, including Nigeria in particular.

2.8 Consequences of Vesicovaginal Fistula

Vesicovaginal fistula is an abnormal situation leading to continuous leakage of urine; the leakage makes the victim live in a state of distress and uncertainties. Consequences of VVF will be discussed under the following headings: physical consequences, social consequences, economic consequences and psychological consequences.

Physical Consequences: Patients of VVF often go through physical discomfort because they will have to wear diaper or pieces of cloths to control leakage all the time. The continuous use of diapers/cloths leads to other medical problems such as genital sores, wounds, and pain which makes them uncomfortable (Okoye, Emma-Echiegu, and Tanyi, 2014; Muleta *et al*, 2008). Due to the smell that accompanies leakage, patients need to take their baths frequently to avoid smell and possible infection. Reports revealed that patients worried about their inability to keep clean and they usually wear ugly dresses because if they put on their beautiful dresses it will get soiled with urine in no time which makes them unhappy and devalued (Mselle, and Kohi, 2015).

Social Consequences: Women affected with fistula face series of social effects which include divorce and separation; they encounter these challenges because they do not meet

up with their sexual obligations to their spouses and in some cases do not bear children because of fistula (Raji *et al.,* 2018; Mselle, and Kohi 2015; Okoye, Emma-Echiegu and Tanyi, 2014; Ijaiya *et al*, 2010; Muleta *et al.,* 2008). Some divorce cases are instigated by their husband's relatives claiming VVF is untreatable hence cannot stay together forever. Sometimes their spouses do not eat their meals or anything served by their wives (VVF victims) because they feel irritated and imagine the urine must have entered their food (Muleta *et al.*, 2008). Patients are perceived to be useless when these obligations are not met; they therefore face rejection, abandonment, deprivation etc (Raji *et al.*, 2018; Mselle, and Kohi 2015; Okoye, Emma-Echiegu, and Tanyi, 2014; Ijaiya *et al.*, 2010).

Despite the high rate of divorce, rejection and abandonment experienced among VVF patients, few patients reported experiencing adequate support from their spouses and relatives (Morhanson-Bello, Ojengbede, Adedokun, Olalokun, and Okunola, 2011). Ijaiya, *et al* (2010) posited that women who did not face divorce or separation may likely not be allowed to share same bed due to smell from urine leakage (Mselle and Kohi 2015). Victims find it difficult to relate with friends and community member to avoid embarrassment. They do not participate in social functions; religious observances, funerals, parties and in some cases, even after repair they still find reintegrating difficult (Odu, 2013).

Economic Consequences: The economic consequences of VVF cannot be overemphasized. In the first instance, the prevalence of VVF is influenced by economic factors such that it is more prevalent among those with low economic status (WHO, 2020). After falling a patient of VVF, it has some economic consequences; sufferer lose their jobs, businesses fall due to inconsistences, some stop farm work and other paid menial jobs gets terminated (Raji *et al.*, 2018; Mselle, and Kohi, 2015). They become more dependent on others for survival and loose some level of freedom (Mselle, and Kohi, 2015; Gebresllase, 2014; Ahmed, and Holtz 2007). With the above effects, patients are likely to enter into worse poverty levels and begin to beg for funds and may indulge in prostitution in order to get their needs such as soap, wrappers, and diaper (Nsemo, 2014; Odu, 2013).

Psychological consequences: The constant leakage of urine keeps victims isolated hence building inferiority complex in them, they feel rejected, have self – pity and intimidated.

These feelings are aggravated by the lack of care and support from significant others (Mselle and kohi 2015; Gebresllase, 2014), victims who lacks knowledge about causes of VVF, care and treatment may likely lose hope and entertain fear on what the future holds which can lead to depression and low self-esteem (Ijaiya *et al.,* 2010). The above effect can influence victims coping strategies.

Okoye, Emma-Echiegu and Tanyi (2014) in their study on the experiences of women living with VVF and awaiting repair in Ebonyi state Nigeria, interviewed 10 women who were admitted at the fistula center in Abakiliki. Among the respondents interviewed, three (3) were still married and living with their husbands, two were never married (single), others were either divorced or separated. Five of the victims had lived with fistula for 12 years and more. The study revealed the women suffered varying consequences ranging from physical, emotional, economic and social. They were blamed for their condition as a respondent accounted that a neighbor asked her to confess her wrong doings in other to be free from this sickness.

Physically the patients suffered sores, painful blisters, irritation that cause itching around their genitals, burning sensation, and body pain. The sores and blisters limited their ability to walk long distances and adequately carry out their daily chores. One of the respondent stated that VVF makes her feel sick and the blisters hinders so many things they could previously do for themselves. Social consequences recorded include neglect from spouses, family and community members. Respondents who were married were not allowed to cook for the fear of urine entering the food and their husbands avoided sexual relationship with them. Respondents who lost their child(ren) did not only mourn the death but also had to fight for social acceptance and value in the society with many wishing they had died than living a life full of misery and lack of dignity and guilt. A woman accounted that VVF makes her to be avoided by community members like a leper and although her husband did not send her away because of her children, he avoids her like a plague. Another stated that she feel pained that her daughter put to birth but could not go for ‘omugo’ which is the pride and prayer of many mothers to go for. Some respondents had fear of getting reintegrated into the community even after repair and wished they could be given a certificate of healing to present in their various communities.

Funds for buying diaper, wrappers, soap was quite difficult and they had to resort in doing jobs far away from their communities; a respondent recounted that she had to start selling in another village where she was not known because if she sells in her village, no one will buy from her. The study concluded that reintegration is a major challenge for VVF patients and recommended a community based reintegration programme to help restore social value of survivors and vocational training should accompany VVF treatment. This study will be of importance to present research to compare results and since the study was carried out at the Ebonyi fistula center, it will check for changes or consistencies of effects experienced by VVF patients.

A hospital based qualitative study carried out by Changole, Thorsen and Kafulafula (2017) in the central region of Malawi using a semi-structured interview among 25 women with OF awaiting repair revealed varying consequences experienced by the patients. Results showed that all the participants entertained fears that people will humiliate, isolate and ridicule them should they discover their plight (anticipated stigma); this resulted to self-isolation and avoidance of social gatherings such as wedding ceremonies, religious activities, markets and other public areas which could lead to involuntary disclosure of their condition. Keeping their condition a secret due to fear can influence the prevalence and incidence rates of fistula, health seeking behavior of victims, treatment pathways victims follow and can even delay treatment. Some respondents had negative perceptions about themselves because of the reactions they got from friends following disclosure of their condition which led to loss of self-value, confidence and self-worth. One of the participants tagged her-self "as a person but not a person" because she feels a real person will not urinate or defecate on herself and people will call such a person crazy because it is abnormal.

While majority of the women remained married, seven (7) of the participants were abandoned by their spouses; the patients were not abandoned at the onset of their condition but when they perceived the condition as becoming chronic and having negative influence on their sexual relationship. They were also verbally abused by family member and relatives. The study concluded that patients suffered limited social lives due to anticipated stigma and recommended education on community level on the causes, prevention and treatment of fistula.

Raji, Hassan, Yusuf, Yusuf, Ahmad *et al*. (2018) carried out a hospital-based study on the knowledge and effects of VVF. A structured interviewer questionnaire was adopted for data collection among ninety-nine (99) VVF patients receiving care in the facility. Results showed that participants experienced emotional and social effects resulting from VVF. Most of the respondents reported they felt ashamed (84%), pained/bitter (60%), and sad (75%) due to their condition. Results further revealed about 36% of the patients' condition led to them being divorced by their husband, 17% stated that they were rejected by the community and 26% were avoided by the people around them. The demographic characteristics of the respondents in relation to their marital status revealed all the participants were once married at one point of their lives and of the total sample studies, VVF influenced their marital status negatively; 58.2% were separated, 38% divorced and 4% widowed. The study's instrument was quite restrictive and did not provide much exploration; respondents were only given options or brief answers. Although the instrument did not allow for it, respondents might have wanted to talk more.

The foregoing studies, which describe the impacts of VVF, indicate that these effects are complex in nature and foretell long-term consequences for the affected women. In reality, there is a great possibility that a patient may experience social implications (stench from smell and odor), economic burdens (as a result of medical care costs), as well as psychological effects (such as depression and being withdrawn) when they are subjected to physiological consequences. No effect is, in fact, isolated. Both begin to have an impact on the patient at the same time. If not handled properly, this can have further unanticipated effects. Although the findings from earlier research have given us insight into the possibility of VVF's effects on the patient, due to differences in the time and location of the studies, these findings may not be applicable to the situations of the two study settings. This necessitates empirical research on the problem in the two states.

2.9 Theoretical Framework

This section documents the theories adopted to explain the determinants, perception, prevalence and consequences of VVF within the context of the study domains. The

theoretical models adopted are ecological model of health and proximate determinant framework.

2.9.1 Ecological Model of Health

There are a variety of contemporary ecological models that have followed a progression from the idea that perceptions of environment was the only important factor (Lewin and Cartwright, 1951) to a wider focus that emphasises on the direct effects of environment on behavior (Barker, 1968). There are other models encompassing a wider scope which can be applied to health behavior and promotion, such as those opined by McLeroy *et al.* (1988), Stokols *et, al.* (2003), Flay and Petraitis (1994), Cohen, Scribner and Farley (2000), Fisher *et al.* (2005), Glanz, Sallis, Saelens and Frank (2005), and Glass and McAtee (2006). The emphasis of this model is on the environmental and policy contexts of behavior, but includes the influence of social and psychological factors on health behaviour.

The fundamental tenet of the ecological model of health behavior is that different levels of influence are exerted on behaviour. Intrapersonal influences include those those that come from within the individual, such as biology and psychology-related knowledge, attitudes, and beliefs; interpersonal influences include those that come from relationships (social and cultural; family, work groups, friends), as well as community, organisational, environmental, and policy levels of influence, which include rules and laws governing health behaviour (Glanz, Rimer, and Lewis, 2000). This framework provides a comprehensive understanding of the various levels of influence on health behaviour and how they interact. The foundational tenets of this model are four. The first is the multiple components such as social, physical, environment and intrapersonal factors that influence health behaviour, while the second is the environment itself, as a level of influence, which has several dimensions and influence behaviour across those dimensions. The third, is the different levels of aggregation that determines the interaction between humans and their environment, as well as the way humans and environment vary at individual, family, work, cultural and community levels, while the fourth is the interactions that exist across the various levels, which influenc feedbacks (Salis, and Owen, 2000).

This model's objective is to have an impact on interventions that seek to bring about change at various levels of influence. Individuals' health behaviours are anticipated to improve when the environment and policy support prudent health-related decisions, when societal norms and support for making healthy selections are sufficient, and when an individual's education level is high enough to influence a wise decision. Relatively, it is believed that when policies are implemented to encourage female education, discourage early marriage, and FGM, among other things, it is expected that the cultural norms and health behaviours that support healthy living while eliminating VVF would also be positively impacted in both Ebonyi and Plateau States.

However, health behaviours relating to VVF are determined by the different levels of influence interacting with each other; putting all these factors into consideration, the intrapersonal factors (biology, knowledge, attitudes, and perception of VVF) which influences VVF outcomes is seen. Individual and/or community level of knowledge about VVF can influence proper measures for preventing VVF. For instance, high level of knowledge about VVF among family members and the community can influence VVF prevention positively. Knowledge and perception of VVF can also influence people's attitudes towards VVF victims (interpersonal influence) either positively or negatively depending on if they have low, medium or high levels of knowledge or positive or negative perception.

The amount of care and support that will be provided can also depend on how others view those who live with VVF. Significant others may show little to no concern and support if VVF is seen negatively (for example, as a bad omen or a punishment for wrongdoing). On the other hand, a favourable perception (say as a result of a labor obstruction) can affect a high level of care and support. Treatment decisions made by VVF patients may be influenced by how they perceive the situation (intrapersonal impact) (treatment pathways). For instance, if the trauma is thought to have been spiritually caused, the sufferer may begin to look for spiritual help. Significant others play a significant role in the decision of the treatment course a VVF patient takes. The setting surrounding the sufferer is implicated in the short- or long-term successful management (as the case may be) of VVF; a supportive environment will probably result in better management. On the other side, a VVF patient's

capacity to effectively manage her condition can be impacted by an unsupportive environment. For girls and women who have VVF, adequate care and resources are required; this will improve their coping mechanisms. Health insurance policies, for example, have an impact on the resources and options accessible to VVF patients.

Although the ecological model of health is used as the theoretical basis because it explains the various levels of influence that exert on human behaviour in the environment, the model does not adequately explain the specific proximate determinants that may be having a direct or indirect impact on women's health behaviours to cause maternal mortality. In consideration of this theoretical vacuum in the body of knowledge, the proximate determinants framework is provided.

2.9.2 Proximate Determinants Framework

The proximate determinants framework by John McCarthy (1997) focuses on the central idea that specific factors such as biological, social, cultural, economic and environmental factors contribute to maternal mortality directly or indirectly, thereby affecting the chain of events that may likely cause mortality in women. McCarthy categorized these factors into two which are:

i. **The indirect or distant factors**: This category examines the impact of the overall socioeconomic environment, including women's status, family and community status, cultural beliefs and practices, etc., on maternal mortality.
ii. **The intermediate factors**: This collection of variables has a more immediate impact on a woman's likelihood of becoming pregnant and experiencing difficulties that could ultimately result in mortality. These determinants include women's health, their reproductive lives, and their access to obstetric care.

The categories listed above are not mutually exclusive simply because those interventions that are most likely to prevent maternal deaths quickly are those that have a direct impact on the intermediate situations of women. However, the success of these interventions will depend on whether or not the indirect factors for health care delivery and use create an enabling environment (McCarthy, 1997). All other factors that contribute to maternal deaths

are based on pregnancy. The majority of maternal deaths have been linked to complications from risky abortions, hemorrhage, and prolonged labour (McCarthy, and Maine, 1992). The explanation of VVF, which results from pregnancy difficulties, will be aided by the Proximate Determinant Framework.

As a result of pregnancy difficulties, vesicovaginal fistulas are affected by indirect and intermediate variables. The socioeconomic position of women, the status of their families, and the community all indirectly affect whether or not a woman may get VVF. This also takes into account the effects of early marriage and female genital cutting. These socioeconomic and cultural factors influence women's reproductive behaviors and outcomes directly through the intermediate determinants. The status of women and their family (education, income, occupation) may probably have an impact on their health and sexual and reproductive behavior. For instance, the likelihood of using ANC services is influenced by the status of women, family, and community, which may probably have an impact on the prevalence of VVF. Additionally, socioeconomic and cultural factors can have an impact on women's health status (nutrition, infections and diseases, and history of her reproductive life), access to modern health care (locations of health facilities for prenatal care and emergency obstetric care, the quality of care, and cost of care), and other factors.

Clinical negligence is also a factor that results in VVF. For example, obstructed labor is frequently identified as soon as it manifests and the method of delivery is changed as quickly as possible, typically by performing a cesarean section; in most cases, a positive outcome is achieved with mother and child remaining alive and experiencing no complications (Muleta, Rasmussen, and Kiserud, 2010). On the other hand, obstructed labour that is left untreated for days can result in the death of the fetus and the mother's development of VVF. This is typically caused by delays in seeking emergency obstetric care (Sjoveian *et al.*, 2011; Wall *et al.*, 2004; Hilton, and Ward, 1998).

This has a cultural undertone because in Africa and Nigeria, giving birth the "normal way" or natural way is something to be proud of. Traditions built phrases like "you are not a woman" since one couldn't give birth through the vagina, disregarding these women's reproductive status and prolonging labor. Women with low socioeconomic level or no

formal education are more likely to experience this social phenomena. In fact, poverty plays a part in this mindset of favoring natural deliveries even though the anthropometrics of the pregnant lady indicate otherwise. The technological and social environments, however, have a considerable impact on the practices that encourage behavior that results in either good or unhealthy reproductive behavior. This means that women's understanding and the social, technological, and educational environments in which they live have a significant role in shaping their health behaviours and the state of VVF.

Based on the categorized determinants that have been explained above, it is clear that they have an impact on situations that can result in VVF (including pregnancy, illegal abortion, obstructed labour, complications), and these conditions can also result in maternal and child mortality that could have been prevented with the appropriate information and access to health care services.

2.9.3 Conceptual Framework

The conceptual framework (shown in Figure 2.1) synthesises the ecological model of health and the Proximate Determinants Framework to describe how the study objectives and theories are related. The framework explains that the socio-ecological determinants of health, classified into individual, household and community levels interact with (or influence) proximate determinant factors such as women's health status, reproductive history, enabling environment, female circumcision status, place of delivery and delivery assistant to determine treatment pathways of women/mothers in maternity. The outcome of such treatment pathways, including delivery processes, is either healthiness (without VVF) or sickness (with VVF).

In other words, both the individual level—characterised by attitudes, beliefs, age, gender (being a woman), educational level, maternal decision-making status, and perception—and the household level—characterised by household income, partner's education, occupation, household environment, and family support/care—as well as the community level—characterised by cultural/religious beliefs, community norms, social cohesion, equity, residence, and health care facility—interact with each other to determine how well mothers are supported and cared for.

Furthermore, in order to affect treatment pathways, these level of influences (individual, household and community) also interact with the proximate determinants including women's health status, reproductive history, access to obstetric care, place of delivery, etc. to cause an effect on the health of the affected women with VVF. On the other hand, these treatment pathways have a significant role in determining whether or not the first site of care, intermediate locations, and final locations are sufficient to affect a healthy condition for the affected women.

The analysis of the framework used for this study shows that, when combined with the clinical elements of the illness, the social context of VVF among women in the selected (Ebonyi and Plateau) states may have a more significant impact on the health outcomes of the affected women. Whatever the case, it would be sufficient to declare clearly that the clinical manifestations of the condition of VVF are less important than its social dimensions, which speak more to its etiology and the pathways to healthcare. In actuality, all of the patients' preferred treatment pathways depend on the social setting.

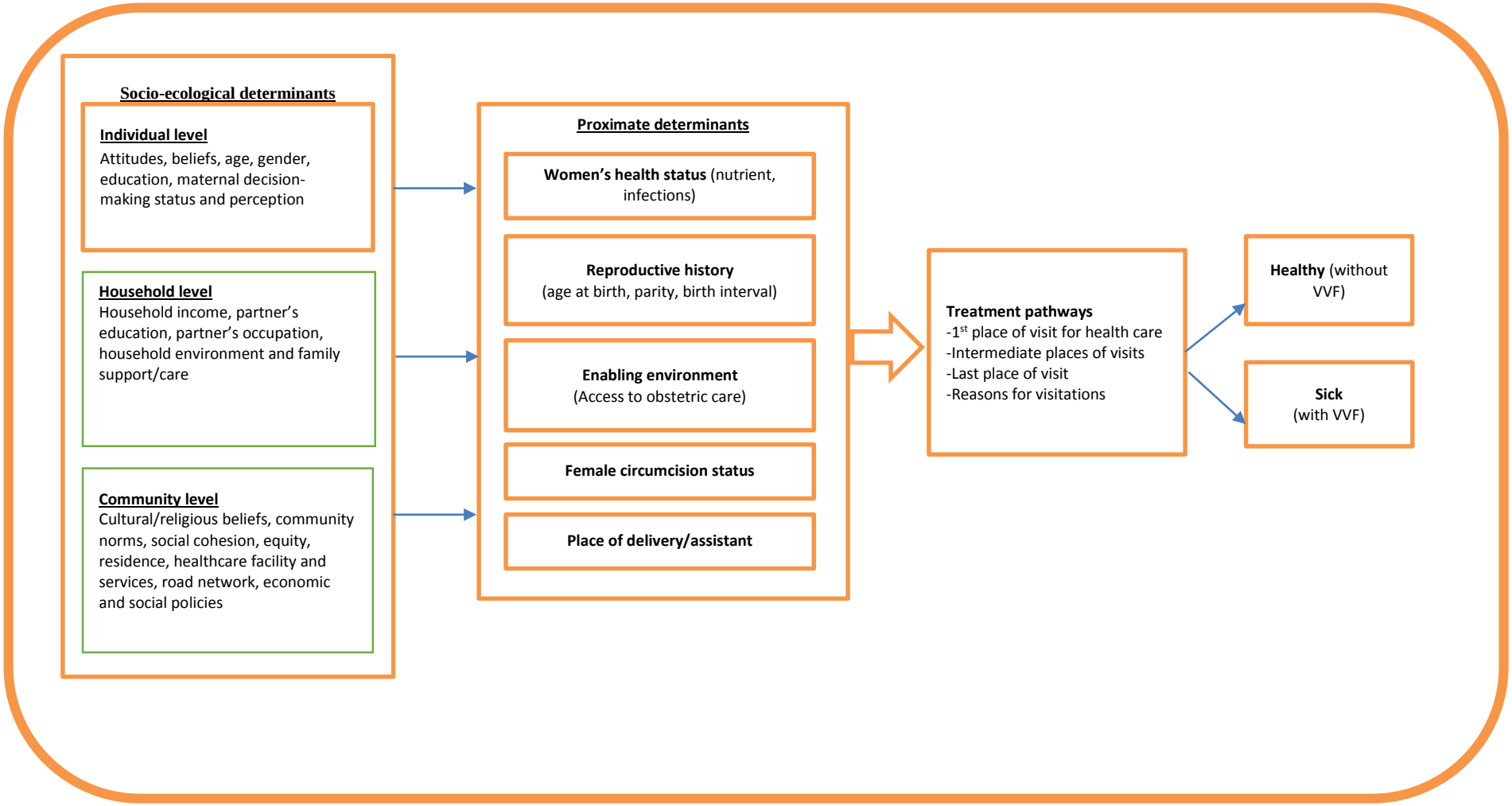


Figure 2.1: A conceptual framework indicating the synthesis of Ecological Model of Health and Proximate Determinant Framework

Source: Researcher (2020)

CHAPTER THREE

METHODOLOGY

3.0 Chapter Overview

This chapter presents the scientific procedure that was used in this study. It explained various steps which involve the research design, study areas, study population, sample techniques, size and distribution, sampling procedures, research instruments, method of data collection, methods of data analysis, Variable measurement and ethical consideration.

3.1 Research Design

The comparative cross-sectional survey design was adopted for the purpose of this research. It also involved methodological triangulation of quantitative and qualitative data collection methods. The comparative cross-sectional survey design was adopted in this study because it attempted to compare and contrast VVF knowledge, prevalence, determinants and causes in Ebonyi and Plateau States among women. The design was employed due to its systematic approach in the selection of appropriate representative sample size out of the target population of study at one point in time.

On the quantitative method of social inquiry, however, information about the socio-demographic characteristics of the respondents including information on the knowledge, prevalence, determinants among others, suitable for numerical analysis were gathered through questionnaire administration. It further elicited numerical information on the subject of investigation in a non-experimental analysis using univariate, cross-tabulations and binary regressions. These were utilised to cross-examine the outcome of VVF among women in the selected states to ascertain the prevalence and determinants of variations in the conditions on the affected persons.

The qualitative method, on the other hand, drew critical insights on the social reality of VVF on the affected persons using in-depth interviews and case study. The adoption of this approach helps to uncover critical cultural factors that predisposed affected women with VVF in the two states to the condition as well as the pathways to the treatment of the condition, while using them to corroborate and clarify findings from the quantitative approach.

3.2 Study Area(s)

The study was conducted in Ebonyi and Plateau states. The choice of Plateau and Ebonyi was informed by the fact that these States have major and well established VVF centers that serve as referral facilities for patients in other states. These centers attend to a sizable number of VVF patients which gave the researcher an opportunity of administering a large number of instruments on respondents. These states are also characterised by early marriage and many women deliver their children at home, thus, a risk of VVF in emergency cases such as obstructed labour (National Populatiom Commission, and ICF International, 2019). In addition there is a rise in the cases of VVF in the south east region with Ebonyi State taking the lead. Many women in these states have low patronage for antenatal care, poor access to basic amenities and polygyny (NPC, and ICF International, 2014).

The VVF centre located in Jos was created in 1992 as a ward entirely devoted to fistula cases within the larger hospital and named after a religion sect called ECWA Evangel VVF center. As at 1993, about 100 cases a year were treated. Since then the program has grown steadily; the center performed 365 fistula repair surgeries in 2013. The center has 40 bed ward, a large out-patient facility and a hostel space (Fistula Foundation, 2014). On the other hand, the National Fistula Center, Abakiliki then called the South-East Center was established in 2008 and was taken over by the Federal Government of Nigeria becoming the first National Obstetric Fistula Center in Nigeria. It has provided over 2000 free treatments for women in over 20 states of the federation (Anioke, 2014).

3.3 Study Population

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 this age range was based on the fact that previous research in Nigeria have shown that the majority of women with VVF marry before the age of 15 (Basheer, and Pumpaibool, 2015; Save the Children Nigeria, 2016), as opposed to the demographic age range of 15 – 49 years indicated in national studies as the reproductive age brackets (NPC, and ICF International, 2009; 2014; 2019). Also, women in the community and selected health care providers were polled for their views on the social context of VVF in order to conduct a more detailed investigation of the research problem.

3.4 Sample Size Derivation and Distribution

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 as indicated in "(3.1)". The calculated sample size for each of the selected states was 384. However, 10% was added to cover probable cases of non-response bringing it to a total of 422 for each state.

$$n = \frac{Z^2[\, p\,(1-p)\,]}{E^2} \qquad (3.1)$$

Where

n = Sample size

Z = Standard normal score = 1.96

P = Estimated proportion

E = Sampling error that can be tolerated. 5%

$$n = \frac{1.96^2\,[0.50(1-.50)]}{0.05^2}$$

$$n = \frac{3.8416\,[.50\,(0.5)]}{0.0025}$$

$$n = \frac{3.8416\ (0.25)}{0.0025}$$

$$n = \frac{0.9604}{0.0025}$$

$$n = 384.16 = 384 + 10\%$$

$$n = \mathbf{422}$$

However, based on the inclusion criteria and non-response on the part of the respondents, only 324 copies of questionnaires were retrieved from Ebonyi State and 371 copies of questionnaires from Plateau State bringing the total to 695 sample size. This is to say the total sample size for the community study was 695 with a response rate of 82.3% which can be termed to as good-fit response rate for the analysis of the study. Thus, the administration of the questionnaire in Ebonyi State covered Abakiliki, Ezza North and Izzi LGAs, while that of Plateau State covered Jos North, Barkinladi, and Riyom LGAs respectively.

For the hospital based study, forty (40) VVF patients were purposively selected as respondent based on characteristics such as age, number of children, VVF duration, marital status; 20 respondents each for Ebonyi and Plateau states. Eight (8) case studies were also conducted – four (4) in each state.

3.4.1 Inclusion Criteria

The following guided the researcher in gathering useful information and in the selection of respondents for the study:

- ✓ Females between age 12 – 49 years with VVF admitted at the various VVF centers in the study sites;
- ✓ Women within their reproductive ages in the communities selected.

3.5 Sampling Technique

A multi-stage sampling procedure was employed in the study. First, Ebonyi and Plateau states were purposively selected based on the fact that they have major and well-established VVF centers that serve as referral facilities for patients from other states were situated. Second, three (3) Local Government Areas (LGAs) were selected in each of the states based

on their proximity to VVF centres (ECWA Evangel VVF Centre, Jos and National Fistula Centre Abakiliki). Third, the selected LGAs were stratified based on urban LGAs and rural LGAs, where one urban LGA (Ebonyi: Abakaliki; Pleateau: Jos North) was selected from each state, and two rural LGAs (Ebonyi: Ezza and Izzi; Plateau: Barkinladi and Riyom) were chosen from each state. This was achieved by the classification of settlements in each of the LGAs based on 2017 official definition of any locality with more than a minimum of 20,000 people as urban and places with less than 20,000 people as rural areas (NPC, and ICF International, 2019).

Fourth, upon the classification of LGAs into urban and rural settings, three communities were randomly selected with one from each urban and rural areas. Fifth, in the selected communities, systematic sampling was used to select households based on the sampling frame for each community. Sixth, in each of the selected households, simple random sampling was used to administered questionnaire on women (aged 12 – 49 years) as respondents, and in a situation where there were two or more women in the household, based on the inclusion criteria, one was randomly selected as respondent. In addition to this, purposive and snowball sampling method were used to recruit health care professionals and the patients of VVF in order to gather qualitative data for the study.

While the community-based study utilised probabilistic sampling technique in the process of selection of the respondents, purposive and snowball sampling were used in the selection of participants for in-depth interviews, key informant interviews and case studies so as to generate qualitative data suitable for non-numerical analysis.

3.6 Instruments of Data Collection

This section presents the methods and instruments employed for data collection in the study. This study sought to ascertain the social context of VVF as such both the primary and secondary sources of data were employed. The primary source involved a triangulation of quantitative and qualitative methods, which followed the sequential exploratory design, in which the quantitative method was used to complement qualitative findings. Due to the nature of this research, the use of questionnaire, in-depth interviews and case studies was adopted for the collection of primary data. The researcher employed Field Assistants in the

process of data collection; especially those that were familiar with the terrain of the study areas and could read and speak Igbo, Hausa and English Languages fluently. They were also trained on the intent and method of administering the questionnaire, conducting interview, note taking during interviews and case studies.

3.6.1 Hospital Records

Hospital records served as secondary data for the study which consisted of information retrieved on VVF patients in a period of one year, from Bigham Teaching Hospital (ECWA Hospital, Jos) and National Fistula Centre, Abakaliki. Based on the hospital records from both sates, a total of 517 VVF patients were retrieved in the period considered in the study – Ebonyi (136) and Plateau (381).

3.6.2 Semi-Structured Questionnaire

Information from community based study was collected using the questionnaire and as complement of the qualitative findings. The questions presentation reflected issues pertaining to the objectives of the study. The question schedule design contained both closed and open ended questions which were pre-tested to determine the validity of the questions, clarity of terminology, time schedule, and the securing and ordering of the questions. The questionnaire was administered on the selected respondents to ensure responses were elicited appropriately. The instrument was developed in English language, but in cases respondents could not understand English language, questions were translated to respondent's native language, which ensured proper understanding hence, appropriate responses. Experts were employed to translate questions into the local languages of respondents as the need arises especially in Plateau State which has many native languages. The questionnaire was administered on women of childbearing ages in the LGAs selected.

3.6.3 In-Depth Interview

In-depth interviews were used to engage respondents at the Fistula Centres on issues as it relates to the objectives of the study. The Interview Guide was constructed in English language, but the interviewer was able to speak English, Hausa and/or Igbo language. In cases where the researcher encountered respondents with varying languages, experts were

employed to translate the instrument to their respective native languages. This was to ensure proper understanding and accuracy of responses. To achieve this, forty (40) VVF patients were selected purposively as respondent based on characteristics such as age, number of children, VVF duration, and marital status: 20 respondents each from Ebonyi and Plateau states.

3.6.4 Key Informant Interview

Key informant interviews were also used to engage health professionals (doctors and nurses) on issues related to VVF as complements to the in-depth interviews conducted. The information was elicited from six (6) health givers/professionals at the various VVF centers (3 for each center).

3.6.5 Case Study

The case study was also employed to review the subject of study. This was accomplished by purposively selecting four (4) VVF cases from each of the VVF centres chosen for this study. The respondents for the case study were chosen based on extreme cases: patients who were treated successfully and the procedures that influenced the successful treatment, as well as those whose condition prolonged and led to further complcations. The guide for this was subjected to modification during the process of data collection. The case study was carried out in duration of three (3) months.

Table 3.1: Matrix of Specific Objectives of the Study and Research Instruments

S/N	Specific Objectives	Questionnaire	Key informant interview	In-Depth Interview	Hospital records
1	Determinants of VVF among patients	X	X	X	
2	Community perception of VVF in the study area	X	X	X	
3	Prevalence of VVF	X			X
4	Treatment pathways of patients	X	X	X	
5	Social factors influencing care and support of VVF patients	X	X	X	X
6	Socio-economic consequences of VVF	X		X	

3.7 Validity of Research Instruments

The validity of the instruments that was used for this study were considered to ensure that the instruments were consistent and dependable to measure what they intended to measure. In this regard, face validity and content validity were used to validate the instruments used for data collection. This involved the researcher taking a critical look at all the questions to ensure that they were consistent with the identified indicators in each of the objectives. Again, a number of experienced researchers in the area of medical demography and social epidemiology assessed the questions to ascertain their validity. Additionally, a descriptive and interpretative validity type was used to validate the qualitative instruments used for data collection. Finally, a pre-test of the instruments was conducted in Jos, the Plateau State capital, to assess their validity prior to final distribution, following which all necessary revisions were made.

3.8 Reliability of Research Instruments

Reliability in itself means the measurement of internal consistency of what a variable purport to measure in line with the identified indicators. In this study, the reliability of the questionnaire used for data collection was determined using Cronbach's Alpha coefficient. In that, the overall reliability coefficient for the questionnaire based on its average inter-item correlation was $\alpha = 0.57$, which indicated a strong level of internal consistency. However, the reliability of the measures on the community level knowledge about VVF revealed that it yielded a reliability co-efficient of $\alpha = 0.63$, while that of perception yielded a reliability coefficient of $\alpha = 0.53$.

3.9 Selection and Training of Research Assistants

The importance of Research Assistants (RAs) in the process of data collection in a research cannot be overemphasized. Therefore, before the commencement of the data collection processes, RAs were trained on how to administer and handle all instruments of data collection. Starting from the pilot study, they were trained on the procedure of sampling and administration of research instruments. In the main data collection procedure during the field work, where adjustments were required, they were informed and perfected. It should

be noted that a number of RAs could not adjust effectively to the knowledge and skills in sampling and administration of research instruments, as such many of them were screened out, while those who could adapt effectively were made to collect data from the respondents and participants of the study.

3.10 Procedure for Data Collection

There were procedures adopted in the process of data collection. In the first instance, the researcher obtained ethical clearances from the two study domains, while the consents of all respondents/participants were sought before the administration of the research instruments. Indeed, data were collected with the aid of semi-structured questionnaire to gather both numerical and non-numerical data, especially from the community-based study, while hospital records, IDIs, KIIs and case studies were used to gather data from the patients of VVF and health workers respectively. However, at the administration of semi-structured questionnaire at the community level and at the commencement of interviews with all participants, the research purpose was made known. In the process of gathering qualitative data in particular, the researcher moderated all sessions, while selected RAs served as the note takers. The audio-digital recordings of their responses were also taken for the purpose of future retrieval, transcriptions, tarnslations and analysis.

3.11 Data Management

For the community-based study, all copies of semi-structured questionnaire administered were numbered serially to ensure that all copies of the instruments were retrieved accordingly. During the process of data entry, Statistical Package for Social Sciences (SPSS) was used. For the qualitative data, all interviews sessions were audio-digitally recorded concurrently with note-taking, which was assisted by the RAs. The recorded sessions were later transcribed and translated into English language, depending on the languages that were used to conduct the interviews. Each files was labeled as appropriate based on the location of each participant and saved on a computer backup in preparation for data cleaning, editing and analysis.

3.12 Method of Data Analysis

Different methods were employed in analyzing the quantitative and qualitative data gathered for this research. Quantitative data were analyzed at three levels: univariate, bivariate and multivariate level.

Univariate Level: The univariate level entailed the use of simple statistics to examine the socio-demographic characteristics of the respondents/patients. Frequency distribution tables and percentages were employed to present the results according to individual background characteristics. The variations in their responses were also observed.

Bivariate Level: The bivariate analysis used in the study evaluated the relationship between variables. This involved the use of cross-tabulations with chi-square statistical test to show whether variables are statistically significantly related or not. The main focus here was to examine the possible relationship between two variables at $P<0.05$.

Multivariate Level: The multivariate level of analysis employed logistic regression model to examine the association between predictors of knowledge and perception of VVF at community level in the study. The model showed the estimate of predictions of each predictor on the dependent variable at $P<0.05$ level of significance. The odds ratio was used as the estimates of the predictions.

The analysis of qualitative data was done using ethnographic summaries and content analysis. Recorded information was translated and transcribed. Information gathered was presented based on themes and specific objectives the study was set to achieve as detailed in section 3.14 and Table 3.2. The qualitative data were content-analysed using Atlas.ti version 9.1.

3.13 Variable Measurements

Two major categories of variables, namely; dependent and independent variables - were measured and defined in this study. There are two dependent variables considered in this study. The first dependent variable in the study was community-level knowledge with VVF. This was assessed using a-13 question that was developed based on whether the respondents

were: (i) aware of uncontrolled leakage of urine from the vagina; (ii) aware of uncontrolled leakage of faeces from the vagina; (iii) aware of early marriage/under-age marriage leading to vaginal leak ages; (iv) patronage of quack doctors during childbirth results in vaginal leakages; (v) patronage of TBAs during childbirth causes vaginal leakages; (vi) home delivery leads to vaginal leakages after birth; (vii) teenage pregnancy results into vaginal leakages; (viii) cesarean section during childbirth leading to vaginal leakages (ix) lack of professional ANC leading to vaginal leakages; (x) insertion of herbs into the vaginal during pregnancy leading to vaginal leakages; (xi) accident leading to vaginal leakages; (xii) the practice of FGM can cause leakages from the vagina; and (xiii) rape of a girl or woman results in vaginal leakages.

There are two possible answers to each of the questions: yes or no. Responses were coded as "1" for "yes" and "0" for "no," respectively. Additionally, respondents' knowledge of VVF at the community level was summed and reclassified as LOW if their total score was between 0 and 4; MODERATE if their total score was between 5 and 9; and HIGH KNOWLEDGE if their total score was between 10 and 13. Further re-categorisation was done to create dummy variables of low (0 - 6 scores) or high (7 - 13 scores), with low coded "0" and high coded "1" in the logistic regression performed to assess the predicting influence of all predictors (socio-demographic factors).

Community perception of VVF was the second dependent variable. This is described as how the community members feel towards those who have VVF and how they perceive them as a result of their condition. This variable was measured by asking the respondents whether the VVF patients should be blamed for her condition or not? Responses were categorized as either "1" for "yes (Negative perception)" or "0" for "no (Positive perception)," accordingly.

The socio-demographic characteristics of the respondents, on the other hand, formed the independent variables of the study. These variables are age (1=15-19, 2=20-24, 3=25-29, 4=30-34, 5=35-39, 6=40-44, 7=45+); marital status (1=Single, 2=Married, 3=Separated, 4=Divorced, 5=Widow); Family Type (1=Monogamous, 2=Polygamouse); educational level (1=No formal education, 2=Primary, 3=Secondary, 4=Tertiary); religion (1=Christianity, 2=Islam, 3=Free thinker, 4=Traditionalist); occupation (1=Housewife,

2=Civil servant, 3=Artisan, 4=Farmer, 5=Student, 6=Others); monthly income (1=Less than N18000, 2=N18000-N49999, 3=N5000-N99999, 4=N100000 and above, 5=Others) and age at marriage (1=Less than 15 years, 2=20-24, 3=25-29, 4=30-34, 5=35+). Other independent variables include number of children ever-born (1=1, 2=2, 3=3, 4=4, 5=5, 6=6+), age at first birth (1=Less than 15 years, 2=20-24, 3=25-29, 4=30-34, 5=35+), last place of delivery (1=Home, 2=PHC, 3=TBAs, 4=Private Clinics, 5=General Hospital, 6=Others); men's age (1=15-19, 2=20-24, 3=25-29, 4=30-34, 5=35-39, 6=40-44, 7=45+); men's education (1=No formal education, 2=Primary, 3=Secondary, 4=Tertiary); and mens' monthly income (1=Less than N18000, 2=N18000-N49999, 3=N5000-N99999, 4=N100000 and above, 5=Others).

3.14 Analytical Themes/Codes Generated (Qualitative Data)

Based on the total number of transcripts from all participants, the transcribed data (texts) for the qualitative data were uploaded into an application (Atlas ti. 9.1). In light of this, codes were generated from the transcripts as themes in accordance with the specific study objectives that the qualitative data had successfully captured. For instance, 16 themes/codes were generated on the determinants of VVF and they are listed as;

i. Underage marriage/early marriage
ii. Obstructed/prolonged labour
iii. Cesarean section (CS)
iv. Fibroid surgery
v. Evil spirit
vi. Accident
vii. Rape
viii. Reaction to drugs
ix. Ignorance
x. Hysterectomy
xi. Patronising TBAs and quack doctors
xii. Insertion of herbs (concoction)
xiii. Big babies

xiv. Female genital mutilation

xv. Painful mensuration

xvi. Home delivery/poverty

Also, seven analytical themes/codes were created for the treatment pathways adopted by VVF patients, and a number of themes and sub-themes were further created for the factor influencing the patients' care and support. While two themes were generated for the types of care and support that patients generally received, particular focus was placed on the care and support that spouses provided, and two analytical themes were formed before six analytical themes/codes were generated for the factors influencing the care and support that patients received. On the socio-economic consequences of VVF, two main themes were generated from the qualitative data: social effects and economic effects, each of which in turn gave rise to sub-themes. The summary of the themes/codes by specific objectives is shown in Table 3.2.

Table 3.2. Themes/Codes Generated From the Qualitative Data by Specific Objectives

Themes/codes generated for treatment pathways	
i. Home remedies – Hospitals – VVF Centre **ii.** Traditional herbs – hospitals or no hospitals – VVF Centre **iii.** Prayer house – Hospitals – VVF Centre **iv.** PHC – Traditional medicine – VVF Centre **v.** Private hospitals – VVF Centre **vi.** Government hospitals – VVF Centre **vii.** Direct to VVF Centre **viii.** Back and forth movement.	*Sub-themes/codes (factors influencing pathways)* i. Doctors' referrals; ii. VVF Patients' personal knowledge through media publicity on VVF iii. Family members or significant others' referrals.
Themes/codes generated for care and support	**Codes for factors influencing care/supports**
i. Nature of care and support for VVF patients: (a) Lack of care and support for VVF patients, (b) Availability of care and support for VVF patients. **ii.** Spousal care and support: (a) Good spousal care and support, (b) Bad spousal care and support.	i. Community perception on VVF patients (positive or negative/self-perception) ii. Number of repairs for VVF patients iii. Marital status (single or married) iv. The cause of VVF; v. Level of husbands' affection towards wife vi. Husband's decision.
Themes/codes generated on social effects	**Codes generated on economic effects**
i. Stigmatisation **ii.** Isolation **iii.** Divorce/separation **iv.** Denial of spousal sex	i. High cost of treatment/increase in expenditure ii. Job loss iii. Loss of livelihood, and iv. Disempowerment.

Table 3.3: Variables, Measurements and Analytical Tools Table

S/N	Objectives	Variables to measure	Types of analysis
1.	Determinants of VVF	• Early marriage - Customs about early marriage, age at marriage • Age at first pregnancy among teenagers - Average age of first pregnancy among teenagers • Male role in maternal health outcomes - male knowledge of VVF • Maternal health status • Educational status of teenagers and patients of VVF - Educational attainment of teenagers and patients of VVF • Religious beliefs and practice on marriage - religious perspective on early marriage • Clinical factors	Descriptive statistics (frequency distribution, mean score and standard deviation) Chi Square Thematic analysis of male role and religious beliefs on marriage and health seeking practices of women
2.	Community perception of VVF in the study area	• Perceived causes of VVF • Perceived prevention of VVF • Perceived treatment of VVF • Perceived knowledge of VVF • Perceived social consequences (positive/negative)	Descriptive statistics (frequency distribution) Chi Square Logistic regression Thematic analysis
3.	Prevalence of VVF	• Yearly estimates nationally - Number of documented VVF cases per state per year • Yearly estimates in study location - Number of documented VVF cases in study location	Descriptive statistics (prevalence rate of VVF in study location)
4.	Treatment pathways of VVF patients	• Treatment at the onset of VVF (traditional/modern) • Decision making process on place of treatment - Contribution to decision on place treatment • Type of treatment available - Orthodox: surgical intervention/management • Type of treatment accessed - Unorthodox: Traditional treatment/management	Descriptive statistics (frequency distribution, mean score and standard deviation) Thematic analysis of decision making and women's contribution to health seeking practices, and type of VVF treatment accessed
5.	Factors influencing care and support for VVF patients	• Cultural/Traditional beliefs about maternal health - Beliefs about VVF • Availability of VVF treating medical facilities - location of VVF medical facility, • availability of VVF medical specialist and Cost of treatment • Residential location of patients - Distance to nearest VVF medical facility and transportation cost	Descriptive statistics (frequency distribution, mean score and standard deviation) Thematic analysis of cultural/traditional beliefs and practices on maternal health particularly VVF
6	Socio-economic consequences of VVF	• Patients sense of self-worth - Patients self-worth • Patients present relationship status with spouse - Relationship status with spouse. • Patients present relationship status with community - Stigmatisation or acceptance from community members • Economic and social effects of VVF on the immediate family - Economic and social burden to family members	Descriptive statistics (frequency distribution, mean score and standard deviation) Thematic analysis of patients sense of value and relationship with family and community members

3.15 Ethical Considerations

Ethical approval was obtained from both states of the study. Ethical 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 Center with a reference number NOFIC/E and RM/87/VOL.1/40 in Ebonyi State. The researcher also observed the four major ethical considerations found to be relevant to this study:

Informed Consent: The consent of respondents is very crucial in this research. Thus, prior to the commencement of the interview session, interviewees were given written and oral notice to ensure respondents awareness and understanding of what the interview entails; this involves telling them that they would be taking part in the research, what the research required of them, the purpose of the study, the methods being used and its benefits for them to give their consents. Approval was also sought from the hospital authorities concerned. Respondent's permission was sought before using tape recorders to record their responses and note taking.

Confidentiality of Data: The issue of confidentiality was also considered in this research. All information provided was strictly confidential; names did not appear on the questionnaires instead, they contained identification numbers that was known only by the researcher. The identification was to note that the questionnaire has been returned and were not attached to the general survey. The interviewees' names were coded to avoid identification for example, IDI 1/ date. This was to ensure respondents anonymity during presentation of results. Interviewees were also asked if they could be quoted verbatim in the study.

Voluntariness: Participation in the in-depth interviews and FGDs was completely voluntary. Hence, nothing was done to coerce the respondents to participate in the interview and FGD process.

Non-malfeasance to Participants: The possibility of physical, psychological, social harm emanating from the questionnaire and/or interview guide was unlikely. However, where participants perceive harm, become uncomfortable with any of the question and/or

discussion, they were advised to either disregard the question or completely withdraw from the interview.

Beneficence: At the commencement of interviews and administration of questionnaires to participants and respondents, they were intimated of the potential benefits that would be accrued to them if they accept to participate in the research. As explained to the participants, the benefits ranged from gaining more insight to the causes of VVF to its prevention and professional treatment of the condition.

Translations: In order to eliminate some form of language barriers with respondents and participants of the study, all instruments have been translated to Hausa and Igbo languages which represented the local languages of the two study locations: Ebonyi (Igbo) and Plateau (Hausa). These were done in line with the protocol of ethical standards in the conduct of social research.

3.16 Limitations to the Study

In spite of the careful conduct of the study, there were observable shortcomings and limitations to the study. First, the sampling of VVF patients was limited to those who have been referred from other facilities to the selected VVF centres. This automatically excluded those who had been diagnosed of VVF in other facilities that were yet to be referred or presented to the two selected VVF centres. Again, the social contexts of those in other facilities including those that were yet to be medically diagnosed or presented at modern healthcare facilities remained unknown and not reprensenting the views of the general VVF patients.

Additionally, the sample size used for the analysis of the study was based on VVF centres' records and not all the VVF patients across boards. This may in a way undermine the social contexts of VVF in the two locations as many other patients who were either incapacitated of being referred or presented at the VVF centres were excluded from the study.

Furthermore, the data generated for the analysis of this study were based on self-reported data, which may be fraught with some forms of biases. Similarly, the study did not capture the views of the Traditional Birth Attendants (TBAs), prayer house operators and herbalists

as key informants to explain the level of their services in the prevention and treatment of VVF patients. Thus, this may affect the generalizability of the outcome of the study.

Finally, with reference to data generated on factors influencing care and support, husbands of VVF patients were excluded from the study. This may undermine the outcome of the study because their views on the social consequences related to divorce, separation including care and support may have played significant roles in assessing the care and supports received from their spouses.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Chapter Overview

This chapter presents the analyses and interpretations of the data gathered from the field of study as highlighted in the methodology. The data anlysed and interpreted in this chapter were both sourced from hospital records (National Fistula Centre Abakaliki, Ebonyi State and Bigham Teaching Hospital Jos, Plateau State) and the primary sources comprising the questionnaire administered as the community survey, in-depth interviews and case studies conducted with the patients of VVF and health professionals respectively. Thus, the analyses and interpretations of the data have been logically presented in line with the specific objectives the study set out to achieve while still maintaining triangulation of methods.

For the primary sources, however, a total of 695 women (aged 12-49 years) were drawn for the administration of the questionnaire which constituted Ebonyi (324) and Plateau (371); 40 IDIs, 20 for each state, among patients and health professionals; and four case studies, two from each centre across the selected VVF facilities. For the hospital records, the case notes of 517 VVF patients were purposively extracted from the VVF facilities centres – Ebonyi (136) and Plateau (381) so as to determine the prevalence rate of VVF in the two states. The rationale for the combination of the methods adopted was informed by the need for in-depth clarifications, corroborations and complementarity of data so as to arrive at a logical conclusion of the subject matter. Notably however, of the 844 respondents calculated as sample size and successfully interviewed as the community survey, only 695 respondents were found valid and utilised for the analysis of the study. This implies that the response rate for this study has yielded 82.3 per cent, and thus reasonably accepted for a study like this considering its systematic procedures in the process of data collection and the inclusion

criteria that were duly observed. As such, the results and interpretations of data are presented in table-formats, charts as well as content narratives based on the themes that were generated from the non-numerical aspect of the study.

4.1 Socio-Demographic Characteristics of the Respondents

This section of the study gives a highlight of the socio-demographic characteristics of the respondents. Table 4.1 presents the summary of the results. While the overall age of the respondents was 34.22±10.27 years, the mean age of those in Ebonyi (36.60±10.80 years) was found to be higher than their counterparts in Plateau State (32.15±9.33 years). Again, the highest proportion of respondents in the overall were between the ages of 25 – 29 years (22.6%), while the least proportion was age 15 – 19 years (4.5%). In comparing the highest percentage of age groups by state, those who were between 30 – 34 years (23.3%) in Ebonyi State has the highest and those who were between 25 – 29 (24.1%) and 30 – 34 years (24.1%) had the highest percentage of respondents, while the least proportions in the two states were those between 15 – 19 years respectively.

In the analysis of the marital status of the respondents, the majority at all levels were married compared to those who were single-mother (12.9%), separated (1.6%), divorced (0.4%) and widow (6.5%). The Table further revealed that the majority were monogamous family type when compared to those who were in polygamous family type (27.2%) in the overall and at the state level – Ebonyi (31.0%) and Plateau (23.7%). This suggest that although monogamous family type were more prevalent among the respondents in both states, the proportion of polygamous family type was higher in Ebonyi than Plateau State. In the highest level of education of the respondents, it was revealed that two-fifth of the respondents (40.7%) had attained secondary school education in the overall (being the highest), while the least proportion of the respondents had no formal education (9.1%). Comparatively, there were more respondents in Plateau State who had attained secondary school education (49.2%) than their counterparts in Ebonyi State (31.1%) as the highest proportion of those in such category.

Table 4.1: Distribution by the Socio-Demographic Profiles of 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)
	Mean Age	*36.60±10.80*	*32.15±9.33*	*34.22±10.27*
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)
	Polygynous	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)
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)
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)
	Mean age at marriage	*21.62±3.64*	*21.76±4.92*	*21.69±4.35*

NB: Figures in parentheses are in %

Table 4.1: Distribution by the Socio-Demographic Profiles of Respondents (*contd*)

Variables	Response categories	Ebonyi (n=324)	Plateau (*n=371*)	Total (n=695)
Number of children ever-born	1	12 (4.1)	30 (9.9)	42 (7.0)
	2	38 (13.0)	66 (21.7)	104 (17.4)
	3	52 (17.8)	76 (25.0)	128 (21.5)
	4	68 (23.3)	56 (18.4)	124 (20.8)
	5	42 (14.4)	32 (10.2)	74 (12.4)
	6+	80 (27.4)	44 (14.5)	124 (20.8)
Age at first birth	Less than 15	5 (1.7)	5 (1.7)	10 (1.7)
	15 – 19	48 (16.5)	70 (24.2)	118 (20.3)
	20 – 24	138 (47.4)	112 (38.8)	250 (43.1)
	25 – 29	90 (30.9)	58 (20.1)	148 (25.5)
	30 – 34	10 (3.4)	34 (11.8)	44 (7.6)
	35+	-	10 (3.5)	10 (1.7)
Last place of delivery	Home	53 (18.5)	41 (13.9)	94 (16.2)
	Primary Health Centre (PHC)	163 (57.0)	83 (28.0)	246 (42.3)
	Traditional Birth Attendant	8 (2.8)	7 (2.4)	15 (2.6)
	Private Clinic	37 (12.9)	82 (27.7)	119 (20.4)
	General Hospital	25 (8.7)	47 (15.9)	72 (12.4)
	Others	-	36 (12.2)	36 (6.2)
Men's age	15 – 19	-	-	-
	20 – 24	1 (0.4)	6 (2.1)	7 (1.3)
	25 – 29	1 (0.4)	22 (7.6)	23 (4.3)
	30 – 34	6 (2.4)	32 (11.0)	38 (7.1)
	35 – 39	27 (11.0)	43 (14.8)	70 (13.0)
	40 – 44	42 (17.2)	72 (24.7)	114 (21.2)
	45+	169 (68.7)	116 (39.9)	285 (53.1)
Men's educational level	No formal education	37 (13.8)	3 (1.1)	40 (7.3)
	Primary	56 (20.8)	20 (7.1)	76 (13.8)
	Secondary	131 (48.7)	98 (34.8)	229 (41.6)
	Tertiary	45 (16.7)	159 (56.4)	204 (37.0)
	Others	-	2 (0.7)	2 (0.4)
Men's monthly income	Less than N18000	78 (33.9)	60 (21.3)	138 (27.0)
	N18000 – N49999	106 (46.1)	48 (17.0)	154 (30.1)
	N50000 – N99999	41 (17.8)	56 (19.9)	97 (18.9)
	NN100000 and above	5 (2.2)	67 (23.8)	72 (14.1)
	Others	-	51 (18.1)	51 (10.0)

NB: Figures in parentheses are in %

Thus, those who had attained primary school education (33.6%) in Ebonyi State has the highest proportion of highest level of education, while the highest proportion of respondents in Plateau State had attained secondary school education.

In their religious affiliations, the majority were Christians (74.7%) in the overall as well as in the two states. Nearly all the respondents in Ebonyi State were adherents of Christianity (93.2%) as compared to those in Plateau State (58.6%), but there were more Muslims in Plateau State (41.1%) than those in Ebonyi State (3.1%). On the occupational distribution of the respondents, the category of respondents with the highest proportion was trading (41.0%) in the overall while the least was those in the category of others which include unemployed, cleaners, etc. Similar trends were observed in the two states but those who indicated trading as occupation in Ebonyi State (48.5%) were higher than their counterparts in Plateau State whose proportion of trading was 34.5%.

In the analysis of their monthly income, it was indicated that the majority earned less than N18000 as monthly income with those who earned N100000 and above being the least. This suggests the prevalence of poverty among women in both states as the majority earned below N18000 as monthly income. In the age at marriage, the mean age at marriage across the two states were similar with 22 years. This may have implications on the knowledge, prevalence and treatment pathways of VVF in the two states.

On the number of children ever-born by the respondents, the highest proportion of children ever-born in the overall was 21.5% for those with 3 children. However, there were differences in the highest proportions of the number of children ever-born by states. While the highest proportion was found with those who had 6+ children in Ebonyi State (27.4%), the highest proportion was found with those with 3 children in Plateau State (25.0%).

In the age at first birth of the respondents, more than two-fifth of the respondents (43.1%) had their first birth between the ages of 20 – 24 both in the overall and in the selected states with Ebonyi having 47.4% and Plateau 38.8%. Ascertaining the last place of delivery of the respondents, it was revealed that more than two-fifth of the respondents delivered their babies at the Primary Health Care (PHC) centres in the overall.

In spite of this results, there seems to be variations in the last place of delivery with those in Ebonyi having 57.0% PHC (being the highest) and those in Plateau State having 27.7% Private Clinics (being the highest).

Information about the husbands of the respondents showed that the majority of their spouses (53.1%) were 45+ years old, which suggest that the majority of the husbands were older than their wives. In the educational attainment of their spouses, 41.6% (being the highest) had attained secondary school education in the overall, while the highest according to states were 48.7% secondary school in Ebonyi State and 56.4% tertiary in Plateau State. In the analysis of their monthly income, 30.1% of their spouses (being the highest) earned between N18000 – N49999. These suggest that there were more of the husbands of the respondents who had attained higher educational levels than their wives as well as earning higher monthly income than their wives.

4.2 Determinants of Vesicovaginal Fistula (VVF)

This section of the study presents the analysis of the determinants of VVF across the selected states. Regarding the bio-medical causes of VVF as sourced from hospital records, Figure 4.1 presents the summary of the bio-medical causes of the VVF patients in both states. While it was revealed that most of the VVF were caused by obstetric issues (86.1%), congenital (1.0%), long labour or prolong labour (1.2%), iatrogenic (0.4%), hysterectomy (0.8%) and trauma (0.8%), 9.9% of the cases showed that the bio-medical causes of VVF were unknown. As the Figure further indicated, there were variations in the proportions of the bio-medical causes of VVF by state of residence. Indeed, the proportion of cases relating its bio-medical causes to obstetric issues in Ebonyi were 84.1% as compared to 83.2% of those in Plateau state. Although the results seem not to have significant difference in the proportion of the bio-medical causes, yet the observable disparities can be accounted for by the variation in the social context of the bio-medical causes which may not reflect in the bio-medical reports of both states. However, both reports suggest that the majority of the bio-medical causes of VVF were associated with obstetric issues.

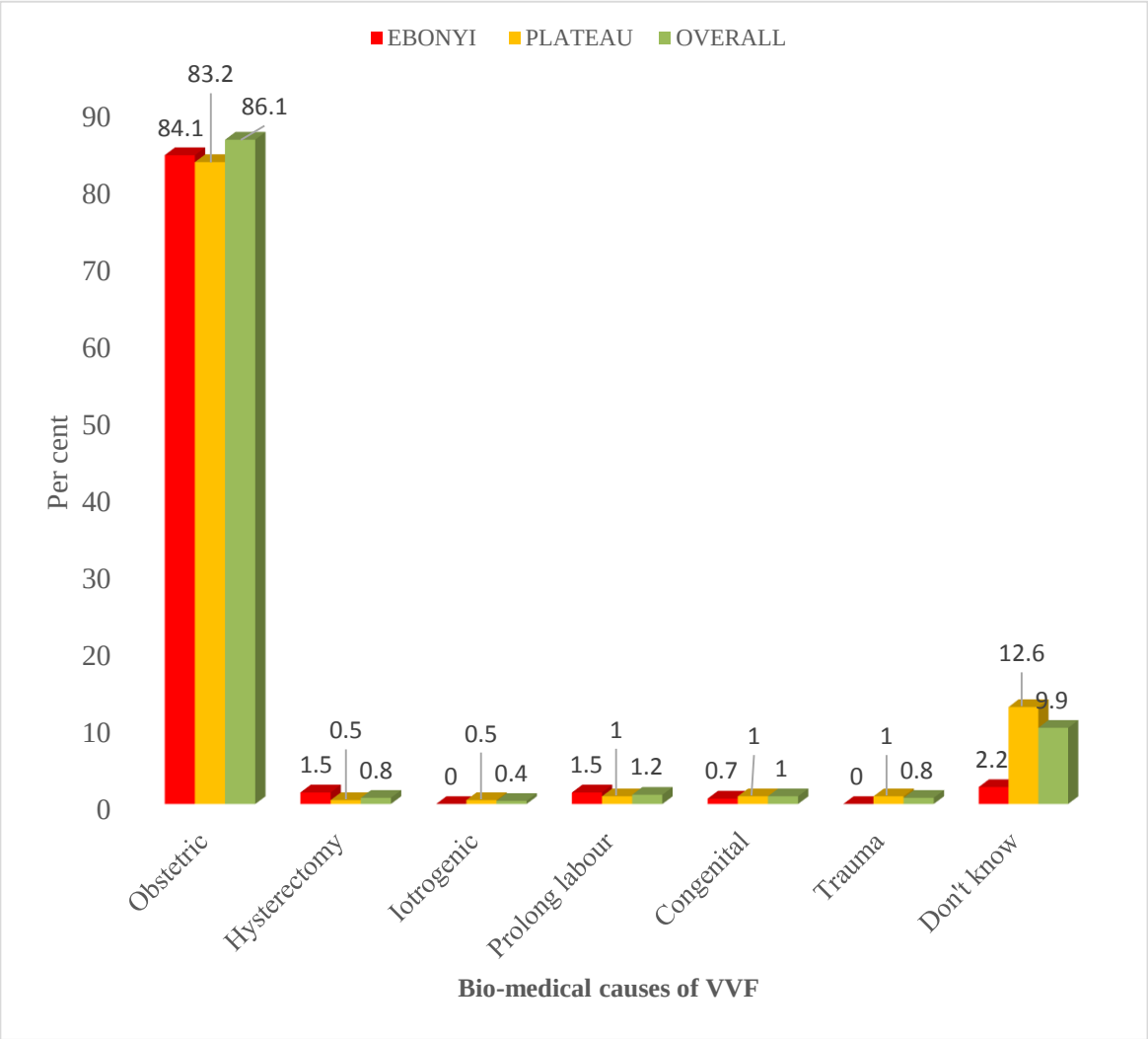


Figure 4.1: Percentage Distribution of VVF Patients by Bio-medical Causes
Source: *National Fistula Centre Abakaliki (2020) and Bigham Teaching Hospital Jos (2020)*

The bio-medical records for VVF patients further showed in Figure 4.2 that different modes of delivery which may also impact on the causes of VVF were reported. It was reveled that a large percentage of VVF patients delivered through Caesarean Section (C/S) – Ebonyi (79.1%) and Plateau (68.7%), followed by those who delivered through Spontaneous Vaginal Delivery (SVD) as the case may be with Ebonyi VVF patients (17.1%) and those in Plateau State (30.7%) who delivered through the vagina. This means that those who delivered through C/S were more likely to experience VVF regardless of the state of residence of the patients. Again, the proportion of those who had SVD was higher in Ebonyi than their counterparts in Plateau State. Also, those who delivered through C/S in Ebonyi State were more in proportion than that of Plateau State and those who delivered through vaginal were more in Plateau State than in Ebonyi State.

The implications of these variations suggest that there were underlying social contexts associated with the bio-medical causes of VVF in the two states which may not be revealed by the medical reports. For instance, under-age birth could be more prevalent in Ebonyi State than in Plateau State or attitudes towards antenatal care may be poor in Eboyi State as compared to those in Plateau State or that the those in Plateau State may have favourable disposition towards vaginal delivery than those in Ebonyi State even though they had the experience of prolong labour. In this regards, it is sufficed to state that the disparities in the social environments of the two states premediated the bio-medical reports.

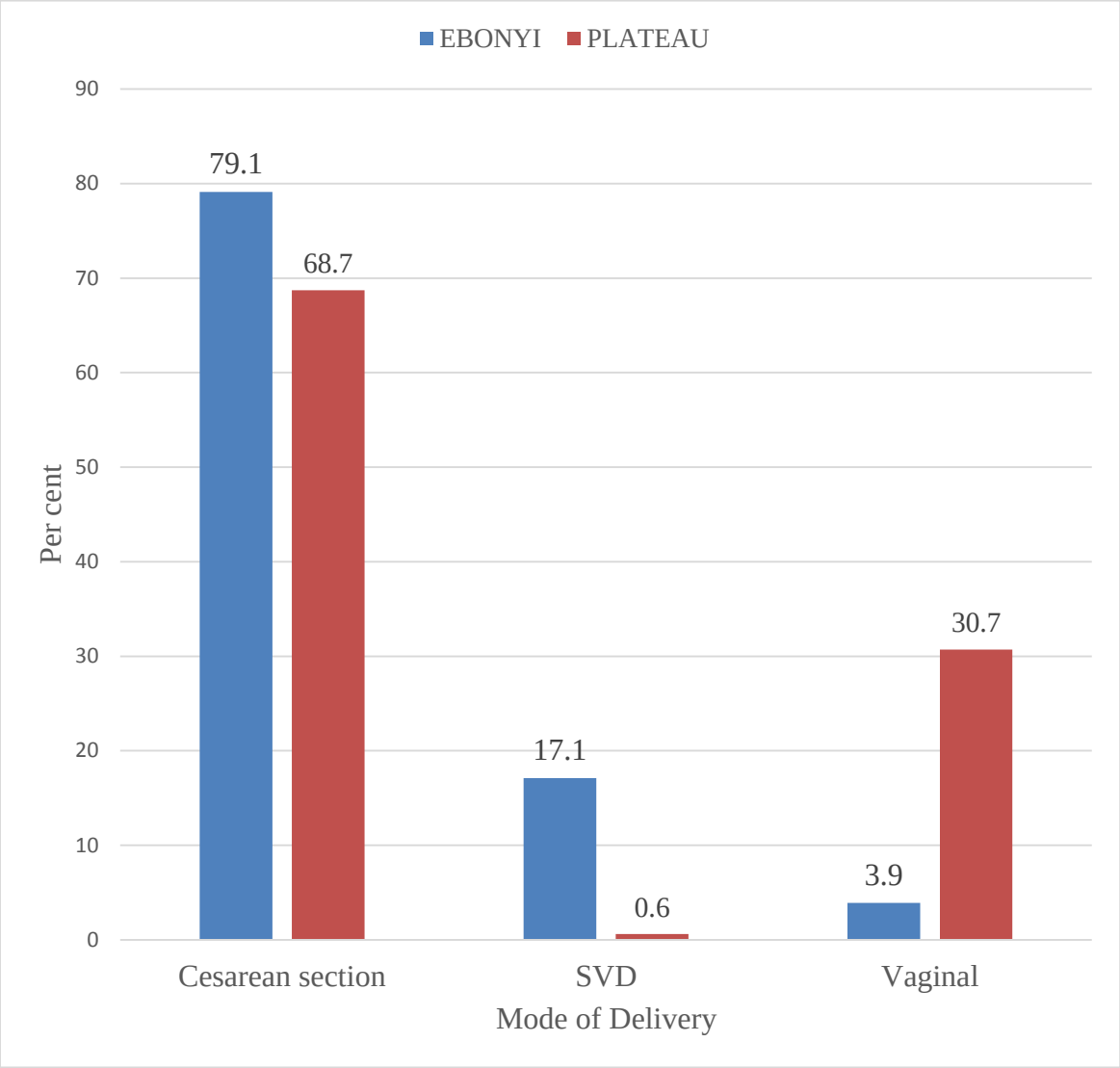


Figure 4.2: Percentage Distribution of VVF Patients by Mode of Delivery of Babies
Source: *National Fistula Centre Abakaliki (2020) and Bigham Teaching Hospital Jos (2020)*

According to the medical records extracted from the VVF centres in the selected states, Figure 4.3 shows the results of the distribution of VVF patients by the place of delivery. The Figure shows that the majority of the VVF patients were delivered at the hospitals with 92.5% of VVF patients in Ebonyi State and 89.9% of VVF patients in Plateau State. Other places of deliveries include home – Ebonyi (2.2%) and Plateau (10.1%), and TBA with only Ebonyi having 5.2% of its deliveries in those centres, while VVF patients from Plateau States had none. The implication of these place of deliveries is that there were underlying unknown social contexts by states which have affected the bio-medical causes of VVF.

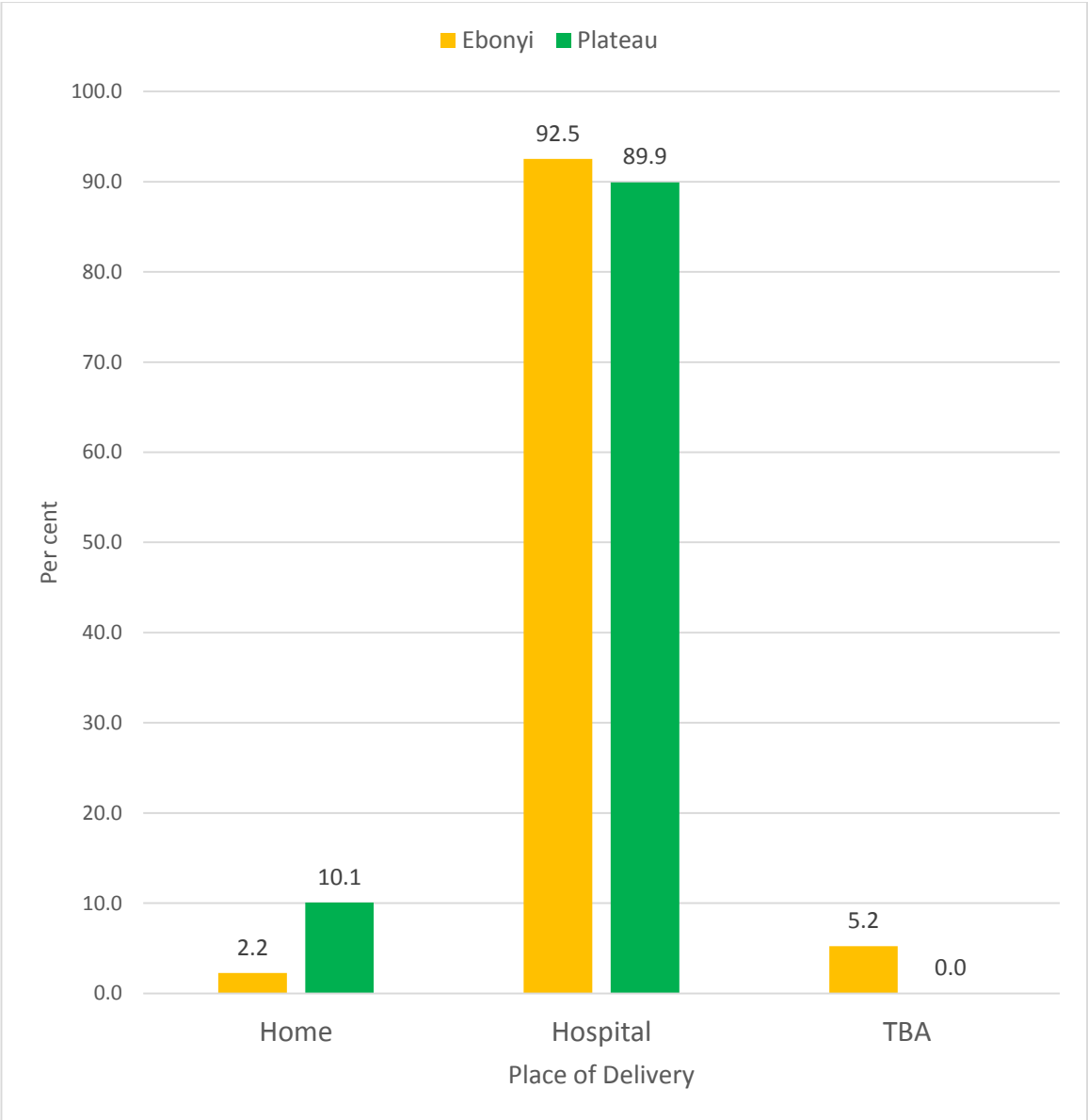


Figure 4.3: Percentage Distribution of VVF Patients by the Place of Delivery
Source: *National Fistula Centre Abakaliki (2020) and Bigham Teaching Hospital Jos (2020)*

Despite the fact that most women gave birth in hospitals, a further investigation of the place of delivery revealed that this was largely due to the patients' inability to have their babies delivered by the Traditional Birth Attendants (TBAs), who they preferred. They encounter delays with their deliveries as a result, which necessitates hospital delivery. In the view of those who had their last place of delivery at the hospitals, the following experiences were reported. For example, one of the respondents noted that although she had her delivery at the hospital, it was after two days of long labour at the TBA home. In her explanation, she stated that she had her delivery:

> At hospital but it was after 2 days of long labour at TBA home, my pregnancy was not desired and the boy responsible denied me and refused to accept me. During my labour, they took me to one old woman that use to deliver people of their babies, I laboured for 2 days before they took me to a private hospital. That time, I was nearly half dead. I don't even know when they took me to that hospital. It was after 3 days before I got myself and discovered that I was in the hospital (**IDI VVF Patient 24 years Ebonyi 2020)**.

Another respondent who noted that she had cesarean section at the hospital, but it was after she had been taken to TBA home for delivery before she was taken to the hospital for the cesarean section. In her words:

> I delivered at the hospital through cesarean section of a male stillbirth. It happened around May, 2013. Though my husband took me to that hospital he when he found out that my labour was becoming difficult at the TBA home, because I laboured for hours in TBA home (**IDI VVF Patient 34c years Ebonyi 2020)**.

In the narration of respondent from Cross River State, it was narrated that she actually delivered her baby at the general hospital, but she had labored for hours at home with the TBA. In her statement. She explained that it was in:

> Cross River General Hospital after labouring for hours at home with traditional birth attendant, I also went to clinic place before going to the general hospital. I did not go on time because that place is very far from my place. The choice of birth at that general hospital is because I was unable to deliver at TBA home; my husband said we should go to hospital (**IDI VVF Patient 35 years Ebonyi 2020)**.

Similarly, this respondent explained that it was at a private hospital, but she narrated that she used to deliver at home. In her words: *It was at Ndubuisi Private Hospital, Ezzamgbo. It was my brother-in law that took me to that place. I used to deliver at home but this last one refused to be delivered at home. I labored for 2 days at TBA house before I was taken to that hospital* (**IDI VVF Patient 40 years Ebonyi 2020).** In the description of a respondent who said she was delivered of her baby at the chemist by a quack nurse explained that: *It was at Achina in Anambra State, 4 years ago. There was one chemist shop where people use to deliver their babies. A quack nurse that is where I registered for antenatal; and it was the decision of my husband to go there and register for ANC* (**IDI VVF Patient 40b years Ebonyi 2020)**.

From another respondent who delivered at the entrance of the hospital in Plateau State, it was narrated that: *I gave birth at the entrance of the hospital; the hospital is far from my place of residence and I had to travel a long distance after we were referred from the smaller clinic* (**IDIVVF Patient 17 years Plateau 2020).** In the narrative of another respondent who thought she was going to deliver her baby at home but ended up delivering the baby at the hospital explained that: *I gave birth in the hospital. But I thought I would give birth at home but it was difficult because I had laboured at home for 3 days* (**IDIVVF Patient 20b years Plateau 2020).**

In the similar experience, a respondent also stated that:

> I gave birth in the hospital but I laboured at home for two days thinking I would give birth at home but I could not. Most times in my village a girl is expected to give birth at home, you will only be taken to the hospital if delivery becomes difficult. Family members make the decision of where to give birth (**IDIVVF Patient 25c years Plateau 2020).**

In the similar vein, another VVF patient also narrated that her initial plan was to give birth at home, but later gave birth at the hospital. In her statement: *I delivered in the hospital; but our initial plan was for me to give birth at home but I could not and was later taken to the hospital* (**IDI VVF Patient 18b years Plateau 2020**). In another narration of last birth experience, a respondent noted that: *I gave birth in the hospital (still birth) after I had laboured at home for two days because I thought I would give birth at home but due to long*

labour my father said I should be taken to the hospital immediately (**IDI VVF Patient 22 years Plateau 2020).**

Furthermore, a respondent who gave birth at TBA home noted that although she visited the hospital for delivery before the health worker asked her to go back that it was not yet time for her to deliver her baby. In her statement, she noted that: *I gave birth at home because when I went to the hospital I was told to go back that it was not labour. But I have laboured at home for 5 days already* (**IDI VVF Patient 22c years Plateau 2020).**

A respondent who explained that she gave birth while going to the hospital due to the distance of hospital to her village stated that:

> I gave birth on the road to the hospital; the hospital is far from my village so while on our way to the clinic the baby was ready to come out so we stopped and entered a house on the road. After the delivery we went back home and could not continue to the hospital due to distance (**IDI VVF Patient 25 years Plateau 2020).**

Another respondent also claimed that although she intended to deliver in the hospital, and due to lack of money she delivered at home. In her explanation: *I gave birth in the hospital but intended giving birth at home due to lack of money for hospital delivery. My husband and his family made the decision of where to give birth* (**IDIVVF Patient 35 years Plateau 2020**). In the narration of another respondent who delivered at home, it was stated that it's a normal thing for them to deliver at home rather than being delivered by a trained medical professional. In her statement, it was that she delivered: *At home; it was like a normal thing to give birth at home so you don't need to wait for anyone to tell you where to give birth. We go to the clinic only when the sickness is serious* (**IDIVVF Patient 57 years Plateau 2020).**

While the majority of the VVF patients gave birth in hospitals, it is evident from the range of views they have shared that this was probably owing to complications with TBAs, home deliveries, or even their preference for TBAs' home deliveries and quack nurses. Despite the fact that many patients said they preferred TBAs' home deliveries because they could not afford the costs of services provided by medical professionals, were too far from the facilities, or had unpleasant experiences with medical personnel during labor, it is necessary

to seek the services of qualified health professionals to avoid complications. This suggests that while some delivery delays may have been caused by VVF patients, other delays may have been brought on by insufficient facilities, as seen by far-flung locations and uncaring attitudes on the part of health professionals about delivery signals. These implicitly imply that vaginal tears might be the result of the complications.

Table 4.2 shows the percentage distribution of bio-medical causes of VVF by state of residence, age, parity, age at delivery and mode of delivery. It was found that out of the 517 VVF patients, a large percentage of the bio-medical causes of VVF among patients were associated with obstetric issues (86.1%). With regards to the state of residence, the majority of the patients pointed out the bio-medical causes of VVF was associated with obstetric issues or plroblems in Ebonyi (94.1%) and Plateau (83.1%) states. In terms of the age of the patients, the majority of patients still associated the bio-medical causes of VVF with obstetric issues, while a few of them only associated the conditions with issues they did not know.

Table 4.2: Percentage Distribution of Bio-medical Causes of VVF by State of Residence, Age, Parity, Age at Delivery and Mode of Delivery (Row Percentage)

Variable	Response categories	Obstretrics	Hysterectomy	Iatrogenic	Prolong labour	Congenital	Trauma	Don't know	TOTAL
Overall		86.1	0.8	0.4	1.2	1.0	0.8	9.9	517 (100.0)
State of residence	Ebonyi	94.1	1.5	-	1.5	0.7	-	2.2	136 (100.0)
	Plateau	83.1	0.5	0.5	1.0	1.0	1.0	12.6	381 (100.0)
Age	15 – 19	88.6	-	-	-	-	-	11.4	35 (100.0)
	20 – 24	94.3	-	-	1.1	-	1.1	3.4	88 (100.0)
	25 – 29	92.3	1.0	-	2.9	-	-	3.9	102 (100.0)
	30 – 34	92.3	-	-	-	1.1	-	6.6	91 (100.0)
	35 – 39	92.9	-	1.4	-	-	-	5.7	70 (100.0)
	40 – 44	93.3	2.2	-	-	-	2.2	2.2	45 (100.0)
	45+	59.7	2.8	1.4	2.8	-	1.4	31.9	72 (100.0)
Parity	0	18.2	-	9.1	9.1	18.2	9.1	36.4	11 (100.0)
	1	95.9	0.7	-	0.7	-	-	2.7	147 (100.0)
	2	92.6	1.5	-	-	-	1.5	4.4	68 (100.0)
	3	94.0	-	-	1.5	-	-	4.5	67 (100.0)
	4	84.1	-	-	2.3	-	-	13.6	44 (100.0)
	5	83.3	2.8	-	-	-	2.8	11.1	36 (100.0)
	6+	81.0	0.9	0.9	-	0.9	-	16.4	116 (100.0)
Age at delivery	Less than 15	95.8	-	-	-	-	-	4.2	24 (100.0)
	15 – 19	95.8	-	-	1.4	-	1.4	1.4	72 (100.0)
	20 – 24	99.1	-	-	-	-	-	0.9	113 (100.0)
	25 – 29	95.9	1.0	-	1.0	-	-	2.1	97 (100.0)
	30+	92.1	1.4	-	0.7	0.7	-	5.0	140 (100.0)
Mode of delivery	C/S	96.0	0.9	-	0.6	0.3	-	2.2	321 (100.0)
	SVD	95.8	-	-	-	-	-	4.2	24 (100.0)
	Vaginal	94.2	-	-	-	-	1.0	4.9	103 (100.0)

Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

When the bio-medical causes of VVF were examined in relation to their parity, only 18.2% of those who had never given birth indicated that the causes were related to obstetric problems, whereas a substantial percentage of patients from different categories stated that it was related to obstetric issues. Nearly all age categories in the distribution of patients by age at delivery showed that it was related to obstetric issues, compared to a small proportion of patients whose medical reports linked the causes of VVF to hysterectomy, iatrogenic, prolonged labor, congenital, and trauma. Regarding the mode of delivery, almost all of the patients whose medical reports were presented also connected the bio-medical causes of VVF with obstetric problems. These reports imply that despite the fact that obstetric problems were linked to VVF across all categories of variables, one can still draw the conclusion that underlying socio-cultural factors influenced the bio-medical factors in a way that affected the age, parity, age at delivery, and mode of delivery to cause the bio-medical factors.

In order to confirm the causes of VVF as revealed by the hospital records, factors that may be associated with the causes of VVF at community level were ascertained. Table 4.3 presents the distribution of respondents by the various factors that could determine VVF at community level. When the respondents were first asked the age at marriage at community level, while the majority of the respondents in Plateau State (63.7%) indicated that marriages are usually constituted between the ages of 15 – 19 years, about half of the respondents in Ebonyi State signified that marriages are usually constituted at the age of 20 – 24 years. This implies that the age at marriage in Plateau State is earlier than those in Ebonyi State. When respondents were asked who mostly determines the age at marriage for a girl child, the majority in both states agreed that both parents determine the age at marriage for a girl child, but both parents are more likely to decide the age of marriage for a girl child in Ebonyi State 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 4.3 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 pointed out that their women usually give birth at TBAs' Homes. The possible reasons for the choice of the place of delivery in the community revealed that low cost and good services

accounted for the main reasons for the choice of place of delivery among most women across the two states. This suggests that the majority of Government Hospitals in the two states offer highly subsidized maternity 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 the 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 seek their ANC services at TBA's homes in Ebonyi State and less than one per cent in Plateau State. This suggests that even though a few number of pregnant women attended their ANC services at TBA's home, they mostly have their deliveries using modern health care centres.

Table 4.3: 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)
Who decides where a woman is to have baby 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)
Most means of accessing health facilities	Trekking	45 (14.4)	40 (11.3)	85 (12.8)
	Motorcycle (*Okada*)	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)
Time 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 a pregnant woman's delivery, the majority of respondents indicated that the husbands did so more frequently than the wives in both states, but the husbands of pregnant women in Ebonyi State are more likely to make such decisions than their counterparts in Plateau State. Even though there were differences in their proportions by state, this shows that the patriarchy ideology was prominent in both states.

The type of health facilities available at the community could also be a factor in VVF. Thus, the type of facilities available at the community level was ascertained. It was revealed that the majority of the respondents said they had PHC centres available in their respective communities. Relative to the cost of the patronage, the affordability of the facilities were also ascertained. The report shows that the PHC Care facilities were much more affordable as compared to other health facilities in their respective communities.

In another view, the means of accessing the available facilities in their respective communities was ascertained. The Table reported that the majority of the respondents stated that they used motorcycle to access the health care facilities with 69.1% in the overall and 80.8% in Ebonyi State and 58.6% in Plateau State. The time cover between their homes and health care facilities available in their communities showed that the majority agreed that it was less than 30 minutes to access the health facilities. This means that the distance between their homes and the facilities were not too far. However, the use of motorcycle by pregnant women to access health care facilities could be a significant factor in the etiology of VVF.

The study additionally examined whether female circumcision was still practiced at the community level with the belief that cultural practices might be a significant driver in VVF among women. The distribution of respondents by the practice of female circumcision, also known as Female Genital Mutilation (FGM), is shown in Figure 4.4. The vast majority of respondents (93.1%) indicated that they do not generally practice female circumcision. Similar patterns of FGM cessation were seen with the majority in Ebonyi (89.7%) and Plateau (95.6%). This implies that although the majority of respondents claimed they did not practice FGM, there are still a small number of persons who engage in the cultural practice in both states, which calls for attention.

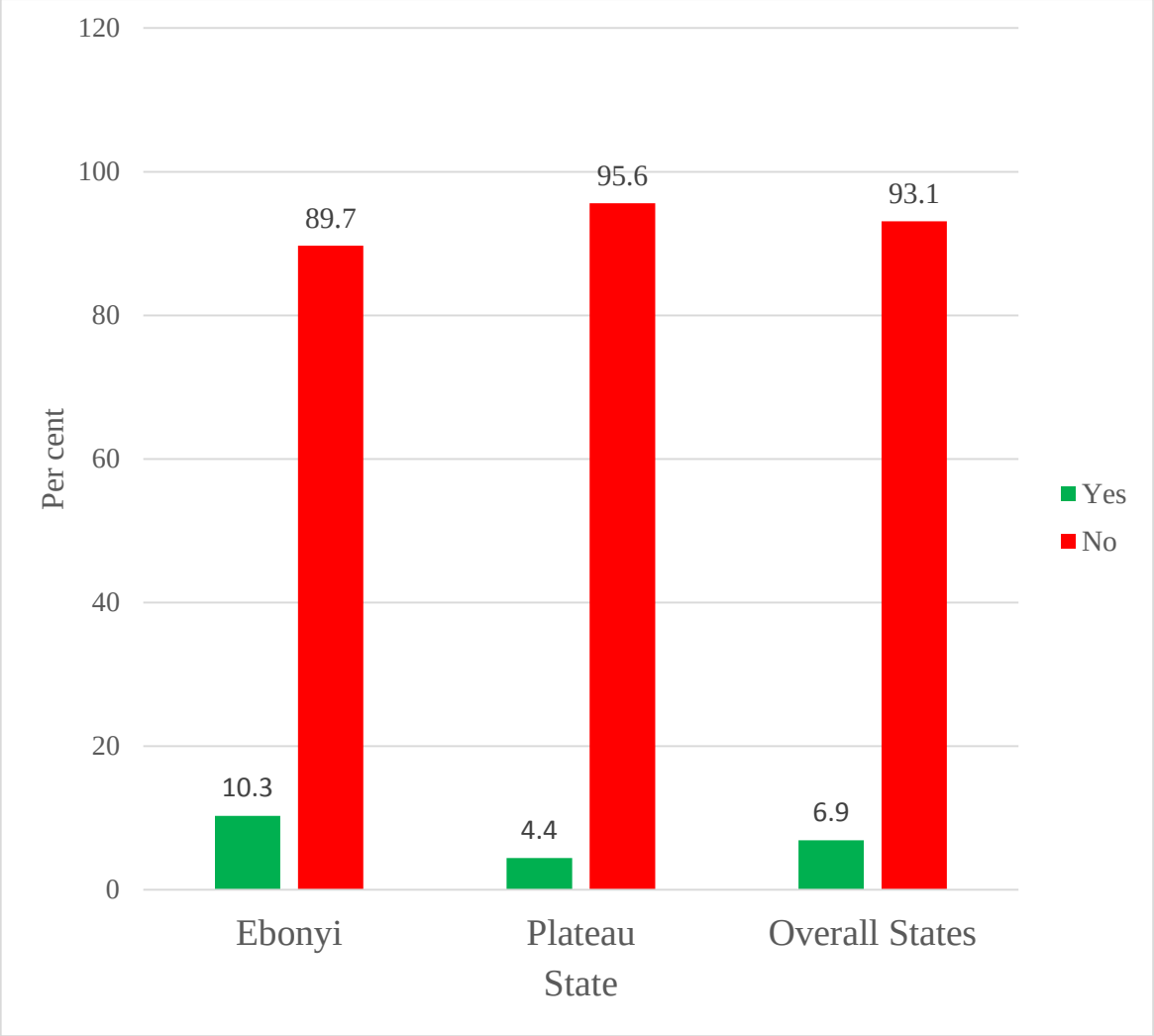


Figure 4.4: Distribution of Respondents by the Practice of Female Circumcision in the Community

Source: Field Work (2020)

Corroborating the determinants of VVF based on the responses from the qualitative findings, 16 themes associated with the causes of VVF were generated, namely; home delivery, hyeterectomy, obstructed/prolonged labour, big babies, insertion of herbs, fibroid surgery, cesarean section, reaction to drugs, painful mensuration, rape, patronizing TBAs and quack doctors, under-age marriage/early marriage, accident, evil spirit, ignorance and female genital mutilation. As Figure 4.5 illustrates, the themes of the causes/determinants of VVF have been diagrammatically presented.

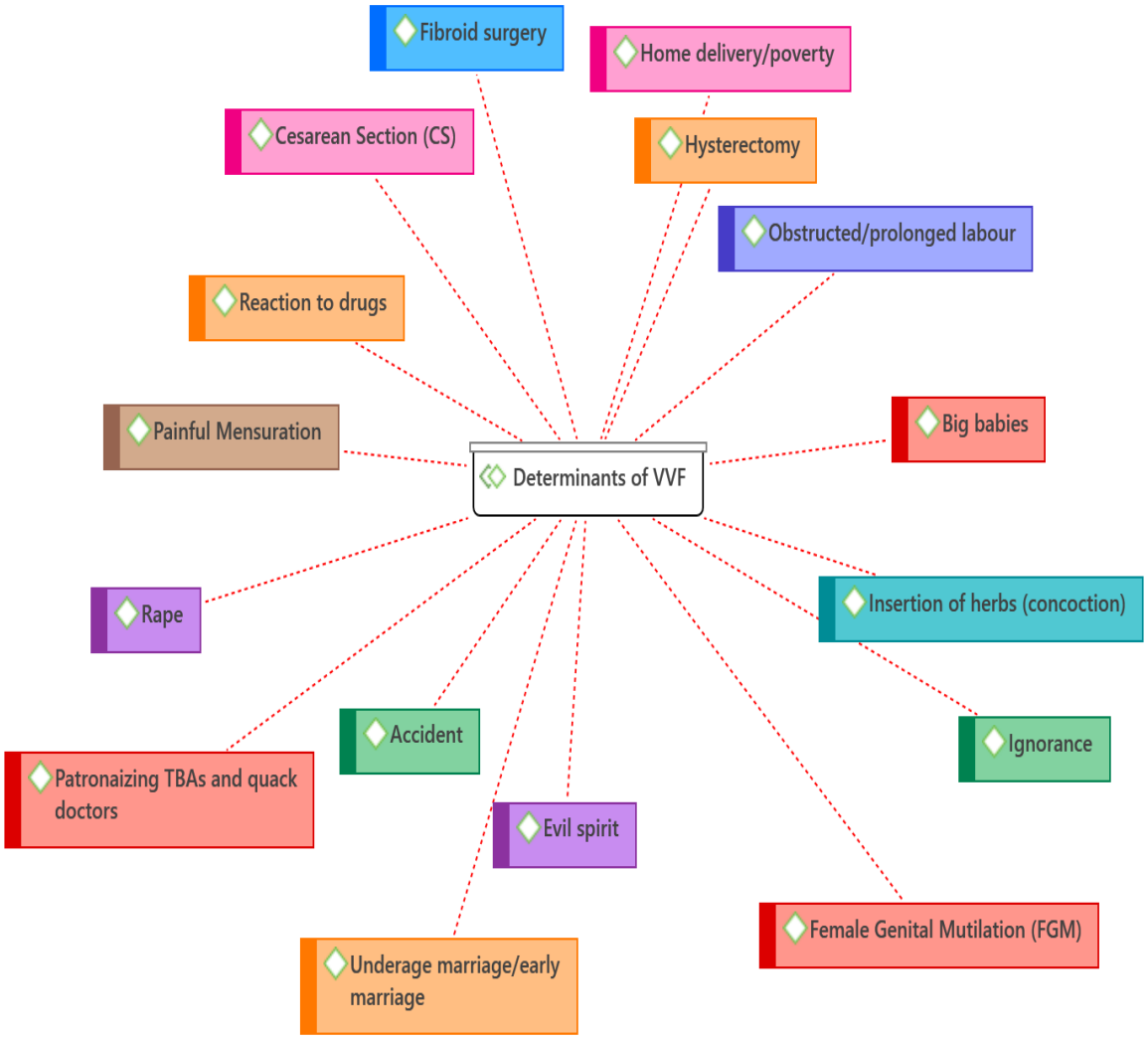


Figure 4.5: A Diagram Showing the Determinants of VVF among Patients Based on the Themes Generated From the Qualitative Studies

Source: Researcher (2020)

Under-age marriage/early marriage

Under-age marriage and 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 where the physiology of their body system may not be matured enough to carry a baby for safe delivery. According to the health professionals interviewed, it was found that certain socio-demographic characteristics of VVF patients and lack of proper management of labour during child birth determine the conditions of fistula. For instance, one of the health professionals interviewed stated that underage marriage, religious affiliation, illiteracy or ignorance in deciding appropriate health facilities for delivery influenced VVF among women. As he narrated:

> One of the major issues leading to VVF is underage marriage; but that is not an excuse because if there is proper obstetric care that will not lead to VVF. It is proper to recognize age at marriage (AM) but our different religions and culture have different views to this for instance the Islamic people especially in the far north say a woman is a woman when she gets married and not age. So how can you stop them from giving out their children in marriage at so to say young age? From the Christian side we notice the ladies getting pregnant out of wedlock (teenage pregnancy) and poor management of labour. I see illiteracy and ignorance as a base to this because when they get married and a woman gets pregnant they do not attend antenatal care and even if they do, the plan is often a home delivery (**KII/Health/ Professional/Plateau/2020**).

Another medical expert who was supported by a matron in Ebonyi State explained that prolonged/obstructed labour, female genital mutilation, congenital, complication from gynecological surgeries, rape, patronizing quacks (poor management of labour), ignorance, poverty, big babies, ceaseran section (C/S), hysterectomy, artificial insertion (concoction), accident and fibroid surgery could be determinants of VVF.

From the age of first pregnancy among the VVF patients, it is obvious that under-age marriage and early maariage resulted in VVF. According to this patient who said she was 19 years old when she had her first pregnancy, it could be deduced that age is a critical factor VVF. As she stated: *I was 19 years old and it was in 2019 and it was my first pregnancy. The baby is not alive. I have lived with the fistula for Just 5 months* (**IDI VVF Patient 20 years Ebonyi 2020).**

In the explanation of another patient from Plateau State whose age was around 11 years when she had her first pregnancy said thus: *... It was at that time around 2008, I have come here two times for this repair, I came 2008 and 2010, but the surgery was not successful. I have lived with VVF for 12 years* (**IDI VVF Patient 24 years Ebonyi 2020).**

Relative to underage birth or early marriage, there seems to be physiological challenge during childbirth regardless of the number of pregnancy of a woman. According to a respondent who was 20 years old when she developed VVF, it was stated that she was on her fourth delivery when she became aware of the urine following the operation (CS). As she noted: *When I was 20 years, on my 4th delivery, I noticed the urine immediately after the operation* (**IDI VVF Patient 28 years Ebonyi 2020).**

Due to the undeveloped cervix, an adolescent woman or girl is more likely to develop VVF in subsequent pregnancies even though she did not have the condition at the time of her first birth. For instance, when a respondent was asked when she first had VVF, she said that she was 19 years old when she gave birth to her fourth child and had lived with the condition for six months. *I developed VVF at the age of 19 years during my 4th pregnancy (multiparous). I have lived with VVF for 6 months* (**IDIVVF Patient 19 years Plateau 2020).** In another respondent who was 18 years old, it was noted that she developed it at the age of 18 years. In her statement: *I developed VVF at the age of 18 years during the birth of my first child (primiparous). I have lived with it for 2 years* (**IDIVVF Patient 20b years Plateau 2020).**

A respondent further mentioned that she had lived with VVF for more than two years at the age of barely 22 when it occurred during her second pregnancy. She noted that: *I developed VVF at the age of 22 years. I have lived with it for about two years. It happened in my second pregnancy (multiparous) and the child died in my womb before the 9th months* (**IDIVVF Patient 25 years Plateau 2020**). Also in another respondent, it was stated that: *I developed VVF at the age of 20 years during my first delivery (primiparous) and lost the baby. I have been living with it for 5 years now* (**IDIVVF Patient 25b years Plateau 2020).** In another respondent who was 21 years old when she developed VVF, it was stated that it was developed at her fifth pregnancy. As she explained: *I developed VVF at the age of 21*

years in my fifth delivery (multiparous) my babies die few days after delivery. I have lived with this condition for 9 years **(IDIVVF Patient 30 years Plateau 2020).**

It may be inferred from the submissions of the medical professionals and the average age at which respondents first experienced VVF that women's VVF is determined by age. In fact, it is clearly evident that adolescents, especially those under the age of 18, are more susceptible to the risk of VVF because their cervixes are underdeveloped and may not be fully matured for a safe delivery during childbirth, in contrast to adults whose cervixes are developed and fully mature for a safe delivery during childbirth.

Home delivery/poverty

Home delivery and poverty were also found to be determinants, according to the caregivers and medical professionals. This caregiver's explanation highlighted home birth as the dominant reason in women's VVF. The caregiver added that although if the majority of our parents were born at home, it is still important to recognize the danger signs that should prompt one to refer a patient to the hospital. He explains:

> I will not totally frown at home delivery because majority of us and our parents were born at home but importantly recognizing the danger signs that should make one refer a patient to the hospital is not known. Lagos has overcome that aspect. There are maternity homes run by men and women with different applications; some run with prayers, they pray into water and drink. Some others may call a person with some sorts of powers which they will just rub on the woman and she will deliver **(KII Health Caregiver Plateau 2020).**

One of the respondents who was interviewed provided evidence to corroborate the aforementioned statement, claiming that she truly went into labour at home and made no attempt to attend any antenatal care services because her parents had determined she would give birth at home. *When I get pregnant I did not go for antenatal visits and my parents decided I was going to give birth at home* (**IDIVVF Patient 16 years Plateau 2020).**

Home delivery has its own drawbacks in a number of areas. Without a woman's knowledge, it could cause a prolonged labor, bleeding, or other difficulties. For instance, one of the respondents mentioned that she gave birth at home, but she also stated that she laboured

there for two days prior to giving birth and s he started leaking urine soon after the delivery. This implies that she subjected herself to untrained birth attendants who certainly made the delivery of the baby more difficult.

> When it was time to deliver I labored at home for two days and I finally gave birth. The delivery process was difficult; two women put hands into my vagina to help the delivery. After everything I started leaking after two days. How wouldn't I get 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 **(IDIVVF Patient 30 years Plateau 2020).**

This respondent described her experience, saying that she went through three days of labor before giving birth at home. Soon after giving birth, she realized she was having difficulty urinating. As she put it:

> I started labour at home and labored for three days but still gave birth at home. After delivery I started experiencing leaking urine. At first I thought it was ordinary water before I noticed it had offensive smell and I could not urinate on my own. The leakage was not coming out fast. After the VVF I still gave birth 3 times on my own and they are all alive (this could lead to more complication for some other women because doctors advise that further deliveries should be through CS (**IDIVVF Patient 30a years Plateau 2020).**

This implies that having a home delivery not only makes a woman's labour last longer, but also has negative impacts on the mother and the newborn after the birth. On the one hand, this suggests that maternal morbidity is unavoidable, and on the other, it predicts that child morbidity or mortality is imminent.

While it is clear that some pregnant women choose home births to hospital births owing to cost and traditional beliefs, other pregnant women who intended to give birth in a hospital were unable to do so due to the distance they had to travel to get there. One of the VVF patients indicated that she wanted to give birth at the hospital but that the distance she had to travel made it unfavorable for her to do so. Instead, she experienced labour while traveling and eventually gave birth inside a house. She therefore attributed the cause of her VVF to that type of delivery that was not performed in a hospital. She stated:

> I gave birth on the road to the hospital; the hospital is far from my village so while on our way to the clinic the baby was ready to come out so we

> stopped and entered a house on the road. After the delivery we went back home and could not continue to the hospital due to distance **(IDI/VVF patient/25 years Old/Plateau/2020**).

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

Ignorance

Ignorance could be seen as an illness that causes VVF, because it causes other elements that automatically result in VVF. A health care provider who was interviewed claimed that ignorance is a catalyst for other issues like illiteracy, FGM, underage marriage, etc. that lead to VVF. In the statement of this participant:

> I see children getting married and getting VVF due to immature body structure and wrong methods of child childbirth. One cannot question culture then what about using the clinics at the right time. The truth is ignorance, lack of education and poverty play a major role in all. They are so into culture and then put their lives in danger. Some of them complain of lack of money for hospital delivery but those who have it still do not go to the hospital but want to give birth at home and the when they have tried at home and cannot put to birth they now come to the hospital and then when it results to VVF you hear them say the doctors touched where I urinate during CS. Female genital mutilation (FGM) is another factor leading to VVF and other obstetric complications; I cannot say why people still do that but as I said people are so into culture despite the harm it brings (**KII Health Caregiver Plateau 2020).**

Another respondent went on to explain that underage marriages began as a result of illiteracy and ignorance, and that after that, women became pregnant without visiting ANC services to prepare for childbirth. They turn to home delivery as a result, which may be harmful to their health. As he narrated: *I see illiteracy and ignorance as a base to this because when they get married and a woman gets pregnant they do not attend antenatal care and even if they do, the plan is often a home delivery* (**KII Health Caregiver Plateau 2020).**

In another respondent who stated that she refused to go to the hospital due to her husband decision and ignorance, it was explained that:

> I gave birth at home because my husband refused hospital. You know our husbands of today if we tell them about hospital birth they will refuse.

> My husband always complains about finance. He told me I am not a strong woman but a lazy one and I should me strong and give birth at home. I lost four babies due to this (**IDIVVF Patient 30a years Plateau 2020)**.

It is appropriate to mention here that couples' ignorance and illiteracy are factors in VVF. First, it prevents a woman from understanding the importance of antenatal care visits, and second, the husband is unaware of the consequences of a pregnant woman forgoing antenatal care. Some pregnant women are forced to deliver at home as a last resort because they are unable to understand the need of antenatal care services, especially hospital births. This could prolong labour and cause additional pregnancy complications that may necessitate VVF.

Obstructed/prolonged labour

Many VVF patients in this category experienced it as a result of a difficult or protracted labour. According to a health expert who was interviewed, the traditional idea that a woman should give birth at home without going to the hospital is responsible for most protracted labour. The fact that other women in their community are also doing this is considered as a source of pride. Given the Fulani scenario by the interviewer, stated that:

> VVF is mostly caused by obstructed/prolonged labour. The fulanis especially believe that a girl aged between 10-15 years can give birth at home even without going to the hospital. Some will say their parents scolds them saying there is no need to go to the hospital and also compare them with girls of their age who have also given birth at home by themselves. They are allowed to labour until it has become obstructed and prolonged before they rush them to the hospital by then harm has already been done. We have cases of VVF due to circumcision, also women who want to get rid of fibroid go to herbalist and get different concoctions they introduce to their vagina then complications will arise such as closure where a man cannot penetrate and some of these herbs go into the urethra causing damage hence VVF (**KII Health Caregiver Plateau 2020).**

A woman who had an obstructed labour as a result of going to a quack but then turned to CS reported that when she had labored for hours and no longer had the strength to push, experts were sent in to provide emergency obstetric care in another facility. It was after the emergency care she started having vaginal leaks as a result of this. In the statement of this respondent:

> It started after the operation of child birth/delivery. Labour started to me 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 check me and said is not yet time for me to deliver, she ask 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 more harder, that the head of my baby is closed, but when they see that I cannot push again, no strength to push again, my husband look for bike and carried me to a private hospital at Ezzamgbo. After observing my condition, they referred me to a higher hospital, FMC Abakaliki when we reached to FMC Abakaliki, immediately I rushed 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 2020).**

Despite the fact obstructed labour is a cause of VVF, the attitudes of the clinical professionals may also be a contributing factor in the prolonged labor. One of the respondents stated that because there was no doctor available to treat her right away, her labour took hours to complete. The outcome was that she had emergency obstetric care through cesarean, and after that leaks started. She stated:

> My labour lasted longer than usual and when I went to the health center the doctor was not around and he has wasted much time before he came to attend to me. I noticed the urine immediately after the operation. At first I thought it was a normal thing after surgery but when I noticed it was urine I thought the operation wound me at the process thought may be that the baby wounded me or the doctor that did because he was rushing to do the operation (**IDI VVF Patient 28 years Ebonyi 2020).**

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 to me around 8am, went to the maternity home around 12pm, stay there till around 4pm, no delivery, my husband came and took me to FMC Umuhia, when we reached there, we discovered they are on strike, we left to a private hospital Mbaise, the doctor said that he did not have engine/machine used to aid delivery, we went to another hospital, at that one, they did not accept me, we left to the last place where they admitted me and to cesarean section immediately after then, I don't know

> what happened again according to my parents, they said, I stayed for 3 days before I regain strength and came back to life, after discharging me, I discover that am now leaking urine, 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 went and do scan but they did not see anything, I went to another hospital at Aba, where white people see patient, they also referred me to Ebonyi State again (**IDI VVF Patient 33 years Ebonyi 2020).**

Another respondent from Ebonyi State shared her experience, saying that despite going to a modern facility for delivery, she did not go early enough to receive the required medical care. She therefore experienced prolonged labour, which after two days of delivery resulted in urine leakage.

> My labour experience started at home, I laboured for hours before I went to health centre where I use to attend antenatal, I still labour additional 8 hours before they referred me to FMC Abakaliki where I was immediately done EMLCS and I was delivered of a live female neonate. I noticed the urine leakage 2days after delivery. I was placed on catheter for 4 weeks before they referred me to this place after removal of the catheter and they found out that am still leaking urine (**IDI VVF Patient 34 years Ebonyi 2020).**

From another participant in Plateau State, prolonged labour, VVF was attributed to prolonged labour: *Labour started and I was to give birth at home; when I labored for two days then decided to take me to the hospital and a cesarean section was done and I birth a dead child. After the delivery I noticed I was leaking* (**IDIVVF Patient 16 years Plateau 2020).**

In another narration, it was noted that:

> When the time to give birth came, I labored for a long time and could not give birth; this got complicated and then I was referred to the bigger hospital. I travelled long distance but gave birth at the entrance of the hospital (still birth). After the whole process I began to leak two days later. The hospital told me I was sick and would need treatment (**IDIVVF Patient 17 years Plateau 2020).**

As this respondent added: *When labour started, I stayed at home for a day before we went to the hospital. When we got to the hospital I delivered myself and we were discharged without the hospital knowing. It was when we got home that we found out I was leaking* **IDIVVF Patient 18b years Plateau 2020).**

In the explanation of this respondent who laboured for three days, it was stated that:

> When it was time to give birth I labored at home for 3 days but when it became difficult to give birth I was then taken to the hospital. I gave birth myself but after the delivery I started leaking urine. At first I was wondering why I did not feel pressed after delivery then after few hours it started coming out without control. I told my family and they said I had issues with where I pass urine. Immediate I was referred to this center but did not have money to come (**IDIVVF Patient 20b years Plateau 2020).**

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 labours that resulted in urine leakage were brought on by the attitudes of some women attitudes toward professional obstetric care, others were brought on by the unavailability of skilled healthcare professionals to attend to them as at when due. Hence, prolong labour is inevitable.

Female Genital Mutilation (FGM)

One of the factors contributing to VVF in women was also discovered to be Female Genital Mutilation (FGM). The cultural practice of female circumcision led to VVF, according to a statement given by one of the health professionals interviewed. , In addition to the cultural practice of female circumcision being a cause of VVF, he also noted that some women who visit herbalists to get rid of fibroid do experience complications as a result of the herbs' ability to constrict the urethra.

> We have cases of VVF due to circumcision, also women who want to get rid of fibroid go to herbalist and get different concoctions they introduce to their vagina then complications will arise such as closure where a man cannot penetrate and some of these herbs go into the urethra causing damage hence VVF (**KII/Health Professional/Plateau/2020**).

Another respondent who supported female circumcision as a contributing factor to VVF claimed that a nine-year-old girl's condition of VVF was brought on by the cultural tradition of female circumcision. She has been subjected to torture at an early age as a result. As she stated: *Another factor to VVF is circumcision; look at the 9 year old we have with VVF it was due to circumcision. They have put the little girl into so much torture at her young age* (**KII Health Caregiver Plateau 2020).**

Another respondent who agreed with the foregoing accounts observed that it was documented in the hospital records that a ten-year-old girl had developed VVF as a result of complications after female circumcision. In her statement:

> Hospital record states she developed VVF due to complications from circumcision. (Mother said) It started like rashes then led to an abscess that caused the leakage. When it started I taught it was a sickness that will go away like malaria and others but it did not (**IDIVVF Patient 10 years Plateau 2020).**

It is obvious from the above experiences of female circumcision leading to VVF that subjecting a girl child to female circumcision can lead to VVF. This is true because most female circumcisions are carried out by inexperienced traditional attendants who are unaware of the appropriate part of the vaginal to be cut off, especially in Africa in general and Nigeria in particular. It should, therefore, come as no surprise that the cultural practice of female circumcision has been banned and declared to be in violation of a girl child's fundamental human rights.

Cesarean Section (CS)

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

> It was after the C/S operation I had, one week after the removal of catheter, I noticed something like water gushing out on my leg, I was surprised labou started around 8am, I went to the hospital where I usually go for antenatal, I labour till around 11pm before the doctor do operation for me and before that my baby have died. Nothing came to my mind as the cause of it. I was surprised and I called the attention of the nurse on duty. The nurse called doctor and doctor said, it will stop; maybe my bladder is weak to retain the urine (**IDI VVF Patient 29 years Ebonyi 2020).**

Long labor could not be separated from urine leaks brought on by CS. According to the experience of one of the VVF patients, CS was performed on her after she had labored for more than 24 hours, and as a result, she had VVF. According to her:

> I noticed the urine leakage one week after CS operation. I laboured for more than 24 hours and my baby died inside my womb before the operation, I stayed for two months at the hospital, my husband abandoned me at the hospital and since then it has been difficult. Just imagine this

> situation without help. I was referred to this place from Parklane Hospital (**IDI VVF Patient 31 years Ebonyi 2020).**

One of the respondents in Ebonyi State confirmed the above experience by stating that it was only after the cesarean section that she learned she had uncontrollable urine leakage. As she noted:

> It was after the operation, I noticed the urine leakage immediately after the delivery, I complained to Nurse, the doctor said, it is in Abakaliki that I will go for the cure, I stayed for three weeks at that hospital before I was discharged, I thought it was not normal. I did not attribute it to anything, I was not feeling happy when the doctor says, and he cannot cure me (**IDI VVF Patient 41 years Ebonyi 2020).**

In the share of her experience, it was reported that CS made her to developed VVF after delivery, as she noted:

> I had my first experience of VVF in 2010, on my second delivery, I came here at that time and I was repaired successfully. I was advice to ensure I went through C/S on my next pregnancy, which I adhere strictly to their instructions. On 12th January, 2017, I had another VVF problem. I noticed the urine leakage after 3 days, when they remove the catheter. I was 41 years old and this is 2 years with VVF after my 4th delivery (multiparous) (**IDI VVF Patient 43 years Ebonyi 2020).**

From the respondents in Plateau State, similar experience of CS was stated 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 they touched where I do pass urine. That was when started having this problem. When it started I thought it was water that was coming out but the smell was different then the hospital said it was VVF (**IDIVVF Patient 25b years Plateau 2020).**

In support of the above respondent, the cause of the VVF for this patient was attributed to CS. As she narrated:

> It was on 24th of March that I deliver but the baby died inside my stomach. I laboured at home before I went to government health centre, we waited for doctor for several hours before he came and did operation for me, before then he said my baby was dead. My husband decides where to go for child birth because he is the one paying the bills (**IDI VVF Patient 28 years Ebonyi 2020).**

Based on the above narratives, there are two elements that help cesarean sections result in VVF. One is that it is apparent that there was extensive labour before the CS were performed. It is perhaps safe to argue that extended labour and CS do not exclude one another as possible causes of VVF. This is because the majority of CS cases involving VVF patients were brought on by prolonged or challenging labours, which may be accompanied by complications or VVF. Second, it is possible that not all of the CS procedures are being carried out by trained gynecologists. In view of this, leaking of urine was inevitable, and thus, VVF.

Hysterectomy

Instead of pregnancy complications, VVF patients have stated that hysterectomy was the cause of their current state of health. 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 fine due to pressure and was advised to remove it. It was in the course of the surgery that my bladder was touched. 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 (**IDIVVF Patient 47 years Plateau 2020).**

In the narratives of another VVF patient, the VVF condition was caused as a result of the surgery she had for cervical cancer and not as a result of childbirth. She explained thus:

> I developed VVF after a surgery due to cervical cancer. I thought my body has finished, that nothing is still working inside again, that my own has finished, I started crying until after 3 months, I went back to that hospital they say I should go to Abakaliki, they gave me referral letter, when I first came here, they said my B.P is high, I should go and come back **(IDI/VVF patient/55 years Old/Ebonyi/2020**).

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

Fibroid surgery

Fibroid surgery has been attributed to the condition of VVF among women. As one of the respondents narrated, it was fibroid surgey she had that eventually led to VVF. As she explained:

> It happened in 2016, I had a fibroid operation in February and March 1st I missed my period and went back to the hospital and the doctor said it was an infection. I was given drugs but it didn't work. Later the doctor said that blood is accumulating in my womb and a surgery needs to be done. After the surgery they told my husband that my vagina is tight and needs expansion so as to allow blood flow out freely hence the second surgery. After the surgery I noticed that the bed was soaked the doctor first taught it was an effect of the surgery and will stop afterwards but it didn't. I was later discharged and given a later date for checkup. The urine leakage continued but was not told what it was **(IDI/VVF patient/36 years Old/Ebonyi/2020**).

Aside from the fact that the respondent's fibroid surgery may have contributed to VVF, it is also clear from the narrative that there may be an issue with the fibroid surgery's procedures rather than a direct connection between them and VVF. The fact that the subsequent operation resulted in the situation of uncontrollable leakage may have been avoided shows that the initial surgery may not have been performed by a skilled medical expert.

Evil spirit/God's punishment

In the narration of a patient whose mother described as giving birth to her that way, VVF was ascribed to evil spirit. In the narration of her mother, it was explained that:

> We gave birth to her that way. At first we taught it was normal childhood bedwetting but at the age of four we realized it was not so but a problem since she could not control her urine even during the day. This is her 9th year with VVF. Think that from creation is was not properly formed. I was later told that it was caused by "*iska*" (spirit) because why a child should be born with this kind of problem (**IDI/VVF patient/9 years old/Plateau/2020**).

In another description of the determinant of VVF, this patient noted that evil/bad spirit caused her state of health. In her explanation when asked what was responsible for the VVF. She said that:

> Nothing again, although to me I thought it was an evil/bad spirit because our mothers that give birth to us did not experience this type of problems,

> during their own time. But the doctors explained this to me and told me it is VVF. Although I still feel it is a bad spirit (**IDIVVF Patient 20 years Old Ebonyi2020).**

In another viewpoint, the cause of VVF was attributed to punishment from God due to her mockery against those that have been affected before her own state of 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 was caused mine as a punishment or mocking her* (**IDIVVF Patient 35 years Plateau 2020).**

While it is obvious that clinical factors have a role in the causes of VVF in women, there are also supernatural factors. Indeed, the decision to seek assistance may be affected if the reasons of VVF are attributed to spiritual forces or the devil as punishment for sins committed. And if women are unaware of this aspect of the causes, 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 then 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 Old/Plateau/2020**).

From another corridor of 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 we 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 do not know anything about it and how it should be treated (**IDIVVF Patient 18 years Plateau 2020).**

In these these narratives however, there is a need for medical professionals who prescribed the medication used to wash their stomachs to establish the fact that VVF sufferers who

attributed the etiology of their condition to painful menstrual cramps confirm that it was as a result of the wash that led to their VVF. The implication of this is that a quack doctor must have been involved in the prescription of the drugs used for the washing of their stomach.

Patronizing TBAs and quack doctors

The patronage of some pregnant women of TBAs and quack doctors has been attributed to the cause of VVF by the patients. According to a health caregiver, mid-wives who were not professionally trained undertake deliveries of babies which eventually resulted in VVF. In his explanation:

> Many women who are not trained mid-wives take deliveries at home just because they have given birth to so many hence tagged 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 2020).**

In the explanation of another patient who stated that she delivered her baby at TBA 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 experience is 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. I ate what others ate at home nothing special **(IDI VVF Patient 34c years Ebonyi 2020).**

In the explanation of another patient who seemed to have patronized quacks, it was narrated that after her visitation to their clinics based on menstrual pain, urine leakage started and persisted.

> It was last year that my monthly menstrual flow stopped, I complained to a friend who took me to a herbalist and an unknown instrument was inserted through my vagina, then after the procedure, I noticed a leakage of feaces through my vagina, I went to a private hospital at Kwali, Delta State and had a pelvic surgery but the leakage still persisted and the menstruation still do not occur. I also visited about two other hospitals before St. Charles Boromeo Hospital Onitsha and I was referred to this centre for expert management. When it started I was confused and did not even know what to think but I knew it was not normal (**IDI VVF Patient 34d years Ebonyi 2020).**

In another patient interviewed, it was explained that the she gave birth at TBA but after that she could not control her urination. In her statement:

> Labour started me at home, I went to TBA home, I stayed there for two days, they did not take me to hospital, I pushed to deliver my baby until, I could not withstand any strength again to push, it got to an extent, I don't know what is happening again, all I noticed is that, the head of my baby is at the perineum. It was after 3 days that I regain myself and found out that am inside hospital, I looked around and noticed am actually in upstairs, urine soaked everywhere, I cannot walk, I had foot drop; I don't know what happened, I stayed for two weeks at that hospital before I was discharged, as I was going, am learning how to walk (**IDI VVF Patient 40 years Ebonyi 2020).**

In support of patients who patronized quacks and developed VVF, similar experience was shared by a patient who also attributed her ordeal to distance of being patronizing experts or referral as the case may but could not largely due to her distance. She said after her patronage of smaller clinic, she developed VVF. In her explanation:

> My place is very rural so when labour began I was going to the small clinic in my village to give me referral to a bigger hospital but they kept saying it was not labour (the small clinic must give a referral before the bigger hospital will accept one). As I could not get the referral a nurse who worked in a hospital helped in removing the baby. After I came back from her house I did not urinate for two days and on the third day, the urine started leaking out on its own. When it started they said it's the bladder that had issues because it hurts and burns me; they knew because someone in my community had it before. When it started I was scared especially when they said the place for urine was broken (**IDIVVF Patient 22c years Plateau 2020).**

In the explanation of another patient who patronized quacks and developed VVF, it was narrated that she always went for massaging but after delivery, she developed VVF. In her precise statement: *My pregnancy was normal. I did all my normal house work. We go to the massager/baby setter to check the baby. I gave birth to many children such that I cannot remember the actual number. But just two among them are alive* (**IDIVVF Patient 57 years Plateau 2020).**

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 the Plateau and Ebonyi States

are comparable. Despite variances in their magnitudes, similar patterns of factors have been seen 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 cesearean section in Ebonyi State than in Plateau State. Despite these differences in magnitudes, there seems to be similarities in the general causese of VVF among patients in both states.

The case study reports are shown in Box 4.1, which support the participants' perspectives on the causes of VVF. Participants from the two states highlighted underage marriage, home births, and cesarean sections (CS) as major causes of VVF.

Box 4.1: Case Studies Showing Underage, Home Delivery and Caesarean Section as Determinants of VVF

Early marriage/Underage

I got married at a very young age. I think I was just 11 years old and was given out in marriage without my consent. I don't know my father and my mother left me and went to marry in another village and my uncle whom I was staying without gave me out into marriage. … I had not even seen my menstruation before marriage. It started in my husband's house and I had not developed breast fully. I developed VVF in 1999 (at the age of 13, 20 years ago) in my first pregnancy (primiparous). I have lived with the condition for like 20 years (**Case Study/30 years Old victim/Ebonyi/2020**).

I got married at the age of 12; I started seeing my menstruation in my husband's house at the age of 13. After that I stayed 4 years before I got pregnant. I developed VVF at the age of 16 in my first pregnancy (primiparous) and I have lived with it for 13 years. The marriage was without my full consent. … I grew very fast physically hence early marriage (**Case Study/23 years Old victim/Plateau/2020**).

Home delivery/herbalist

I put to bed at hospital but it was after 2 days of long labour at TBA home, my pregnancy was not desired and the boy responsible denied me and refuse to accept me. During my labour, they took me to one old woman that use to deliver people of their babies. I laboured for 2 days before they took me to a private hospital, that time, I was nearly half dead, I don't even know when they took me to that hospital, it was after 3 days before I got myself and discover that am in the hospital (**Case Study/30 years Old victim/Plateau/2020)**.

It was last year that my monthly menstrual flow stopped, I complained to a friend who took me to a herbalist and an unknown instrument was inserted through my vagina, then after the procedure, I noticed a leakage of feaces through my vagina, I went to a private hospital at Kwali, Delta State and had a pelvic surgery but the leakage still persisted and the menstruation still do not occur. I also visited about two other hospitals before St. Charles Boromeo Hospital Onitsha and I was referred to this centre for expert management. When it started I was confused and did not even know what to think but I knew it was not normal (**Case Study/31 years Old victim/Ebonyi/2020)**.

Cesarean section/machine aid delivery

When labour started, I was taken to the hospital and labored for 2 days and then the health workers decided to do a cesarean section. When everything was set for it and was already in the theater the baby's head surfaced, I had already been given injections for CS. They had to put their hand and drag the baby out. I feel the hospital workers were careless and unqualified. I suffered a lot. When the urine leakage started I thought it was water from my womb that was coming out. I was discharged with that leakage without being told what it was by the practitioners. I went home with the leakage and stayed at home for over one month. During that period I was not agitated because I realized my sister in-law suffered VVF and said I should rest a bit before seeking treatment since I just came out of a stressful delivery (**Case Study/25 years Old victim/Plateau/2020**).

I noticed the urine leakage one week after C/S operation. I laboured for more than 24 hours and my baby died inside my womb before the operation, I stayed for two months at the hospital, my husband abandoned me at the hospital and since then it has been difficult. Just imagine this situation without help. I was referred to this place from Parklane Hospital (**Case Study/31 years Old victim/Plateau/2020)**.

I went to the hospital when I noticed labour, the hospital I registered for antenatal, the doctor said that the ultrasound he did has reached, he induced me and labour started immediately instead of him to deliver me gently, he used machine to draw the baby out, but the baby is not coming, he continued trying and at the period, I think that is when he wound my bladder. Since then, I have lived with urine leakage until last year when I develop heart/chest pain. I complain to my mother, she took me to their family doctor at Aba, the doctor said that God directed him to run every text on me, starting from my stomach, it was on the process of his investigation that he observed that am leaking urine, he ask me, then I narrate my story to him, it was at that place that he directed me with referral letter to this place for expert management (**Case Study/38 years Old victim/Ebonyi/2020)**.

4.3 Community Perception about Vesicovaginal Fistula (VVF)

The community perception about Vesicovaginal Fistula (VVF) was explored in this section. The respondents were first asked whether they have the knowledge of VVF through a-13 measure of community knowledge about VVF. Table 4.4 presents the distribution of respondents according to community knowledge of VVF variables. According to the distribution, more than half (52.0%) of those in Plateau State and 48.0% of those in Ebonyi State agreed that they were aware of uncontrolled urine flow from the vagina. Out of the 40 respondents who said they were aware of uncontrolled faeces leakage from the vagina, more than half (57.5%) were in Ebonyi State, while 42.5% were in Plateau State.

When respondents were asked whether they were aware that early marriage/under-age marriage could lead to vaginal leakages, more than half (54.5%) of the respondents in Plateau State agreed that it could lead to vaginal leakages, while it was only 45.5% of their counterparts in Ebonyi State that indicated of being aware. Out of the 640 respondents who were aware that using quack doctors during childbirth is a contributing factor to vaginal leakages, 53.0% were from Plateau State and 47.0% were from Ebonyi State.

Of the 489 respondents who indicated patronage of TBAs during childbirth causes vaginal leakages, 52.6% of them were from Plateau State, while 47.4% of them were from Ebonyi State. Of the 251 respondents who reported vaginal leakages after receiving home deliveries, 51.0% were from Plateau State and 48.7% were from Ebonyi State. In addition, further investigation showed that out of the 588 respondents who indicated that teenage pregnancies cause vaginal leakages, 50.3% were from Plateau State and 49.7% were from Ebonyi State.

When asked if cesarean sections during childbirth might cause vaginal leakages, 176 respondents agreed with the statement, with 55.1% of them coming from Plateau State and 44.9 % from Ebonyi State. Of the 552 respondents who agreed that lack of visits to qualified ANC workers contributed to vaginal leakages, 51.4% were from Plateau State and 48.6% were from Ebonyi State.

Of the 649 respondents who agreed with the claim that inserting herbs into the vagina during pregnancy causes vaginal leaks, 50.8% were from Plateau State and 49.2% were from Ebonyi State. Also, of the 657 respondents who indicated that accident can also lead to vaginal leakages, 50.7% of them were from Plateau State, while 49.3% were from Ebonyi State. Of the 397 respondents who indicated that the practice of female genital mutilation can cause leakages from the vagina, 53.1% of them were from Plateau State while 46.5% of them were from Ebonyi State. Of the 695 respondents who subscribed to the view that rape of a girl or woman results in vaginal leakages, 53.4% of them were from Plateau State, while 46.5% of them were from Ebonyi State. These suggest that substantial proportions of respondents in both states have the knowledge of VVF based on the community knowledge variables.

Table 4.4: Distribution of Respondents According to Community Knowledge of VVF Variables

VVF knowledge indicators	State of Residence (%)		Total (%)
	Ebonyi (%)	Plateau (%)	
Aware of uncontrolled leakage of urine from the vagina	48.0	52.0	639 (100)
Aware of uncontrolled leakage of faeces from the vagina	57.5	42.5	40 (100)
Aware of early marriage/under-age marriage leading to vaginal leakages	45.5	54.5	514 (100)
Patronage of quack doctors during childbirth results in vaginal leakages	47.0	53.0	640 (100)
Patronage of TBAs during childbirth causes vaginal leakages	47.4	52.6	489 (100)
Home delivery leads to vaginal leakages after birth	49.0	51.0	251 (100)
Teenage pregnancy results into vaginal leakages	49.7	50.3	588 (100)
Cesarean section during childbirth can lead to vaginal leakages	44.9	55.1	176 (100)
Lack of visit to professionally trained ANC personnel can lead to vaginal leakages	48.6	51.4	552 (100)
Insertion of herbs into the vagina during pregnancy can lead to vaginal leakages	49.2	50.8	649 (100)
Accident can also lead to vaginal leakages	49.3	50.7	657 (100)
The practice of female genital mutilation can cause leakages from the vagina	46.9	53.1	397 (100)
Rape of a girl or woman results in vaginal leakages	46.5	53.4	695 (100)

In an attempt to re-categorize community knowledge about VVF variables into three groups: LOW (0–4 knowledge variables), MODERATE (5–9 knowledge variables), and HIGH (10–13 knowledge variables); Figure 4.6 presents the results. While the majority (61.7%) of respondents had a moderate knowledge of VVF, there appeared to be a slight difference in the level of knowledge by state of residence. It was discovered that 66.0% of respondents in Plateau State and 56.8% of respondents in Ebonyi State had a moderate knowledge of VVF. This shows that the level of knowledge in the two states is essentially the same despite the discrepancies in their proportions

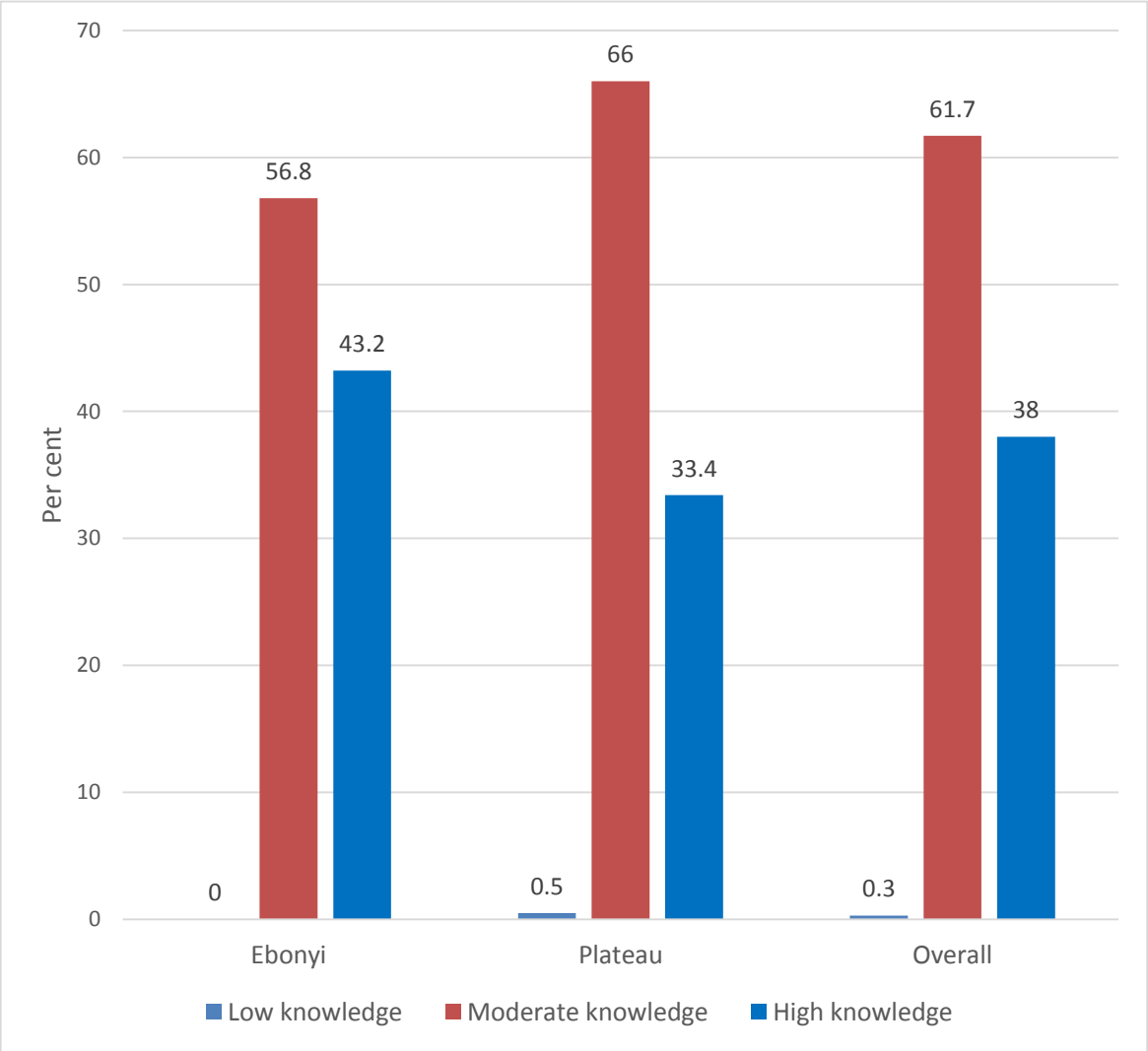


Figure 4.6: Percentage Distribution of Respondents by the Level of Community Knowledge about VVF

Source: Field Work (2020)

Further analysis of the knowledge of VVF at the community level is presented using binary regression model. Table 4.5 displayed the summary of the results. In the first model of the analysis, only the state of the respondents were included in the model. It was found that respondents from Plateau State (OR = 0.43, $p<0.05$) were less likely to have the knowledge of VVF than those in Ebonyi State.

At the second model of the analysis when the socio-demographic variables of the respondents were included, there was no statistically significant association between the state of respondents and the knowledge of VVF. However, those whose ages were between 20 – 24 years (OR = 0.187, $p<0.05$) and 30 – 34 years (OR = 0.254, $p<0.05$) were less likely to have the knowledge of VVF than those whose ages were between 15 – 19 years respectively. These results could mean that the condition of VVF may not be common among those who were advanced in their ages as compared to those who were less in age.

While there was no statistically significant association between marital status and the knowledge of VVF including those who were adherents of Islam, it was found that those who were free thinkers were 71.2 times more likely to have the knowledge of VVF than those who were Christians. This means that the beliefs of the respondents about the condition of VVF may influence their perception about VVF condition among the epidemiologic population. In the association of the respondents' occupation with the knowledge of VVF, it was found that none of the occupational status or distribution of the respondents was statistically significant with the knowledge of VVF. This implies that one's occupation does not really determine the degree of knowledge an individual could have of VVF in an epidemiologic population. Investigating the association between the monthly income earned by the respondents and the knowledge of VVF, it was reported that although those who earned between N18000 – N49999 had no statistically significant association with the knowledge of VVF; those who earned between N50000 – N99999 were 6.02 times more likely to have the knowledge of VVF than those who earned below N18000. This simply suggests that there is positive association between income level of the respondents and the knowledge about VVF.

Table 4.5: Association of Some Socio-demographic Variables and Knowledge about VVF at Community Level Using Binary Logistic Regression Model

		Binary Regression Model	
Variables	**Response categories**	**MODEL 1 [95% CI]**	**MODEL 2 [95% CI]**
State of residence	Ebonyi (RC)	1.000	1.000
	Plateau	0.430** [.288 – .643]	0.746 [.322 – 1.729]
Age	15 – 19 (RC)		1.000
	20 – 24		-
	25 – 29		0.187* [.035 – 1.002]
	30 – 34		0.254* [.067 - .953]
	35 – 39		0.957 [.309 – 2.966]
	40 – 44		0.813 [.271 – 2.440]
	45+		0.688 [.227 – 2.091]
Marital Status	Single (RC)		1.000
	Married		0.545 [.017 – 17.017]
	Separated		3.116 [.585 – 16.593]
	Divorced		9.519 [.683 – 132.681]
	Widow		-
Highest Level of Education	No formal education (RC)		1.000
	Primary		-
	Secondary		-
	Tertiary		-
	Others		-
Religion	Christianity (RC)		1.000
	Islam		29.010 [.861 – 977.444]
	Free thinker		71.224* [1.842 – 2753.9]
	Traditionalist		-
Occupation	Housewife (RC)		1.000
	Trading		0.542 [.030 – 9.771]
	Civil servant		0.170 [.015 – 1.956]
	Artisan		0.673 [.053 – 8.581]
	Farmer		0.251 [.019 – 3.372]
	Student		0.216 [.016 – 2.847]
	Others		0.655 [.025 – 17.379]
Monthly income	Less than N18000 (RC)		1.000
	N18000 – N49999		3.076 [.832 – 11.368]
	N50000 – N99999		6.024* [1.267 – 28.635]
	N100000 and above		2.054 [.262 – 16.121]
	Others		-
Number of children ever-born	1 (RC)		1.000
	2		4.313 [.786 – 23.658]
	3		1.536 [.438 – 5.388]
	4		1.303 [.441 – 3.853]
	5		1.781 [.656 -4.837]
	6+		1.027 [.375 – 2.811]
Spousal educational level	No formal education (RC)		1.000
	Primary		0.824 [.153 – 4.442]
	Secondary		0.097** [.032 - .298]
	Tertiary		0.122** [.048 – 309]
	Others		-
Model Chi square		17.302	209.875
-2 Log likelihood		536.760[a]	344. 187[a]
Cox and Snell R^2		0.042	0.407
Nagelkerke R		0.056	0.544

In the number of children ever-born by the respondents, it was found that there was no statistically significant association between the number of children ever-born and the knowledge of VVF. However, those whose spouse had attained secondary school education (OR = 0.097, $p<0.05$) and tertiary education (OR = 0.122, $p<0.05$) were less likely to have the knowledge of VVF than those who had no formal education. This could be that the prevalence of VVF may not be common among those whose husbands were educated large because of the knowledge of its prevention that could be higher than those who were of no formal education category.

Ascertaining the proportion of respondents who had heard about VVF condition in the epidemiologic population is important about the perception of community members across the two states. Figure 4.7 displayed the result of the percentages of those who have heard about VVF in the epidemiologic population by states. It was revealed that more than half of the respondents (56.0%) indicated that they have heard about VVF within the epidemiologic population in the overall while 44.0% of the respondents did not. In spite of the fact that more than half of the respondents have heard VVF in the overall, there were variations in their responses by states. For instance, while the majority of the respondents (61.7%) in Plateau State have heard about VVF, only 51% of those in Ebonyi State have heard VVF in their epidemiologic population. This could also inform the level of the incidences of VVF in the two states.

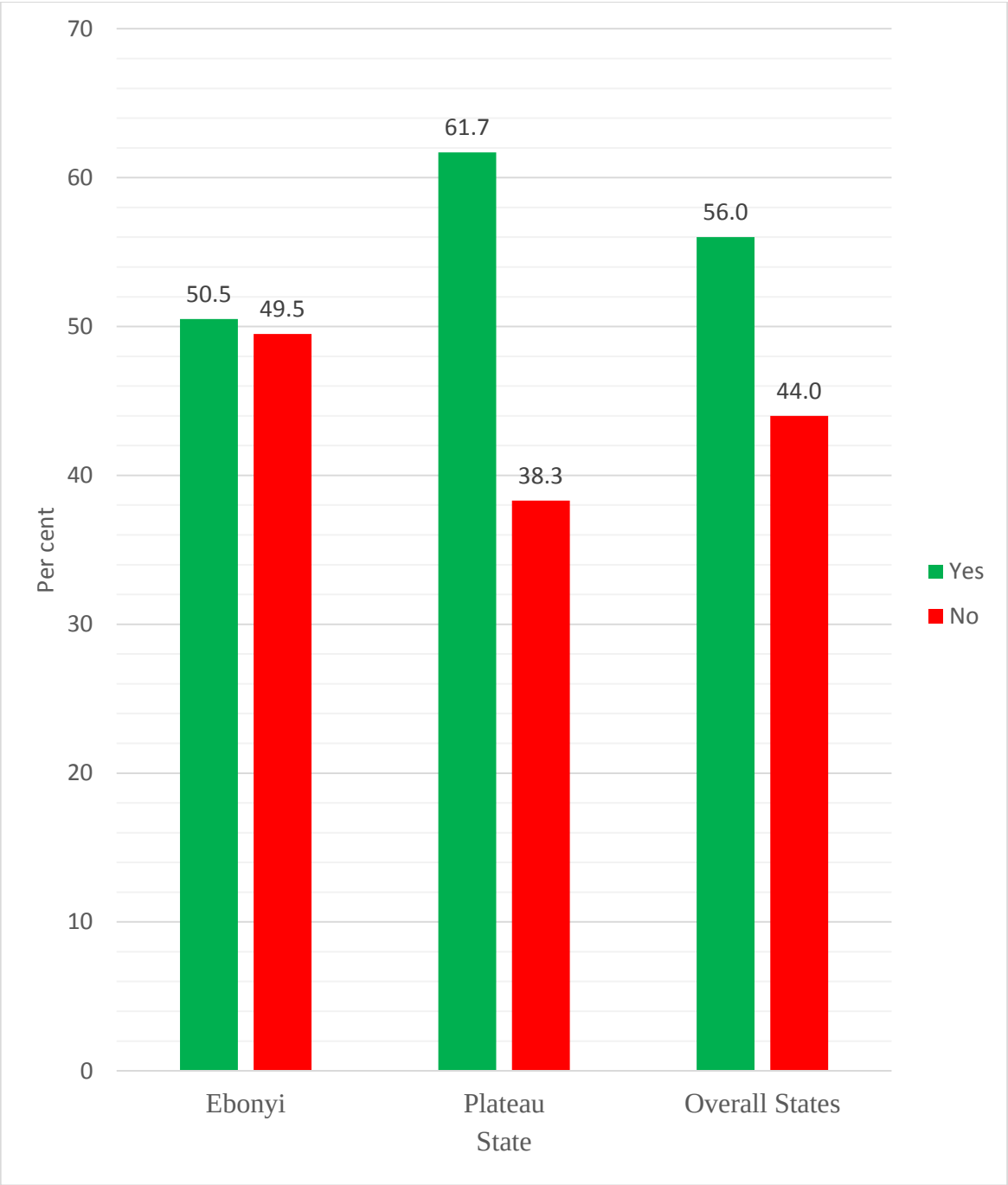


Figure 4.7: Percentage Distribution by those who Have Heard of VVF in the Epidemiologic Population

Source: Field Work (2020)

In the analysis of those who have heard about VVF in the epidemiologic population by socio-demographic variables of the respondents, a cross-tabulation of variables was performed and the results were presented in Table 4.6. In the age of the respondents, while those with age 30 – 34 years had the highest proportion of the respondents (23.4%) who have heard about VVF in Ebonyi State, those with age 25 – 29 years in Plateau State had the highest proportion (27.4%). The majority of married women in the sampled population have heard about VVF in their epidemiologic population – Ebonyi State (74.2%) and Plateau State (87.0%).

In the family type, the majority of those who were from monogamous family have heard VVF in the epidemiologic population – Ebonyi State (74.2%) and Plateau State (78.5%). On the information about VVF by educational attainment of the respondents, it was found that the majority of those who have heard about VVF had tertiary education (65.2%) in Plateau State, while the highest educational category of those who have heard about VVF in Ebonyi State only attained secondary school education (35.8%). This means that most of the information about VVF could be sourced via media accessible to highly educated respondents compared to those who were less educated.

In their religious affiliations, the majority of those who were Christians in both states have heard about VVF in their epidemiologic population as compared to those who were adherents of Islam. Occupationally, those in civil service had the highest percentages of those who have heard VVF in both states as well as those who earned below N18000. On the age at marriage, those who were between 25 and 29 had the largest proportions of who have heard about VVF in their epidemiologic population. These results suggest that information about VVF could be influenced by the socio-demographic characteristics of the respondents in the population.

Table 4.6: Distribution by those who Have Heard about VVF in the Epidemiologic Population and Socio-demographic Variables of the Respondents

Variables	Response categories	Ever-heard of VVF	
		Ebonyi (n=324)	Plateau (*n=371*)
Age	15 – 19	2.3	0.6
	20 – 24	4.7	6.4
	25 – 29	14.1	27.4
	30 – 34	23.4	18.5
	35 – 39	21.1	22.3
	40 – 44	17.2	12.7
	45+	17.2	12.1
Marital Status	Single	10.2	10.4
	Married	74.2	87.0
	Separated	3.1	0.6
	Divorced	1.6	-
	Widow	10.9	1.9
Family Type	Monogamous	74.2	78.5
	Polygamous	25.8	21.5
Highest Level of Education	No formal education	13.0	-
	Primary	21.1	8.4
	Secondary	35.8	26.5
	Tertiary	29.3	65.2
	Others	0.8	-
Religion	Christianity	92.9	61.1
	Islam	3.1	38.9
	Free thinker	1.6	-
	Traditionalist	2.4	-
Occupation	Housewife	8.6	3.8
	Trading	36.7	19.1
	Civil servant	37.5	30.6
	Artisan	-	19.7
	Farmer	12.5	0.6
	Student	4.7	20.4
	Others	-	5.7
Monthly income	Less than N18000	47.4	44.2
	N18000 – N49999	47.4	21.7
	N50000 – N99999	5.3	23.3
	N100000 and above	-	3.1
	Others	-	7.8
Age at marriage	Less than 15	9.6	2.8
	15 – 19	23.7	17.6
	20 – 24	35.1	31.0
	25 – 29	30.7	31.0
	30 – 34	0.9	15.5
	35+	-	2.1

Table 4.6: Distribution by those who Have Heard about VVF in the Epidemiologic Population and Socio-demographic Variables of the Respondents (*contd*)

Variables	Response categories	Ever-heard of VVF	
		Ebonyi (n=324)	Plateau (n=371)
Number of children ever-born	1	4.4	11.6
	2	8.8	26.8
	3	14.9	26.8
	4	28.9	19.6
	5	13.2	6.5
	6+	29.8	8.7
Age at first birth	Less than 15	3.5	0.8
	15 – 19	23.9	10.5
	20 – 24	35.4	27.8
	25 – 29	34.5	34.6
	30 – 34	2.7	19.5
	35+	-	6.8
Last place of delivery	Home	19.3	7.5
	Primary Health Centre (PHC)	45.9	17.9
	Traditional Birth Attendant	0.9	-
	Private Clinic	21.1	39.6
	General Hospital	12.8	14.2
	Others	-	20.9
Men's age	15 – 19	-	-
	20 – 24	1.1	-
	25 – 29	1.1	1.5
	30 – 34	3.2	6.8
	35 – 39	9.7	19.7
	40 – 44	12.9	30.3
	45+	72.0	41.7
Men's educational level	No formal education	16.2	-
	Primary	14.1	3.7
	Secondary	35.4	11.9
	Tertiary	34.3	84.3
	Others	-	-
Men's monthly income	Less than N18000	22.0	10.1
	N18000 – N49999	34.1	10.8
	N50000 – N99999	37.8	29.1
	N100000 and above	6.1	33.5
	Others	-	16.5

Furthermore, the number of children a respondent has and information about VVF showed that those with four children in Ebonyi State had the highest proportion, while those with children in Plateau State has the highest proportion. On the age at first birth, there seems to be equal distribution of the information about VVF, while it varied by last place of delivery. For example, those whose last place of delivery were PHC had the highest proportion in Ebonyi State and those with Private Clinics has the highest in Plateau State.

In men's age and information about VVF, the highest proportions were found in those whose ages were 45 and above, while the information seem to cut across all men's educational levels though with those in Plateau having the largest percentage. On the men's monthly income, there seems to be similarities in proportions of the distribution but those who earned higher income have heard about VVF more than those at the lower categories of income.

In addition to this, respondents were asked about their perception towards VVF victims whether positive or negative, Figure 4.8 shows that nearly all of the respondents suggested that they had positive perception of VVF towards the victims. In spite of the majority indicating that they had positive perception towards VVF victims, about 8.0% in both states still hold negative perception towards VVF victims, hence, the victims were to be blamed for their condition. Although those who perceived the victims negatively seem to be lower in the overall analysis, there were variations in their proportions by states. While 14.4% of those from Plateau State held negative perceptions towards the victims, only 2.6% of those from Ebonyi State were reported to have held negative perceptions towards the victims. This result may have implication on the care and support for the victims both at the household and community levels.

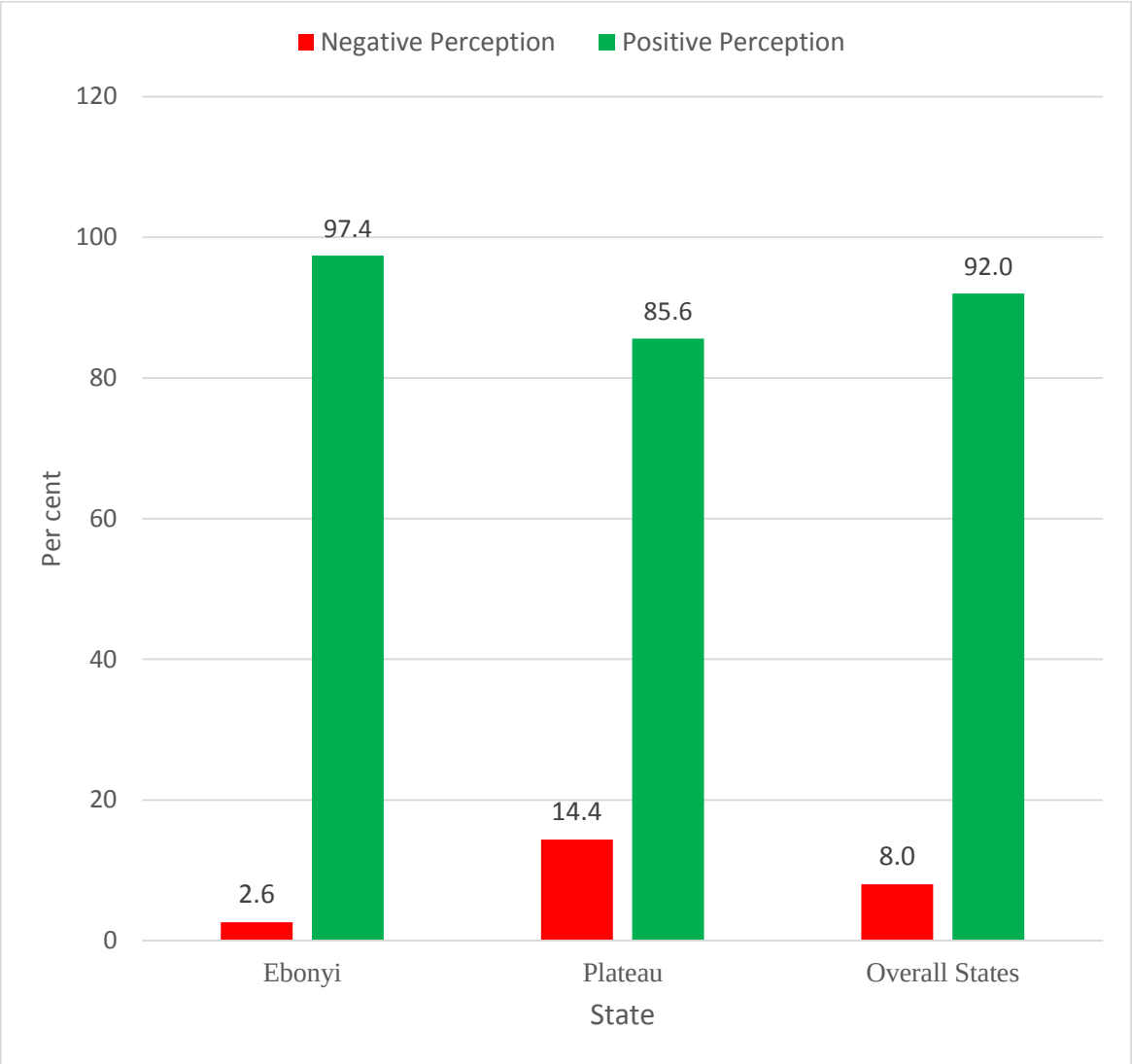


Figure 4.8: Distribution of Respondents by Community Perception about VVF Patients

Source: Field Work (2020)

Table 4.7 further shows the analysis of the relationship between socio-demographic characteristics of the respondents and community perception about VVF patients. It was revealed that there was significant relationship between state of residence ($x^2 = 23.228$, $p<0.05$), family type ($x^2 = 3.979$, $p<0.05$), highest level of education attained ($x^2 = 36.280$, $p<0.05$), occupation ($x^2 = 25.544$, $p<0.05$), monthly income ($x^2 = 11.359$, $p<0.05$), age at marriage ($x^2 = 65.605$, $p<0.05$) and community perception about VVF patients.

In addition to this, it was also found that there was significant relationship between the number of children ever-born ($x^2 = 13.555$, $p<0.05$), age at first birth ($x^2 = 42.275$, $p<0.05$), last place of delivery ($x^2 = 17.930$, $p<0.05$), men's educational level ($x^2 = 35.137$, $p<0.05$), men's monthly income ($x^2 = 22.798$, $p<0.05$) and community perception about VVF patients. These results suggest that these variables could be strong determinants of community perception about VVF patients in their respective locations.

Table 4.7: Relationship Between Socio-demographic Characteristics and Community Perception

Variables	Response categories	Community perception about VVF		Chi Square
		Positive perception (%)	Negative perception (%)	
State	Ebonyi	261 (97.4)	7 (2.6)	X^2=23.228
	Plateau	196 (85.6)	33 (14.3)	P=0.000
Age	15 – 19	9 (2.0)	1 (2.5)	X^2= 4.372
	20 – 24	37 (8.1)	-	P=0.627
	25 – 29	103 (22.6)	9 (22.5)	
	30 – 34	91 (20.0)	10 (25.0)	
	35 – 39	93 (20.4)	8 (20.0)	
	40 – 44	63 (13.8)	5 (12.5)	
	45+	59 (13.0)	7 (17.5)	
Marital Status	Single	51 (11.2)	7 (17.9)	X^2= 5.232
	Married	367 (80.7)	31 (79.5)	P=0.264
	Separated	4 (0.9)	1 (2.6)	
	Divorced	2 (0.4)	-	
	Widow	31 (6.8)	-	
Family Type	Monogamous	329 (73.9)	32 (88.9)	X^2= 3.979
	Polygamous	116 (26.1)	4 (11.1)	P=0.046
Highest Level of Education	No formal education	42 (9.4)	2 (5.0)	X^2= 36.280
	Primary	112 (24.9)	2 (5.0)	P=0.000
	Secondary	165 (36.7)	6 (15.0)	
	Tertiary	129 (28.7)	30 (75.0)	
	Others	1 (0.2)	-	
Religion	Christianity	359 (78.6)	34 (85.0)	X^2= 6.243
	Islam	91 (19.9)	4 (10.0)	P=1.000
	Free thinker	2 (0.4)	-	
	Traditionalist	5 (1.1)	2 (5.0)	
Occupation	Housewife	39 (8.5)	1 (2.5)	X^2= 25.544
	Trading	188 (41.1)	5 (12.5)	P=0.000
	Civil servant	99 (21.7)	16 (40.0)	
	Artisan	28 (6.1)	8 (20.0)	
	Farmer	34 (7.4)	2 (5.0)	
	Student	55 (12.0)	6 (15.0)	
	Others	14 (3.1)	2 (5.0)	
Monthly income	Less than N18000	225 (62.0)	15 (41.7)	X^2= 11.359
	N18000 – N49999	81 (22.3)	13 (36.1)	P=0.023
	N50000 – N99999	34 (9.4)	7 (19.4)	
	N100000 and above	3 (0.8)	1 (2.8)	
	Others	20 (5.5)	-	
Age at marriage	Less than 15	19 (4.6)	-	X^2= 65.605
	15 – 19	77 (18.8)	3 (8.8)	P=0.000
	20 – 24	185 (45.2)	9 (26.5)	
	25 – 29	111 (27.1)	10 (29.4)	
	30 – 34	13 (3.2)	12 (35.3)	
	35+	4 (1.0)	-	

Table 4.7: Relationship Between Socio-demographic Characteristics and Community Perception (*contd*)

Variables	Response categories	Community perception about VVF		Chi Square
		Positive perception (%)	Negative perception (%)	
Number of children ever-born	1	22 (5.5)	7 (21.2)	X^2= 13.555 P=0.019
	2	70 (17.4)	6 (18.2)	
	3	87 (21.6)	8 (24.2)	
	4	97 (24.1)	5 (15.2)	
	5	48 (11.9)	3 (9.1)	
	6+	78 (19.4)	4 (12.1)	
Age at first birth	Less than 15	6 (1.5)	-	X^2= 42.275 P=0.000
	15 – 19	60 (15.3)	1 (3.2)	
	20 – 24	177 (45.0)	8 (25.8)	
	25 – 29	118 (30.0)	8 (25.8)	
	30 – 34	25 (6.4)	11 (35.5)	
	35+	7 (1.8)	3 (9.7)	
Last place of delivery	Home	48 (12.2)	1 (3.1)	X^2= 17.930 P=0.003
	Primary Health Centre (PHC)	193 (48.9)	7 (21.9)	
	Traditional Birth Attendant	7 (1.8)	1 (3.1)	
	Private Clinic	74 (18.7)	14 (43.8)	
	General Hospital	48 (12.2)	5 (15.6)	
	Others	25 (6.3)	4 (12.5)	
Men's age	15 – 19	-	-	X^2= 1.842 P=0.871
	20 – 24	3 (0.8)	-	
	25 – 29	10 (2.7)	-	
	30 – 34	16 (4.4)	1 (3.4)	
	35 – 39	49 (13.4)	5 (17.2)	
	40 – 44	81 (22.1)	8 (27.6)	
	45+	207 (56.6)	15 (51.7)	
Men's educational level	No formal education	30 (7.9)	1 (3.2)	X^2= 35.137 P=0.000
	Primary	63 (16.5)	1 (3.2)	
	Secondary	150 (39.4)	1 (3.2)	
	Tertiary	138 (36.2)	28 (90.3)	
	Others	-	-	
Men's monthly income	Less than N18000	89 (25.1)	1 (2.9)	X^2= 22.798 P=0.000
	N18000 – N49999	121 (34.2)	5 (14.7)	
	N50000 – N99999	74 (20.9)	13 (38.2)	
	N100000 and above	48 (13.6)	10 (29.4)	
	Others	22 (6.2)	5 (14.7)	

While Table 4.7 was used to present the relationship between socio-demographic characteristics and community perception about VVF patients, Table 4.8 was used to predict the likelihood of the socio-demographic characteristics of the respondents on community perception about VVF patients. In the first model of the regression, state of residence was found to be statistically associated with community perception about VVF patients.

This means that those who were in Plateau State were 6 times (OR = 5.56, P<0.05) more likely to perceive VVF patients negatively than those in Ebonyi State. In the second model of the regression when other variables were included in the analysis, only the number of children a respondent had was significantly associated with community perception towards VVF patients. In this, those who had 4 children were found to be 94.4% less likely to perceive VVF patients negatively than those who had one child. This could be attributed to the belief that the higher the number of children born by a woman, the higher the possibilities of the children attracting more care and supports for the VVF patients, hence, reducing the likelihood of being perceived negatively by the community members.

Table 4.8: Association of Some Socio-demographic Variables and Community Perception about VVF Using Binary Logistic Regression Model

		Binary Regression Model	
Variables	**Response categories**	**MODEL 1 [95% CI]**	**MODEL 2 [95% CI]**
State of residence	Ebonyi (RC)	1.000	1.000
	Plateau	5.561** [2.191 – 14.118]	4.197 [.852 – 20.681]
Age	15 – 19 (RC)		1.000
	20 – 24		-
	25 – 29		-
	30 – 34		-
	35 – 39		-
	40 – 44		-
	45+		-
Marital Status	Single (RC)		1.000
	Married		0.288 [.010 – 8.406]
	Separated		4.293 [.010 – 1803.063]
	Divorced		-
	Widow		-
Highest Level of Education	No formal education (RC)		1.000
	Primary		1.817 [.053 – 62.573]
	Secondary		0.339 [.004 – 26.584]
	Tertiary		0.505 [.005 – 48.909]
	Others		-
Religion	Christianity (RC)		1.000
	Islam		0.641 [.133 – 3.100]
	Free thinker		-
	Traditionalist		8.494 [.339 – 212.947]
Occupation	Housewife (RC)		1.000
	Trading		0.261 [.014 – 5.009]
	Civil servant		0.562 [.038 – 8.212]
	Artisan		0.510 [.026 – 10.090]
	Farmer		0.935 [.029 – 29.861]
	Student		6.852 [.034 – 1394.027]
	Others		0.160 [.005 – 5.004]
Monthly income	Less than N18000 (RC)		1.000
	N18000 – N49999		0.891 [.158 – 5.004]
	N50000 – N99999		0.522 [.077 – 3.561]
	N100000 and above		1.204 [.055 – 26.220]
	Others		-
Number of children ever-born	1 (RC)		1.000
	2		0.272 [.036 – 2.063]
	3		0.189 [.022 – 1.614]
	4		0.056* [.004 – .799]
	5		0.116 [.006 - 2.134]
	6+		0.179 [.007 – 4.446]
Men's educational level	No formal education (RC)		1.000
	Primary		0.129 [.004 – 4.350]
	Secondary		0.326 [.006 - 18.005]
	Tertiary		5.862 [0.058 – 589.223]
	Others		-
Model Chi square		16.106	70.367
-2 Log likelihood		175.594[a]	121.333[a]
Cox and Snell R^2		0.048	0.192
Nagelkerke R		0.108	0.436

The perceived treatment options of VVF was ascertained at the community level, as shown in Figure 4.9, the majority preferred the general hospital to other treatment options as indicated by 93.3% of those in Ebonyi State, 65.6% of those in Plateau State and 81.0% in the overall. It also means that only 3.5%, 2.1% and 13.5% of the respondents preferred other options other than the general hospitals for the treatment of VVF by the patients. This also informs the severity of the condition and their perception about VVF in the epidemiologic population.

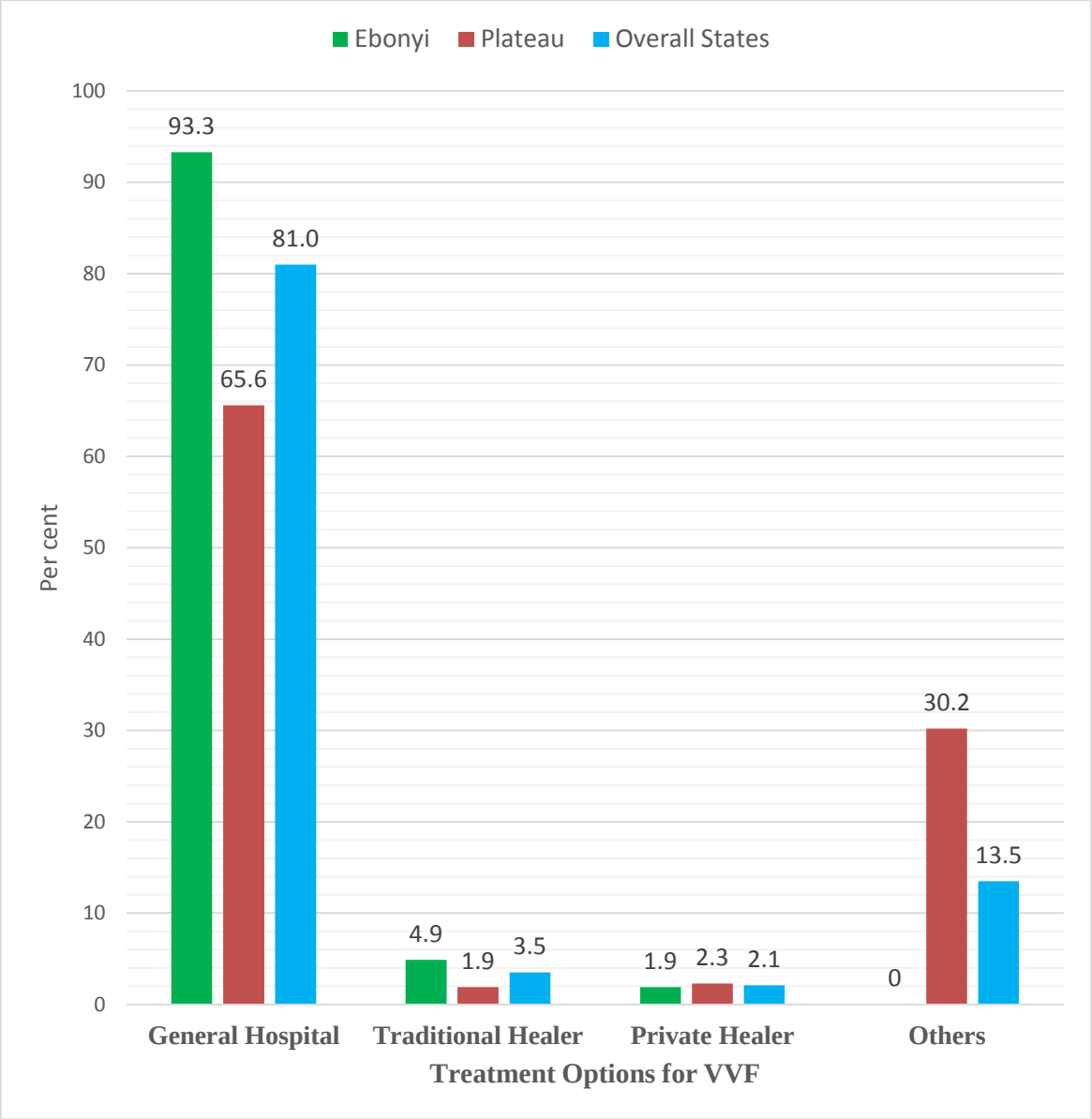


Figure 4.9: Distribution of Respondents by Treatment Options for VVF

Source: Field Work (2020)

Before highlighting the community perception about VVF from the qualitative findings, it is expedient to document the local names attached to the condition of VVF by states. While *yoyo* or *yoyo pisari* is a common local name called VVF in Plateau State and those who had their origins from the northern part of Nigeria, different local names are attached to the condition of VVF in Ebonyi State. These names include: *mgbabu-akpa, Nwamini, ete nwamini kwahuru, oria nwamini,* and *odoyi*. This suggests that there were variations in the local names called VVF in Ebonyi State compared to those in Plateau State. What does it mean? It means that the local name attached to the condition of VVF in each of the community would go a long way in determining people's perception about the condition toward VVF patients. In this regards, different themes on perception have been generated and these comprised positive perception and negative perception.

Positive community perception

In the positive community perception towards VVF patients, it was reported that they either conceal their condition so that no one will know or don't reveal it to anyone who might not be a close family. For instance, a patient described how no one knew and how only her relatives knew and how kind they were to her. As she rightly put it:

> Nobody is aware of my health condition except my husband and close relatives. All of them are very good to me, no different in relationship the same way they use to relate to me before, is the same now. My husband even cares for me now because of my illness (**IDI VVF Patient 20 years Ebonyi 2020).**

Another VVF sufferer stated that people were generally unaware of her condition, therefore she enjoyed good relationships with everyone without segregation or discrimination.

> I don't have any segregation or discrimination from anybody. Although people are not aware of my condition only my church members are aware, not all self, it is very few of them. They use to come and see me, console me and we pray together, I don't have any rejection from anybody (**IDI VVF Patient 29 years Ebonyi 2020).**

Another patient indicated that her acquaintances had offered her words of encouragement, and it was made clear that she had never faced mockery or rejection from anyone. As she explained:

> I use to receive words of encouragement and sympathy from people at the village, nobody is making mockery of me or rejects me, they console me with examples of others that have had similar case. I receive courageous words from them, both my church members and women in the community (**IDI VVF Patient 34 years Ebonyi 2020).**

From the perspective of another VVF patient, there is no difference in the way she interacts with community members, but she tries to avoid associating with people occasionally due to various issues inherent to the condition. *It's not really different but you know they'll be tired of me at some point but hide it. On my part I try to keep myself away sometimes* (**IDI VVF Patient 35d years Ebonyi 2020).** In the precise statement of a patient from Plateau, it was stated that she has positive relationship with everyone and nothing has changed. Precisely: *I have positive relationship with everyone, nothing has changed and my husband is still taking good care of me* **(IDIVVF Patient 25c years Plateau 2020).**

Another patient corroborated the aforementioned statement by claiming that she had perfect relationships with her friends and family, although having concerns that her marriage would suffer if the issue persists. *My relationship with friends and family is perfect. Although, I have fears that if these problem lingers my relationship especially with my spouse may be affected* (**IDIVVF Patient 36 years Plateau 2020).**

In another explanation from one of the case studies conducted, it was reported that she has a perfect relationship with everyone and nobody has rejected her or feeling withdrawn. As she described:

> I have not been rejected. The way people feel about me has not changed. And I also do not feel withdrawn or sad. Look at me I would not have been this fat and happy if I was not getting support. Although, my in-laws experience made them more supportive and understanding (**Case study VVF Patient 25 years Plateau 2020).**

Further analysis revealed that most community members sympathized with VVF patients rather than developing negative disposition toward them.

> Only my mother takes care of me, although, people in the community use to sympathize and give me something whenever they came to see me, St. Sylvanus Catholic Church 9th mile gave me 20,000, women meeting at 9th mile gave me 20,000 also, that is when am still living at the city but

> now, am with my mother at the village (**IDI VVF Patient 31 years Ebonyi 2020).**

In the view of another patient who said she was a discrete person and always spray herself with fragrance and dress neatly nobody was aware. And for those that were aware, they sympathized with her. As she narrated:

> I am always a discreet person, I dress neatly to work, I change my self always, spray perfume, nobody is aware of my health challenge except my close friends and relatives. So, for those that are aware, they sympathized and encourage me all the time (**IDI VVF Patient 43 years Ebonyi 2020).**

In another sympathetic situation, a respondent said her family members still accept her and she has not been rejected in any form. As she noted: *My family has accepted me with this problem, I have not really encountered any form of rejection or stigmatisation because I do not go anywhere I always stay at home for fear of getting disgraced* (**IDIVVF Patient 18b years Plateau 2020).**

A patient from Plateau State supported the above mentioned assertion by stating that both her spouse and her family members, who are always willing to be with her, including friends, have been very supportive in terms of giving her the financial support she has been relying on. She, therefore, concluded that t here have not been any insults from the husbands, relatives, or friends based on their positive disposition towards her.

> My husband has been very supportive, he gave me the money I have been using, my family members have been all around me too. My friends are still there they do not have issues with me. I have not been insulted and even if I have been insulted I have not heard with my ears (**IDIVVF Patient 47 years Plateau 2020).**

From the above narratives of positive dispositions of spouses, friends and community members towards VVF patients, it can be deduced that there are factors that influence the positive community perception people held towards them. One of these factors is that some VVF patients maintain a high standard of hygiene, second is that some did not disclose their condition to others, and a third is the care and support they receive from their close relatives. These indicate that, despite the frequent occurrence of unpleasant odours in VVF patients, personal attempts to maintain high standards of hygiene and how sympathetic close friends

and family members may be to the sufferer go a long way in shaping the relationship of others with the sufferers.

Negative community perception

In spite of the positive community perception towards VVF patients, there have been certain instances where this has not been the case. For instance, a matron at the VVF center claimed that many of them suffer because their relatives do not provide them with adequate care and support. As she put it:

> Many of these women did not receive adequate care from family, community while relationship with spouse is severed, family and friends may show empathy. But few women were cared for by their husbands to cope with the health challenges, bearing in mind that it was as a result of giving birth to their babies that resulted to the woman developing the fistula (**KII Matron Ebonyi 2020).**

While the matron appeard to have mixed feelings about how community treats VVF patients, others isolated them because the stench of their urine and referred them as witches. As she described: *I don't know, people are isolating themselves from me, saying am smelling urine, some are saying is witchcraft that time, but now that I know, they say is long labour that caused it* (**IDI VVF Patient 24 years Ebonyi 2020).**

In another expression of negative community perception, it was narrated by a patient that her relationship with other changed after she developed VVF to the extent that her husband rejected her. In her statement:

> My relationship with people changed after I developed VVF; my husband is in his house and I am in my father's house. As I left he got married again and with a child, he did not say if he has divorced me or not. When I get healed and God helps I will go back to my husband. I get ridiculed my people around me so I stay at home but sometimes I do not care and I go out. It hurts when people mock saying I am not ashamed I cannot stay in my husband's house me I cry a lot because I did not cause this to happen to me (**IDIVVF Patient 20b years Plateau 2020).**

From another patient who suffered abandonment, she was called different named and described by her husband as accursed. As she noted:

> They call me '*ashi'*. The people who gave me out in marriage abandoned me as my condition lingered. My husband called me cursed. He said he

> had no money for hospital bills. He rejected and divorced me and got married again. In the community only few people insulted me due to the fact that I was still small when I got VVF. I sometimes get angry at myself and feel rejected (**Case study VVF Patient 30 years Ebonyi 2020).**

Based on the foregoing experiences provided by the VVF patients, it would not be out of place to say that the negative perceptions people hold towards those who have the condition are a result of the stench of the offensive odours and the consequences of not being able to treat it promptly. While stigmatisation and isolation from the community are unavoidable consequences of the disease, spouse abandonment will be the end result. This implies that other psychological effects, such as depression, are inevitable and may even result in suicide if not managed.

VVF Patients' perception towards self

The way in which patients view themselves while they are ill can influence how the general public views their situation. While some of the patients are positive and hopeful about their situation, others feel negative/pessimistic and dejected by others. Based on these expressions, patients' perception towards self has been categorized into two sub-themes and they are highlighted as follows:

Positive self-perception/optimistic

From the perspective of VVF patients who feel positive and optimistic about their conditions, it was explained that at first they felt dejected since they isolated themselves from other people due to how other people complained about their illness. However, because of their optimistic attitude on the situation, they felt very hopeful that a cure was possible. As one of the patients narrated:

> It was before that I was feeling dejected, I usually isolate myself from people, I use to distance myself from people so that they will not hear or complain that am smelling, I was so depressed at that time but presently, I have received courage, I have seen other women having the same problem with me, I have also seen that my problem can be cured. I have hope now that after this surgery I will get well and associate freely with others (**IDI VVF Patient 29 years Ebonyi 2020).**

Another patient joined in to support the above patient, saying that she initially felt withdrawn but that after being admitted to the VVF center and seeing other affected women, she felt much better and more stable.

> Initially, I was feeling withdrawn and hated myself but since I came here, I saw other people suffering from same ailment, I received courage, because I have not heard nor seen anybody that have this problem before. I am feeling good and stable now (**IDI VVF Patient 33 years Ebonyi 2020).**

In the view of this patient who did not feel rejected any longer, she said, when she developed VVF newly she thought people will reject her but they never did that to her. As she stated:

> I am not feeling rejected any longer, there was a time I felt people will reject me, when it started newly, I thought people will be running away from me, because of the urine, but they never did, I rather received words of courage and advice from them; especially my church members and close relatives (**IDI VVF Patient 35b years Ebonyi 2020).**

In the explanation of another patient who noted that she did not experience rejection or isolation, rather avoid mingling herself with people, especially in the church said: *Indifferent, no rejection or isolation at all. I go to my farm anytime I want, is just meeting and churches that I withdrawn myself from, to avoid saying I smell urine.* **(IDI VVF Patient 34c years Ebonyi 2020).**

In the opinion of this participant who initially hated herself but later received courage from God, it was stated that:

> I have received courage from God, I don't think about marriage or about child again, my interest and focus now, is how to be healed and smell good again. It was before that, I hated myself by smelling urine all the places I got, it made me stay indoors (**IDI VVF Patient 41 years Ebonyi 2020).**

From the perspective of a-19 year old woman, it was stated that parents were responsible for her care but only felt bad because she felt that she had brought a lot of problems to her parents. As she narrated: *My parents are taking care of me. I just feel bad because I feel I have brought them a lot of problems* (**IDIVVF Patient 16 years Plateau 2020).** In the view of this participant in Jos, it was stated that: *I know I am sick but will get well. I really do not go out due to the leakage* (**IDIVVF Patient 19 years Plateau 2020).** In the same vein, another respondent said it did not affect her much. As she put it: *VVF has not affected me so much because my family are still caring and helping heal* (**IDIVVF Patient 30a years Plateau 2020).**

These accounts imply that the respondents' ages may have an impact on both how optimistic they are about their situation and how close they are to other significant people in the neighborhood. These results also suggest that, despite the fact that many VVF patients had poor self-perceptions at the onset of the illness, different strategies were later used to adjust the condition.

Negative self-perception/pessimistic

The majority of respondents had negative perceptions of their own condition. For instance, one of the VVF patients in Ebonyi State who was interviewed said she was unhappy and often irritated with herself. As she put it:

> I'm not happy, how this problem happened to me and my baby still dies, am always angry with myself but thank God am getting better, you people are trying very much to ensure we get better, I hope when they remove this catheter, I will be normal again I pray God will hear my cry and heal me. I don't like this smelling of urine all the time (**IDI VVF Patient 20 years Ebonyi 2020).**

Another VVF patient in Ebonyi State who was not always happy with herself reported that she felt ashamed and withdrew from social functions because she thought other people would easily notice her ordeal. In her statement:

> Well, what I always pray and ask God is quick recovery, quick healing, as for this sickness, am not happy for myself, I always feels ashamed of myself (started crying) I use to withdraw myself from people, I stopped going to social functions or where people can perceive my odour, am ashamed of myself (**IDI VVF Patient 30 years Ebonyi 2020).**

According to another patient who experienced extreme rejection and prayed for God's grace because no one stood by her—including her spouse, who abandoned her along with other family members—she felt completely abandoned. She mentioned: *I use to see myself as somebody being rejected, my hope of living is only God's hand, no support from anybody, my husband abandoned me, including all his relations, in fact, at times I use to ask why God created me this way* (**IDI VVF Patient 31 years Ebonyi 2020).**

In the viewpoint of a respondent from Jos, she narrated that she felt sad and always stay at home in order to avoid ridicule and that even she wants to go out she can not largely due to the problem of mingling with people around her. As she stated: *I feel sad most times*

and stay at home to avoid ridicule; even if I want to go out I cannot. I feel pity for myself and sad. I just do not mingle with anyone (**IDIVVF Patient 18 years Plateau 2020).**

Another respondent from Plateaus State claimed that because she had been rejected by many people before going to the VVF center for treatment, it was even thought that she had a condition that made her different from other villagers. As she noted: *I think I have been rejected by many but when I came to the VVF center I felt better because I saw people with same situation and we bonded unlike when I was in the village where I was different from every other person* (**IDIVVF Patient 22 years Plateau 2020).**

According to this respondent, she said she decided to stay indoor in order to avoid insults and ridicules. As she described: *With all the insults I decided to stay indoors with my child to avoid more ridicule. Sometimes I feel God has rejected me and cry most times* (**IDIVVF Patient 25b years Plateau 2020).** In the perception of another respondent, she felt that she was suffering from God's punishment due to what she had done in the past. As she noted: *I see my condition as a punishment for fornicating. I feel rejected and most time I stay on my own* **(IDIVVF Patient 27 years Plateau 2020).**

From the perspective of another patient, it was narrated that she was angry because of the mistake made by the healthcare provider. As she stated: *I feel angry because it was the mistake of the hospital; I wish I did not go for the surgeries. But I feel this is my last 'bus stop" I will get it done here* (**IDIVVF Patient 36 years Plateau 2020).**

In the case of this respondent who was so pessimistic with her condition, she said she was tired and prayed that she would not die in that condition. In her statement: *I got tired of thinking but pray not to die with this problem because I am getting old. I stay away from people and just remain indoors until something very important takes me out. It has not been easy but should I say I am used to it?* (**IDIVVF Patient 57 years Plateau 2020).**

Based on the above narratives, it is evident that VVF patients have been subjected to all kinds of social maladies, including segregation, spouse abandonment, stigmatisation, discrimination, dejection, isolation, and rejection. These were also based on the patients' unpleasant smells brought on by the uncontrollable urine leaks on the one hand, and the

countless delays they encountered before presenting their cases for competent and professional medical attention at the VVF facility on the other. This implies that while it is one thing for a patient to have caused the illness, it is quite another thing to act quickly in seeking qualified medical help. Without this, the situation would deteriorate and produce a stench that might cause, among other things, stigmatisation, rejection, and isolation.

Figure 4.10 depicts the different ways in which VVF patients have been seen negatively by the community. These expressions include segregation, abandonment, avoidance, stigma, discrimination, dejection, isolation, and rejection.

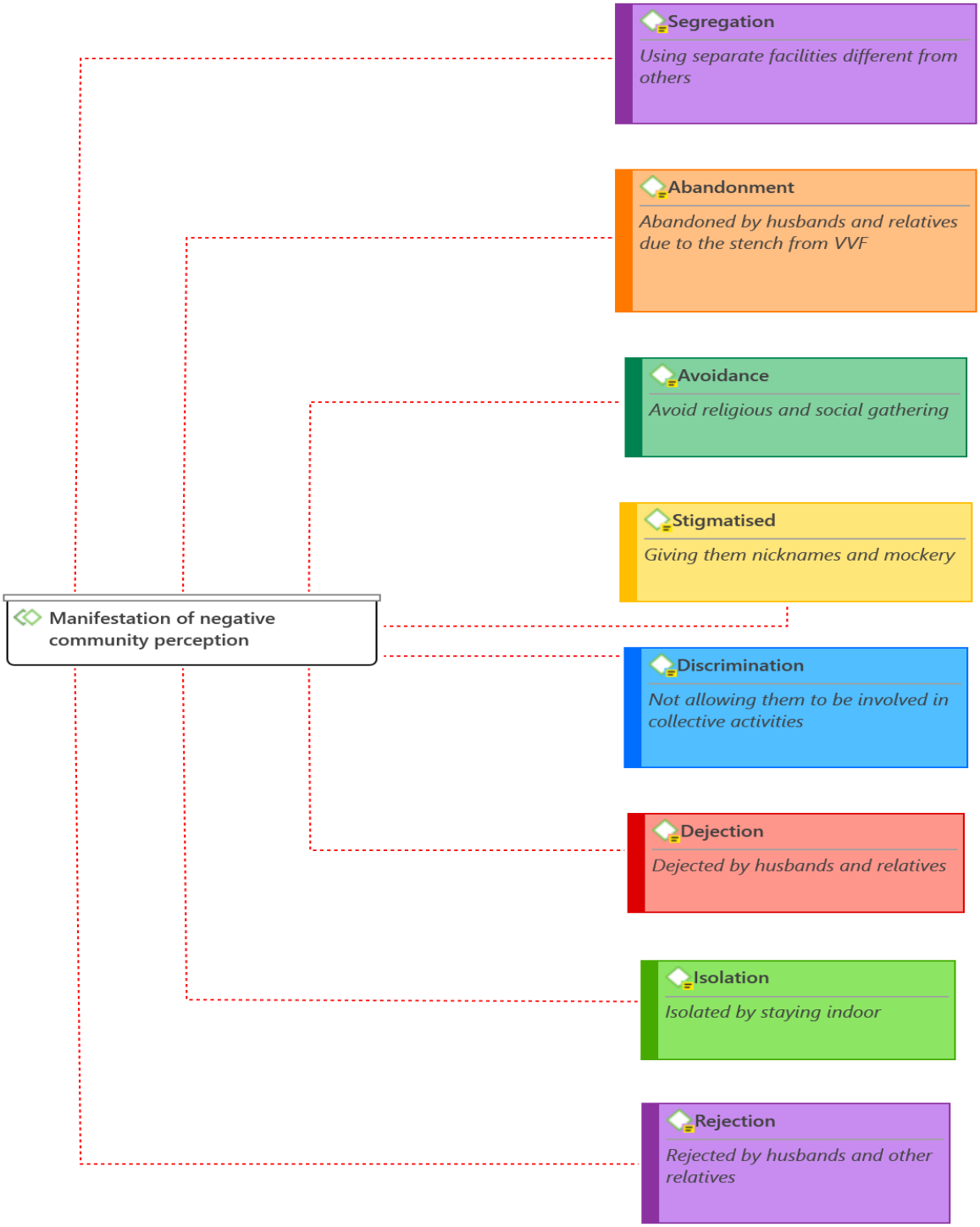


Figure 4.10: A Diagram Illustrating the Various Manifestations of Negative Community Perception Towards VVF Patients

Source: Researcher (2020)

4.4 Prevalence of Vesicovaginal Fistula (VVF)

In order to determine the prevalence of VVF in Ebonyi and Plateau States, the cases of VVF reported in 2020 medical records and female population recorded according to the Population Census report of 2006 were used. Thus, the prevalence of VVF in both states were calculated using the formula below as indicated in "(4.1)":

$$\text{PVVF} = \frac{PR}{P} \times \text{K} \qquad (4.1)$$

Where PVVF = Prevalence Rate of Vesicovaginal Fistula;

PR = Population at risk or reported cases of VVF at the hospital in the year 2020;

P = Total population of women based on 2006 Nigeria Population Census;

K = Constant (100,000).

To calculate the PVVF for Ebonyi State using the formula stated above,

The PVVF =?

PR = 136 (National Fistula Centre Abakaliki, Ebonyi State, 2020)

P = 1,112,791 (2006 Population Census)

K = 100,000

PVVF for Ebonyi State $= \frac{136}{1112791} \times 100000$

PVVF for Ebonyi State $= \frac{13600000}{1112791}$

PVVF for Ebonyi State = 12.22 per 100000

To calculate the PVVF for Plateau State using the formula stated above,

The PVVF =?

PR = 381 (Bigham Teaching Hospital Jos, 2020)

P = 1,607,533 (2006 Population Census)

K = 100,000

PVVF for Plateau State $= \frac{381}{1607533} \times 100000$

PVVF for Plateau State $= \frac{38100000}{1607533}$

PVVF for Plateau State = 23.70 per 100000

Based on the calculated prevalence rates of VVF in the two states, there were more VVF conditions in Plateau State (23.70 per 100000 women) than those in Ebonyi State (12.22 per 100000 women).

Having explored the prevalence of VVF by states of residence using hospital records, Table 4.9 further presents the prevalence rates of VVF by socio-demographic characteristics of patients in the two states. As the Table revealed, there were statistically significant relationship between age of the patients and their states of residence (x^2 = 27.28, p<0.05). This means the age of respondents have significant impact on the condition of VVF according to the state of residence of the affected persons. More so, it was revealed that although there was no statistically significant relationship between marital status of VVF patients and the state of residence, yet there were more married patients who were affected with VVF in both states with Ebonyi State having 79.4% of married patients and Plateau State having 66.9%. This implies that the majority of those who were affected with VVF in the selected states were married compared to other categories of marital status. It further suggests that the marital status of the affected person do not have impact on its occurrence.

Table 4.9: Prevalence Rate by the Socio-demographic Profiles of VVF Patients

Variables	Response categories	State of VVF Patients		Chi Square (x^2)
		Ebonyi (n=136)	Plateau (*n=381*)	P-Value
Age**	15 – 19	5 (3.7%)	30 (8.2%)	
	20 – 24	18 (13.3%)	70 (19.0%)	
	25 – 29	21 (15.6%)	81 (22.0%)	
	30 – 34	33 (24.4%)	58 (15.8%)	x^2 = 27.281
	35 – 39	28 (20.7%)	42 (11.4%)	P = 0.000
	40 – 44	19 (14.1%)	26 (7.1%)	
	45+	11 (8.1%)	61 (16.6%)	
	Mean Age=32.59±19.49	***33.30±9.52***	***32.34±22.00***	
Marital Status	Single	11 (8.1%)	33 (8.7%)	
	Married	108 (79.4%)	255 (66.9%)	x^2 = 15.303
	Separated	11 (8.1%)	29 (7.6%)	P = 0.009
	Divorced	1 (0.7%)	34 (8.9%)	
	Widow	5 (3.7%)	26 (6.8%)	
Family Type**	Monogamous	107 (78.7%)	0.0%	x^2 = 456.989
	Polygamous	17 (12.5%)	0.0%	P = 0.000
Highest Level of Education**	No formal education	12 (8.8%)	197 (51.8%)	
	Primary	28 (20.6%)	88 (23.2%)	x^2 = 102.347
	Secondary	76 (55.9%)	74 (19.5%)	P = 0.000
	Tertiary	20 (14.7%)	21 (5.5%)	
Religion**	Christianity	131 (96.3%)	204 (54.1%)	x^2 = 80.909
	Islam	4 (2.9%)	172 (45.6%)	P = 0.000
	Traditionalist	1 (0.7%)	1 (0.3%)	
Occupation **	Artisan	23 (16.9%)	20 (5.2%)	
	Civil servant	3 (2.2%)	12 (3.1%)	
	Farming	32 (23.5%)	148 (38.8%)	
	Housewife	2 (1.5%)	39 (10.2%)	x^2 = 80.342
	Public servant	15 (11.0%)	6 (1.6%)	P = 0.000
	Student	5 (3.7%)	8 (2.1%)	
	Trader	50 (36.8%)	78 (20.5%)	
	Unemployed	6 (4.4%)	67 (17.6%)	
Parity **	0	4 (3.3%)	7 (1.9%)	
	1	36 (29.5%)	111 (30.2%)	
	2	19 (15.6%)	49 (13.2%)	x^2 = 27.019
	3	25 (20.5%)	42 (11.4%)	P = 0.000
	4	19 (15.6%)	25 (6.8%)	
	5	5 (4.1%)	31 (8.4%)	
	6+	14 (11.5%)	102 (27.8%)	
Age at delivery**	Less than 15	0.0%	24 (7.5%)	
	15 – 19	15 (12.1%)	57 (17.7%)	x^2 = 20.185
	20 – 24	25 (20.2%)	88 (27.3%)	P = 0.000
	25 – 29	32 (25.8%)	65 (20.2%)	
	30+	52 (41.9%)	88 (27.3%)	
Number of times married**	0	11 (14.1%)	2 (0.2%)	
	1	55 (70.5%)	297 (86.3%)	x^2 = 41.564
	2	9 (11.5%)	40 (11.6%)	P = 0.000
	3	3 (3.8%)	5 (1.5%)	

NB: Figures in parentheses are in %

Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

On the prevalence of VVF by family type and state of residence, the Table showed that there was a statistically significant relationship between family type and the state of residence of the VVF patients (x^2 = 456.989, p<0.05). Similarly, finding indicated that there was statistically significant relationship between the highest level of education and state of residence of people affected with VVF (x^2 = 102.347, p<0.05). This means that the level of education of the affected persons with VVF could impact on its etiology among the patients as well as varied significantly by the state of residence of the patients. For example, while the majority of the affected persons in Ebony State with VVF had attained only secondary school education, those who were mostly affected in Plateau State had no formal education. This could mean that educational attainment could be fundamentally important at influencing the best practices that promote healthy life styles towards VVF prevention in an epidemiologic population.

In the analysis of the relationship between religion and the state of residence of VVF patients, there was statistically significant relationship between religion and state of residence (x^2 = 80.909, p<0.05). This also means that the being a Christian or Muslim could impact on the condition of VVF among the affected persons. The occupations of the affected persons with VVF were also found to be statistically significantly related to the state of residence (x^2 = 80.342, p<0.05). While those who were traders were mostly affected in Ebonyi State, those who engaged in farming were mostly affected in Plateau State.

The relationship between parity and state of residence was also explored. There was statistically significant relationship between parity and state of residence of the affected persons with VVF (x^2 = 27.019, p<0.05). Those who had one parity in both states were mostly affected with the condition compared to other categories of parity, followed by those with three parities in Ebonyi State (20.5%) and six or more parities in Plateau State (27.8%). Finding further revealed that the age at delivery of the affected person with VVF was significantly related to the state of residence of the patients (x^2 = 20.185, p<0.05). While it was more prevalent among those who had their delivery at age 30 or more in Ebonyi State (41.1%), the proportions were higher among those with ages 20 – 24 years and 30 or more years in Plateau State. The number of times married was equally significantly related with

the state of residence as well as the occurrence of VVF (x^2 = 41.564, p<0.05). The majority of the affected persons with VVF were married at one time in both states.

Against the backdrop of the prevalence of VVF in the two states, community members were asked whether they had known any woman who have been affected with VVF in their environment, Figure 4.11 presents the result. It was indicated that only 3 out of every 20 women knew those who have been affected with VVF in their communities in the overall. Similar trends were observed in the selected states but the proportion of those who had known women who were affected with the condition in Ebonyi State was higher than that of Plateau State. This is indicative that despite the prevalence of VVF in the two states, the proportions of community members who knows the affected persons with the conditions were still few. This may have implications on the knowledge and practices towards its prevention in the larger society.

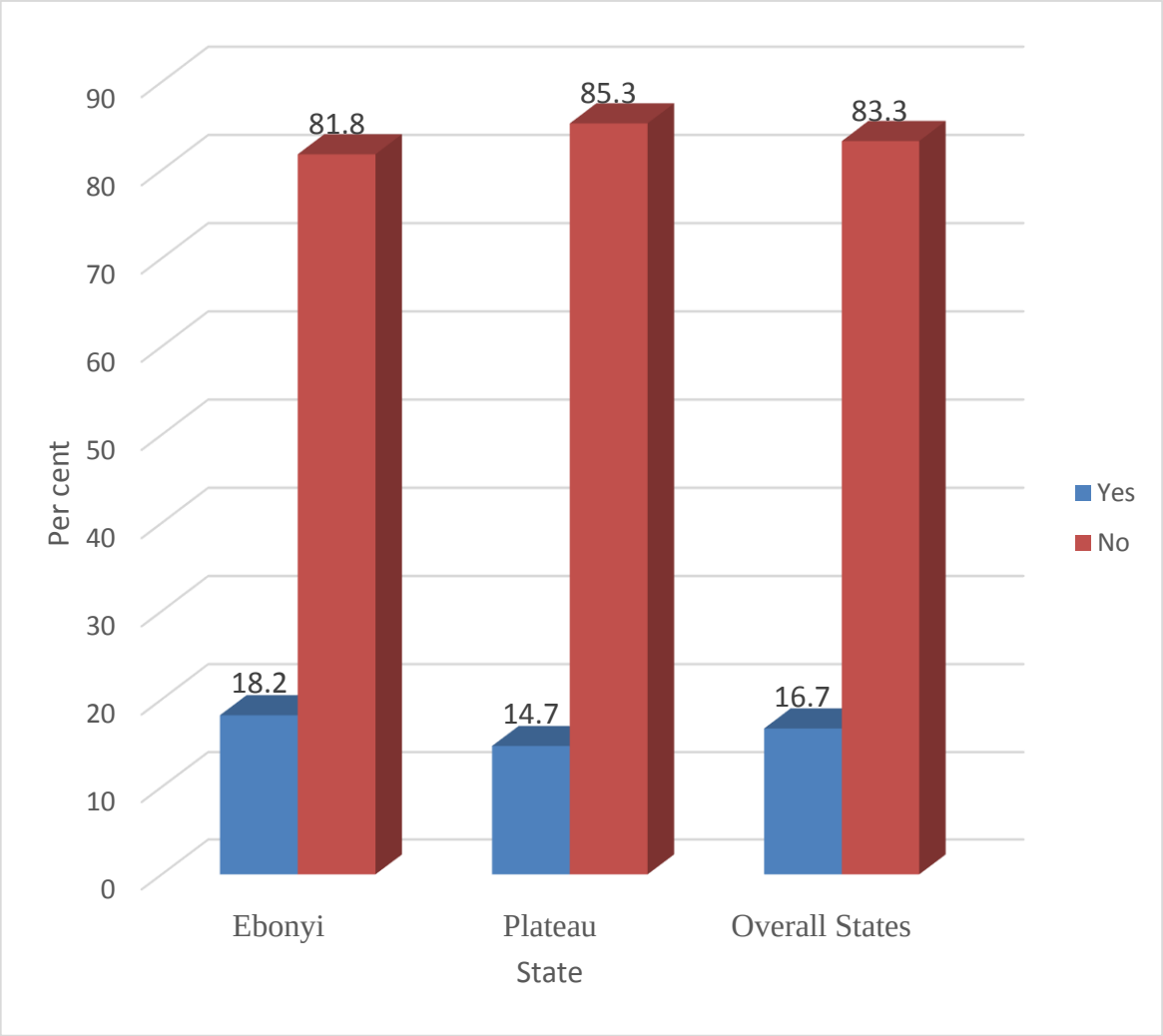


Figure 4.11: Distribution of Respondents by Knowing any Woman with VVF

Source: Field Work (2020)

It was further ascertained from the community members whether they have developed VVF at any point. Figure 4.12 shows that 1 out of 10 have developed VVF at any point in time in the overall. Despite the fact that only 1 out of 10 developed the condition in the overall, the proportion of those who indicated that they have developed the condition in Ebonyi State at any point is one time more likely to be higher than those in Plateau State.

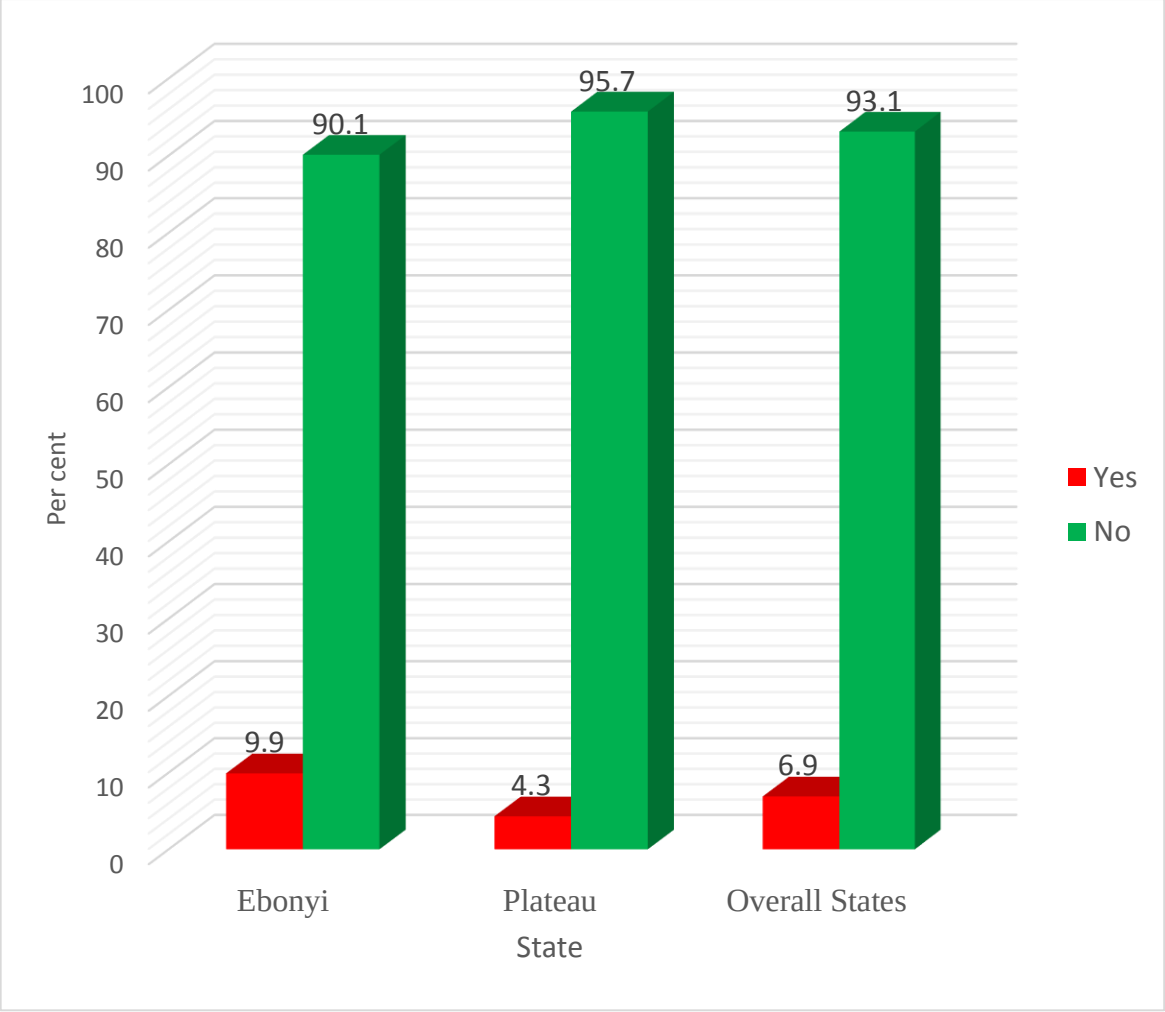


Figure 4.12: Distribution of Respondents by the Development of VVF at any Point

Source: Field Work (2020)

Figure 4.13 shows the distribution of VVF patients by their state of origins. As shown in the Figure, Gombe (14.7%) and Ebonyi (14.7%) State had the highest percentage of VVF patients, followed by those from Plateau (11.8%) and Cross River (11.8%) and those from Enugu (8.8%) and Delta (8.8%) State. This implies that women who were affected with the condition of VVF were more in Gombe and Ebonyi State when compared to states like Plateau and Cross River among other states.

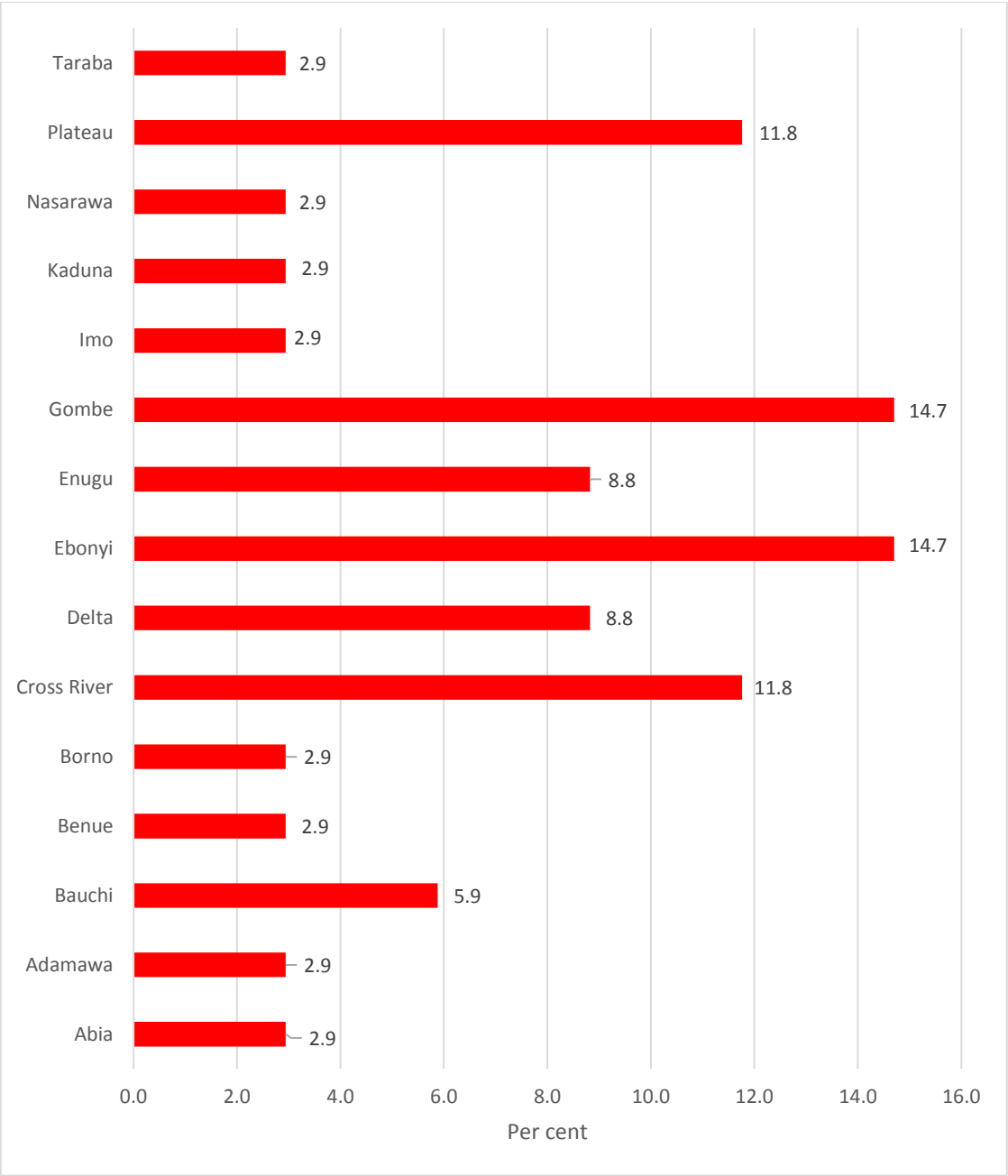


Figure 4.13: Distribution of VVF Patients by their State of Origins

Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

4.5 Treatment Pathways Adopted by the Patients of VVF

This section presents the treatment pathways adopted by the patients of VVF. Prior studies have shown different pathways adopted by individuals for their treatments on various ill-health. Using the first point of remedies as the most essential parameter to determine the pathways, eight (8) pathways have been identified.

a. Home remedies, hospitals and VVF Centre;
b. Traditional herbs, hospitals or no hospitals and VVF Centre;
c. Prayer house, hospitals and VVF Centre;
d. Primary Health Centre, traditional medicine and VVF Centre;
e. Private hospitals and VVF Centre;
f. Government hospitals and VVF Centre;
g. Direct to VVF Centre;
h. Back and forth treatment pathways.

a. Home remedies, hospitals and VVF Centre;

Prior to other treatment options, home remedies have been identified as the first line of defense. One of the VVF patients who was interviewed stated that after trying home treatments for her condition, she then went to the hospital before being directed to the VVF center. In her explanation, she narrated that:

> When it happened we were told to go to a place for repair but I did not go because we did not have money and the place is far and hospital bill too was a factor. I just stayed at home for two years farming. Sometimes relations will bring traditional medicine for me to take I did but later stopped because it was not working and I know the hospital will do it better but the fund was not there. A relative who works in this center told me about Jos for treatment but I did not bother to tell anyone because even if I did there is no money for treatment (some actually taught repairs are being paid for). But I later came down to Jos after 2 years for repair **(IDI/VVF patient/25 years Old/Plateau/2020)**.

Adding to the perspective of using home remedies as the first line of treatment option for VVF patient, another patient described how herbs were first applied to the rashes it

manifested, thereafter purchased over-the-counter antibiotics before visiting the hospital and finally being directed to the VVF center in Plateau State for treatment. In her narration:

> Since it started like rashes I put herbs there and gave her over the counter antibiotics and continued rubbing the herbs but it did not stop. Then we went to bauchi for the first repair still the leakage continued, did the second here it did not still stop. This is our third repair. After we came here we stopped all traditional treatments because they told us it will not work that it is only surgery that can stop it (**IDIVVF Patient 10 years Plateau 2020).**

Another woman who had similar therapeutic pathways described how she was first given a combination of different herbs as home remedies before visiting the hospital in Gombe and was then referred to the Jos VVF center for treatment.

> When we got home a woman came and prepared a medicine (traditional medicine) for me to drink saying it will stop the leakage. I kept taking different mixture but it did not stop the leakage. After 1 year we went to Gombe hospital and had a repair done but it was not successful. I went back home and stayed for another three months trying everything recommended to us to get well; at some point it reduced but later came back. After three years of unsuccessful trials we heard of this center and we came for treatment (**IDIVVF Patient 17 years Plateau 2020).**

Another patient from state added to the experience of shared above by explaining her own therapy pathways, which began with home treatments for four weeks that involved drinking warm water and ingesting spicy foods, but the leakages remained. She went to Gombe for hospital treatment for the initial repair, which did not stop the leakage after two years, and was then transferred to the Jos VVF center as a result of the persistent urine leak. As she noted:

> When it started I had no idea of where it can be treated and my village is very very far from Gombe. I stayed at home for 4 years; took traditional medicine and did some home remedies like sitting and drinking warm water, taking spicy things. But the leakage did not stop. After 4 years an outreach team from Gombe came to our village and we got to hear about the treatment and so we headed for Gombe and had the first repair but I was still leaking. At some point I lost faith because both the traditional and modern medicine did not stop the leakage so I stayed at home for another 2 years and some months (I actually thought I would die with his problem), then I heard of Jos from another outreach team and then came down for treatment **(IDIVVF Patient 30a years Plateau 2020).**

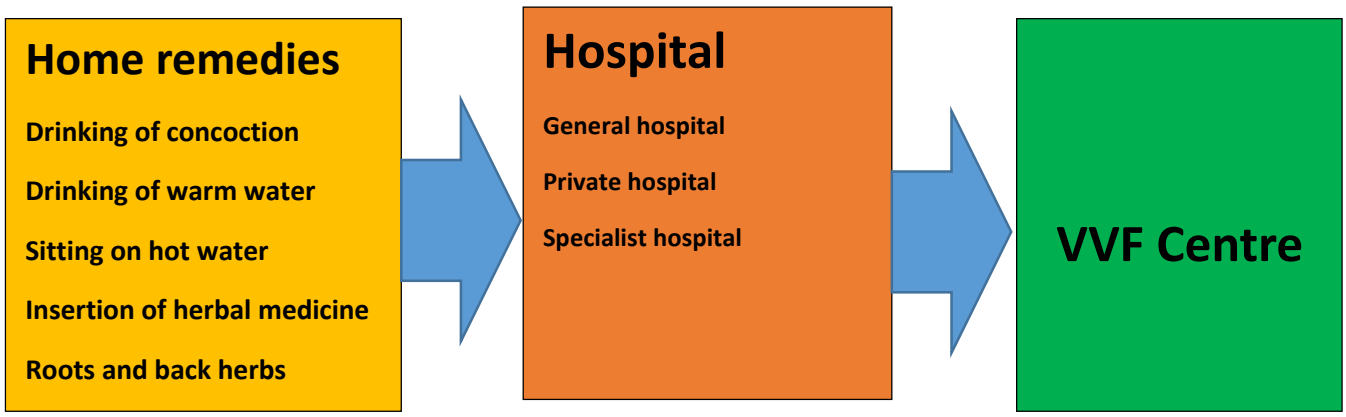


Figure 4.14: A Diagram Describing Treatment Pathways From Home Remedies to Hospital Visits Before Visitation to VVF Centre for Repairs

Source: Researcher (2020)

A VVF patient whose mother was interviewed added to the description of the treatment pathways shown in Figure 4.14 by describing how her child was given roots and tree bark to prepare and drink for therapy before being taken to the hospital and then to the VVF Center. According to her description:

> When we noticed it was a problem we went to a place and we were given roots and tree back to prepare and drink (this was influenced by the perceived cause of disease) we took the medicine for a while but we did not see it stopping. We later went to a hospital in Bauchi and they gave us one year to come back, when we did, "*ba mu samu shiga ba*" (we could not get access). They said the doctor was not available and we went back home. After that we just stayed at home doing nothing about it for another 3 years but just spending money for diapers. When the herbs did not work one "*baba*" told us to come to Jos for checkup and treatment. He said he brought someone to the hospital and heard they treat urine leakage (**IDI/VVF patient/9 years old/Plateau/2020**).

Corroborating the treatment pathways with the onset of home remedies, one of the matrons interviewed in Ebonyi State stated that many of VVF patients usually drink herbs, inserting herbal medicine into the vagina and attended prayer house before visiting VVF Centre for repairs. In support of this assertion, another healthcare professional explained the VVF patients first treatment that home remedies, herbs and over the counter treatment (OCT) are more prevalent as the starting point of treatment pathways depending on the severity of the condition before visiting the VVF centre. As she explained:

> Some have used herbal drugs before coming here, they have also gone to other VVF treatment centers for repairs but they still leak. Some of them will tell us that when they took the traditional medicine it helped them a bit while some ended up causing more problems for themselves but the only solution to VVF is surgical repair. Yes, some of the patients want to still use their traditional medicine but we stop them from using it because the best treatment is surgery. Prevention also is still surgery (cesarean section which is carried out if labour is prolonged or obstructed) (**KII/Health Professional/Plateau/2020**).

In another view of narratives, another health professional indicated that she did not know what they use at the onset of the VVF, but averred that the use of traditional therapy before visiting the VVF centre should not be discarded. In his statement:

> I do not know if they take any other form of treatment asides hospital treatment but it is very possible and should not be discarded. They will

> usually not report that to us because they know we will frown at it. But as I said it cannot be ruled out especially with the case of a woman in the ward who inserted herbal drugs in her vagina and got it blocked. With that alone the use of traditional medicine cannot be totally ruled out. We the doctors rarely ask if traditional medicine was used. Some may even attempt over the counter drugs. Many undergo repair 1, 2, 3 and even 7 times or more through the anus, abdomen and vagina. Like I said we doctors do not really ask about that. But the case of the woman with a closed vagina due to herbal treatment it is possible that this alternative treatment affects them sometimes and makes them not to come on time for treatment (**KII/Health Professional/Plateau/2020**).

From another health professional who could not really say the exact treatment options adopted before patients coming to the hospital for treatment, it was narrated that:

> I cannot really say exactly what treatments they use before they come to this center but people who use traditional methods of delivery will want to try traditional methods of treatment before coming to this center. They hardly admit they use traditional medicine before coming except for those who cannot deny it because it had caused one form of harm or the other to their bodies. So I cannot tell it influence except for the few who come with physical evidence we have seen. We have caught some of them with traditional herbs when they come but we encourage them not to use it. We are not always with them and do not control what they ingest so it is possible some of them still hide and take all these medications (**KII/Health Professional/Plateau/2020**).

However, these experiences provide support to the idea that many VVF patients begin their treatment regimens at home before going to the hospital and then to a VVF center for specialized care and repairs of their condition. This clearly demonstrates that a number of factors may have contributed to the aggravation of the illness because VVF patients began their treatment pathways with home remedies, where unskilled health care providers provided treatment based on three reasons: First, the condition might have been treated by unqualified medical personnel, second, the application of home remedies might have delayed seeking hospital treatment, and third, a succession of home remedies might have made the VVF condition worse. Because of the delays in getting to hospitals where specialist medical care is accessible and referrals are made when necessary, it is certain that the majority of patients who follow this typology of pathways will face severe conditions.

b. Traditional home/herbs, hospitals or no hospitals and VVF Centre;

In addition to using home remedies, findings revealed that some VVF patients visited traditional homes prior to going to hospitals and VVF centers. Although one of the patients who was interviewed stated that using traditional home remedies was a result of not having enough money to pay the hospital's bill, her initial treatment began with the use of traditional remedies. As she explained:

> Firstly, I went to hospital, the price made us to decline treatment, also went to EDMARK and LONGRICH people at Aba, the women use computer to check me, she said I will pay 80,000 that she will use drugs and supplements to correct the problem but we did not pay. I went to another place, they normally use traditional herbal and orthodox to cure people, and we paid 150,000 for the treatment. The women gave injection for one month but the leaking didn't stop, we decided to come here for the treatment, initially we are afraid of monetary cost, instead, we would have come here for the first time, if I had known the treatment is free (**IDI VVF Patient 33 years Ebonyi 2020).**

Another respondent who actually went to the herbalist before going to the hospitals, prayer house, and VVF Center claimed that her friend had given her the recommendation and promised her that she would be healed after 21 days. She began visiting prayer houses after realizing she had not been healed, then went to the hospital, where she was directed to the VVF center.

> Immediately the leakage started I told my friend and she said we should go back to the herbalist. We did and he gave me herbs to take and said it will heal it in 21 days but it did not work. I think I have told you that I have visited so many hospitals and prayer houses before the hospital I visited directed me to this place, even the place I had pelvic surgery, yet the menstruation was not corrected with the stool still leaking (**IDI VVF Patient 34d years Ebonyi 2020).**

It was described in the accounts of another VVF patient that she did not seek any medical attention from the hospital until a family doctor encouraged her to go back to the hospital and then to the VVF Center. This patient visited herbal home at the beginning of the leakage and attributed her decision to visit herbal home to the unfortunate incident she had at the hospital. In her words:

> I have never visited any place for this problem because I was angry; I feel the hospital will cause more harm to me because if a hospital can do this then they cannot be trusted anymore, it was on 2012 when I had appendix surgery, I ask the doctor if he knows anywhere I can go for the treatment, the doctor said, I can go to Lagos or Ibadan, but I never seek any medication from any hospital as regards to that anywhere. I tried some herbs at intervals. I have lived with urine leakage until last year (2019) when I develop heart/chest pain. I complain to my mother, she took me to their family doctor at Aba, the doctor said that God directed him to run every test on me, starting from my stomach, it was on the process of his investigation that he observed that am leaking urine, he ask me, then I narrate my story to him, it was at that place that he directed me with referral letter to this place for expert management - perceived psychological issues (**IDI VVF Patient 35d years Ebonyi 2020).**

In view of the foregoing accounts, it is clear that many VVF patients sought out traditional home care before receiving hospital care. This implies that seeking medical attention in a traditional home might not be handled more effectively while also influencing the time they sought help from modern health care for repairs. Although various factors, like a lack of money and a negative hospital experience during childbirth, could be ascribed to such treatment alternatives, using a properly professional healthcare provider may be preferable to using herbalists and traditional houses. The diagrammatic depictions of the traditional home therapy at the beginning of VVF are shown in Figure 4.15, followed by the hospitals and VVF Center.

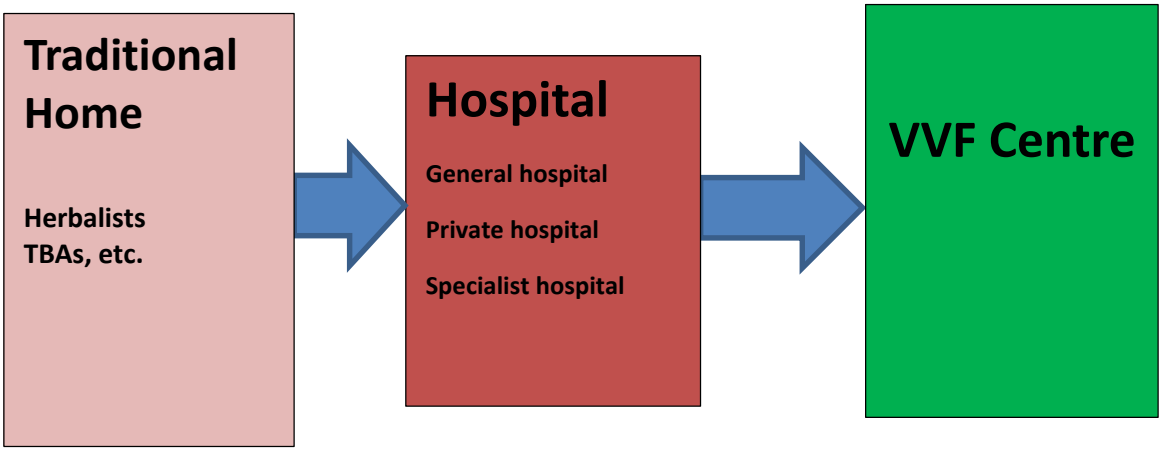


Figure 4.15: A Diagram Describing Treatment Pathways From Traditional Home Remedies to Hospital Visits Before Visitation to VVF Centre for Repairs

Source: Researcher (2020)

c. Prayer house, hospital visit and VVF Centre

According to the description of another pathway, it was stated that when the VVF condition first manifested, she attended two different churches for prayer before seeking medical attention at the hospital and ultimately being referred to the VVF Center in Abakaliki. In her statement:

> I did not go to any place, I only attended church, I use to go to church and pray from 7am to 12 pm every Friday. I went to two different churches for prayer. The hospital I went for the treatment referred me to this place. They say this place is the last place for me to come for the treatment. I have not been treated from any health institution or any herbal centre. I had the problem and went to our house after three months, I went back to the hospital and they referred me to this place **(IDI/VVF patient/55 years Old/Ebonyi/2020)**.

Another VVF sufferer from Ebonyi State noted that she went to prayer houses as her first point of contact when she became aware of the leakage following delivery. And the reason for this was the doctor's recommendation, which made her uncomfortable, that the only place her situation could be handled was at the VVF center. Despite this recommendation, she first sought prayers through her pastor in the church. As she stated:

> After the hospital I delivered my child, we did not go to any other place because that doctor said, there is no other place we can get cured except here, because of that we did not go to any other place. My Pastor use to pray for me, give me olive oil to drink (**IDI VVF Patient 28 years Ebonyi 2020)**.

Another VVF patient who was referred to the Jos VVF center but was unemployed claimed that while she was waiting to go to the hospital and the VVF center, she began praying to God for healing and went to churches for prayers. As she noted:

> When it happened I was referred to this center but I did not come due to funds. And the urine leakage was not much so I decided to manage it. In the waiting time I was praying for God's healing visited churches and place of deliverance for prayers. Since the leakage was not that much I got pregnant and gave birth again that was when it increased very well in leakage. When the leakage increased we started looking for money to come to this center and the repair has been done and I pray it will be perfect (**IDIVVF Patient 25b years Plateau 2020)**.

In support of the above narratives, one of the medical professionals stated that it is true that many VVF patients seek healing through prayers from their spiritual leaders, with some still seeking such help covertly while at the hospital. *Yes, some still seek help from their Pastor and other spiritualists, though secretly* (**KII Matron Ebonyi 2020).** When asked if prayers were used as a treatment option while the condition first manifested, a nurse in the Ebonyi State confirmed that prayers were still considered as a treatment option even when patients were receiving care in a hospital. In her statement: *Not really, except some Pastors that occasionally came to pray for them and other group, people of God, but there is no other local herbs they are using for treatment while at the ward* (**KII Nurse Ebonyi 2020).**

The narratives described above imply that the notion that the VVF condition had a supernatural explanation had an effect on this pathway. In Nigeria, it is common knowledge that the majority of complicated medical conditions have spiritual underpinnings, making spiritual therapy a necessary component of treatment. As can be shown in Figure 4.16, the belief that VVF has a supernatural explanation led to the initial help being sought before other treatment options. Even when choosing modern therapy, prayers are still said in between appointments to support the hospital's medical care.

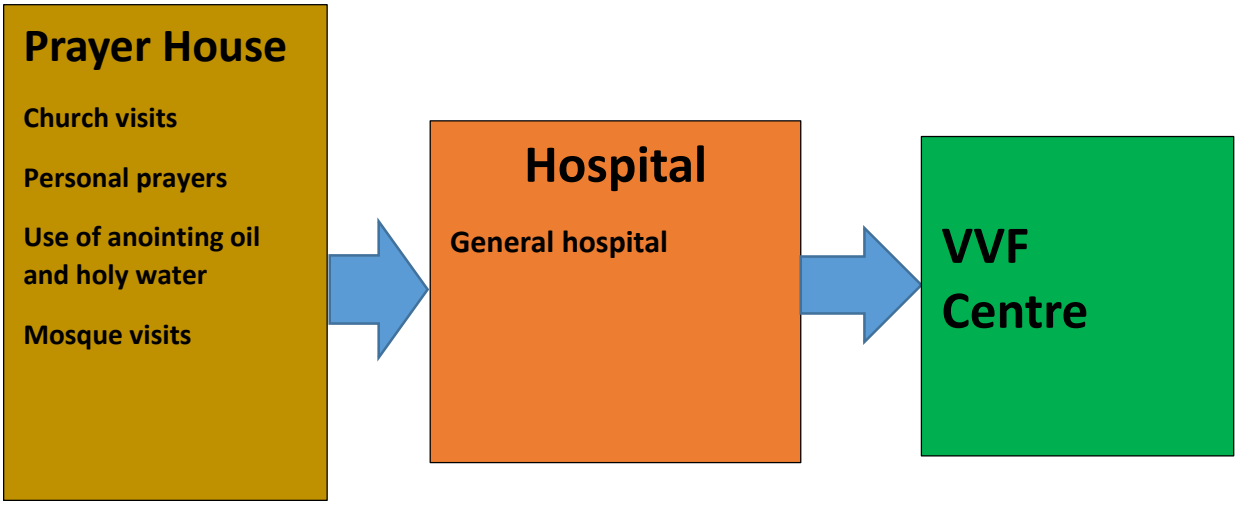


Figure 4.16: A Diagram Describing Treatment Pathways From Prayer House to Hospital Visits Before Visitation to VVF Centre for Repairs

Source: Researcher (2020)

d. Primary Health Care (PHC) centre, traditional medicine or home remedies and VVF Centre

It is well understood that the belief, attitudes, location, financial resources available and the efficacy of the treatment option ffor the sufferer. This also applies to the first point of call such as using PHC. As one of the VVF patients indicated, her treatment began at the Local Government Hospital, also known as Primary Health Care (PHC), followed by traditional options before being referred to the VVF Center in Jos. She described the PHC as the first facility she attended before further treatment options. As she explained: *My parents took to the Local Government Hospital for treatment because we taught it was another problem. I only took traditional medicine during the menstruation problem* **(IDI/Repaired VVF patient/20 years Old/Plateau/2020)**.

As another VVF patient added, she described how she began her treatment options at the clinic but also used traditional treatment before discovering about the VVF center. As she narrated:

> When it started I was given drugs in the clinic where I gave birth but it did not stop the leakage. When I got home I took traditional medicine my father gave to me to treat it but it did not still stop. Luckily for us it did not take long before we heard about this center and then we came here immediately and the repair has been done (**IDIVVF Patient 25c years Plateau 2020).**

From the above narratives of starting treatment option with PHC, typical home remedies used after PHC as a starting point were ineffective. This could be as a result of receiving substandard medical care or being hampered by inadequate facilities at previous treatment options. This implicitly implies that have been a number of delays, which have contributed to further complications of the condition. According to the pattern in Figure 4.17, some VVF patients started their treatments at the PHC but switched to traditional methods as a result of the substandard care they received from the PHC and later turned to the VVF center, where expert care is being provided.

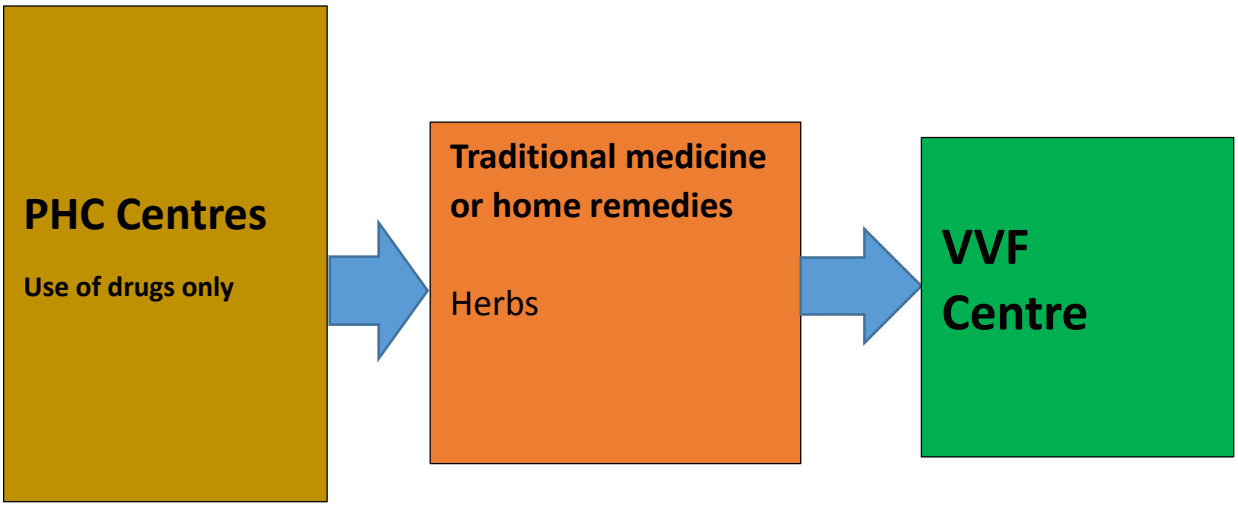


Figure 4.17: A Diagram Describing Treatment Pathways From PHC Centres to Traditional Medicine Before Visitation to VVF Centre for Repairs

Source: Researcher (2020)

e. Private hospital, government hospitals or no government hospital and VVF Centre

With this treatment option that began with private hospital, followed by government or no government hospital before the VVF Centre, one of the respondents explained that she first sought medical help from Father Ede's Hospital (a Private Hospital) before being referred to other hospitals, and then finally to the VVF centre. As it was narrated:

> When I started smelling urine and noticed I cannot urinate on my own again, I told my husband, we went to Father Ede's Hospital, they said my baby is too big, that the head of my baby is big that is why I have the bladder problem, they gave us referral not to this place, we did not go to any other place again **(IDI/VVF patient/23 years Old/Ebonyi/2020).**

Another participant, who also went to a private hospital, called Pieta Hospital initially and prayed for recovery at a church before being referred to the VVF Center in Abakaliki, expressed this.

> I have not gone to any place for the treatment, the doctor from that Pieta Hospital referred me to this centre, he called and gave me somebody's number, that is a doctor too, who works here. He now directed us to this place, I have not been to Abakaliki before, I don't know this place before. I did not go to any other place other than the chapel for prayers… Nothing, I was referred from the hospital I had delivery, what I usually do before coming to this place is go to chapel to pray, after praying, I come back to the house. I still seek prayers from by chapel pastor **(IDI/VVF patient/36 years Old/Ebonyi/2020).**

According to the typology of treatment pathways shown in Figure 4.18, even if there are no facilities to treat the condition, going to a private hospital indicates that a diagnosis has been made. Additionally, it was explained that some patients still prayed before the VVF center despite visiting other hospitals or receiving referrals, since they believed that the reason of VVF was impacted by the supernatural. What does that suggest? It suggests that those who followed this type of treatment plan believed that the illness had a spiritual root that needed to be addressed through prayer in addition to using medical facilities.

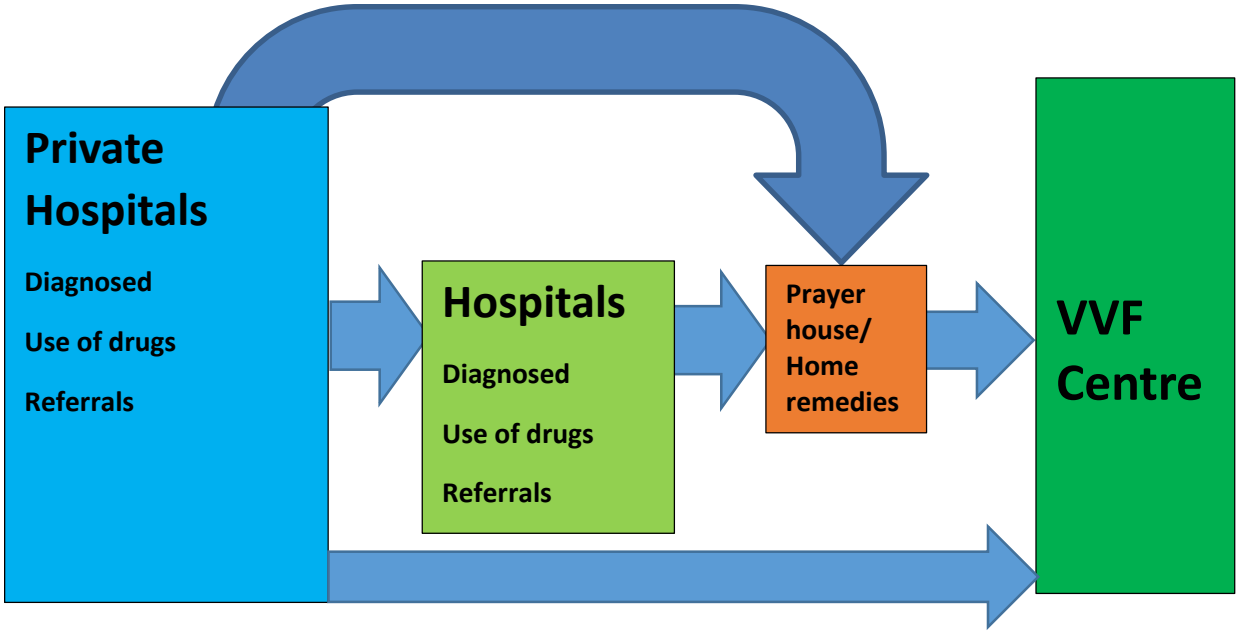


Figure 4.18: A Diagram Describing Treatment Pathways From Private Hospitals to Government Hospitals Before Visitation to VVF Centre for Repairs

Source: Researcher (2020)

In support of the above description, another VVF patient who was diagnosed and referred immediately from Chibuike Hospital (a private hospital) to the VVF center for specialist treatment supports stated that she was instructed to go and return in three months, which she strictly followed.

> I came to this place directly, the doctor from Chibuike Hospital gave us a referral letter to this place, I came here that February, they examined me and ask me to go back and come after 3 months. I never went to any other place for solution of this problem (**IDI VVF Patient 30 years Ebonyi 2020).**

Another VVF patient reported that she discovered the leaking after undergoing surgery at a private hospital, but there was no effective treatment available at the time, so she was transferred to the VVF center for professional medical attention, noted that:

> I was still at the hospital when I noticed the urine leakage. I noticed it two days after the operation. I was placed on catheter for two months, yet I still leaked urine, I was then referred to this place, I did not go to any other place for treatment, with which money I use to go, when my husband leave and abandon me at the hospital (**IDI VVF Patient 31 years Ebonyi 2020).**

In the description of another VVF patients who was discharged from a private hospital and took to home remedies before finally visiting the VVF Center, she explained that:

> I was discharged to go home, from that nurse, then after one week, another chemist man says he can cure me, he charged 1000 from us and give me drugs (OTC), I took and finish the medicine but, it did not work, I decided to stay like that while trying some natural herbs, I did not go to any other place for any medication (**IDI VVF Patient 40b years Ebonyi 2020).**

From the above narratives of this treatment pathways, it was observed that visiting private hospitals at the onset of VVF symptoms was common among patients from Ebonyi State while their counterparts from Plateau State took to other treatment options at the onset of the condition such as government hospitals, traditional homes, etc. Again, while some of the patients visited private hospitals for treatment at the onset of the condition, others still visited the traditional options and prayer house for healing. This could mean that for this group of people, it has become

commonplace to hold the view that VVF has supernatural causes and to think that it can only be treated by using supernatural powers while visiting hospitals.

f. Government hospital and VVF Centre

It was noted that before being referred to the VVF center, patients would still stop at other locations along the pathway that begins at government hospitals, such as prayer houses. One VVF patient in Ebonyi State, for instance, described her life experience and said that she had visited a government hospital before going to the VVF center. This further implies that many VVF sufferers, despite having attended hospitals with professionally trained professionals, think that supernatural forces can help their condition get better. According to her:

> The first hospital we went to check me and requested for a scan, after the ultrasound result shows VVF, the 2nd hospital also said same thing, the 3rd scan says that my bladder is weak. I went to Teaching Hospital Ohiria, the doctor said he can fix it through catether. We paid and he inserted catether on me for one month after one month, still leaking urine too, I now decided that I will not go any other place except to come to Abakaliki and prayers (**IDI/Repaired VVF patient/29 years Old/Ebonyi/2020).**

Some patients, particularly those who have unique viewpoints on the causes of VVF, believe that hospitals are the best places to go along their treatment pathways. According to the account of another VVF patient, who attended FMC (a Federal Hospital) before being referred to the VVF Center, she did not go anywhere further after being confirmed she had VVF in the initial place of visit.

> I did not receive any treatment elsewhere, except this place. We are being referred to this place from Federal Medical Centre (FMC), Asaba. We came here on referral. But I went for prayers sometimes because I feel it is not normal but from a bad spirit **(IDI/VVF patient/20 years Old/Ebonyi/2020).**

In addition to the above VVF patient, another patient narrated that: *I did not receive any treatment elsewhere, except this place, we are being referred to this place from F.M.C Asaba. We came here on referral. But I went for prayers because I feel it is not normal but from a bad spirit* (**IDIVVF Patient 20 years Old Ebonyi2020).**

In another patient who was referred to the VVF centre after several visits to different hospitals in Gombe State and prayer houses, it was noted that:

> When it started we were told repair can be done in Jigawa, Gombe and Jos but the boy who made me pregnant chose Gombe due to cost but we refused because we have heard about Jos but we later went to Gombe for the repair but the leakage did not stop. We later came to Jos and the repair has been and I pray it will be successful. We did not take any form of treatment in the village because the doctor had told us where it can be treated; people advised my mother on different mixture that can be prepared for me to take to stop it but she refused saying the doctor told us that VVF can only be treated in the hospital so we will look for money and do hospital treatment. But before the second repair I went to my pastor for prayers so that I can be healed even as I am here I do the prayers on phone (**IDIVVF Patient 16 years Plateau 2020).**

In the explanation of another VVF patient from Ebonyi State, it was after her discharge at the FMC, she was referred to the VVF Centre. In her narration:

> I did not go to any other place; I stayed for 4 weeks at FMC with catheter, yet I was still leaking urine. When they discharge me, they ask me to come to this place for the repair, we came straight from that place but I was asked to go back and stay for 3 months before I will come for the surgery (**IDI VVF Patient 34 years Ebonyi 2020).**

From a participant who came from another state and started with the hospital before her referral to the VVF centre, it was stated that:

> After 5 months, I went to Ogoja and did operation because of it, yet no cure, I stayed for 5 days after the operation and the thing burst, I started leaking again. I noticed the leakage when am still at that hospital. The operation was not successful, I was not happy, they discharge me and ask me to come back after 3 months, but I did not go back to that place again when I heard about this place, through a repaired patient. I also went for prayers and sometimes bought drugs from the chemist, OTC (**IDI VVF Patient 35 years Ebonyi 2020).**

In a patient who was referred from a hospital in Kano, she explained that after her diagnosis of VVF, she bought drugs and was later referred to Jos VVF centre where her VVF was repaired twice. In her explanation, it was stated that:

> We were later told to go to a hospital in Kano, we did; and drugs was given to me and was told to come back after 8 weeks. When we went back they referred us to Jos (this happened 2 months after I developed VVF). I did the first repair it reduced but anytime I feel like urinating

> before I will get to the toilet it will start coming out. We came back and we were booked for another repair after three months. The second repair was done but had little control of urine; the third was done after 6 months from the second repair and I got better. All three repairs was within 1 year of VVF. At some point I kept seeking advice from people on what to take to help treat it since the repairs were not successful **(Case Study/30 years old VVF Patient/Plateau/2020)**.

Treatment regimens for VVF patients appear to be influenced by a number of factors. For instance, while some believe that it has a spiritual element and needs to be treated in the domain of supernatural powers despite the fact that the hospital is the first place to visit, others have doubts about the efficacy of hospital treatments as they believe that the combination of both would be more efficacious than the conventional therapies. In the narration of another VVF patient who used government hospital at the onset and later used traditional method before she was moved to VVF centre, she narrated that:

> After I was discharged from the hospital I was referred to this center and a repair was done but it was not successful. Then 2 years later (2010) I came back for another repair which was not also successful. After that my aunty decided to allow me remain at home. I cannot count the types of concoctions I have taken. People kept suggesting different kind of things to take and I had to choice that to take them because I wanted to be whole again and live normal like every other girl. I have been to different pastors for prayers. At one time I took herb and almost died but God saved me. Sometimes chemist people will tell my aunty that they can treat it and mix plenty drugs for me. God is the one saving me. I decided to come back here this year to try my luck again (**IDI VVF Patient 24 years Ebonyi 2020).**

This also implies that she might have encountered delays in her treatment following diagnosis in the Kano hospital, which could have an impact on the management of VVF condition before she was sent to a specialist hospital. Nevertheless, the diagram that illustrates the transfer of a patient from government hospitals to a VVF center is shown in Figure 4.19.

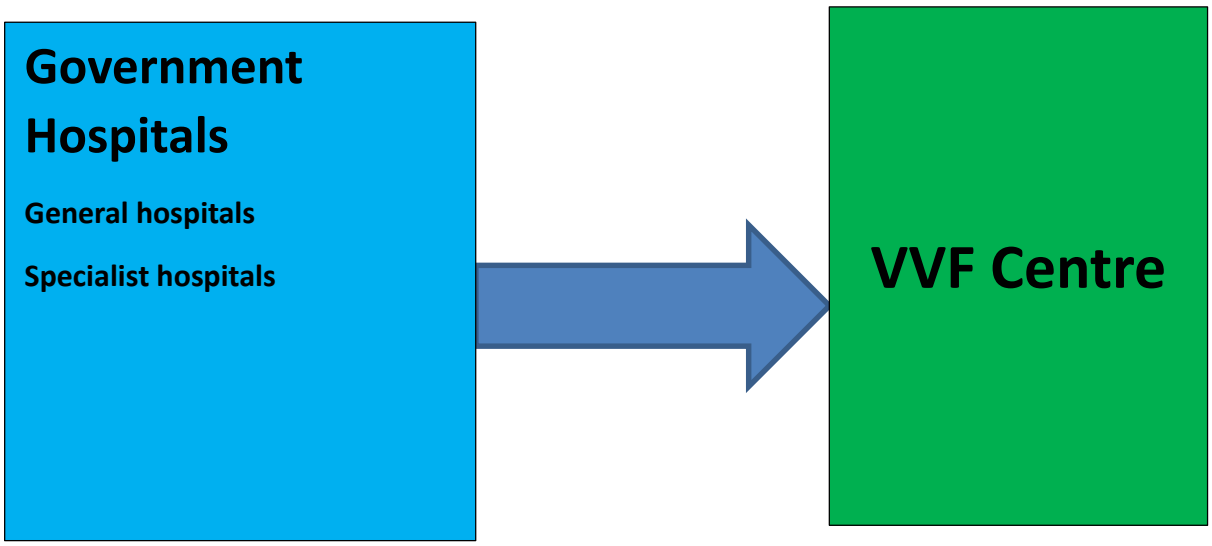


Figure 4.19: A Diagram Describing Treatment Pathways From Government Hospitals to VVF Centre for Repairs

Source: Researcher (2020)

Despite the fact that Figure 4.19 depicts the flow of patients from government hospitals to the VVF center, it was found that referrals to VVF centers often took longer than expected. Before going to the VVF centers for skilled healthcare care during these delays, several people turned to traditional remedies. In the narrative of a patient from Plateau State for example, it was noted that:

> I was placed on catheter treatment for two month at the hospital; the doctor said he would correct it. I always drink water at the hospital for me to be cured. After the two months, I did not heal; I was discharge to go home. It was when my mother came to "Omugwo", that we started calling people and be asking them about such health condition, then, my sister relative says, there is a place in Abakaliki where they cure such health problem. But before then some people suggested the use of herbs (traditional medicine) which we tried out but it did not stop (**IDI VVF Patient 35b years Ebonyi 2020).**

While some delays may be related to patients' attitudes toward professionals who administer healthcare or to healthcare providers, other delays may be related external factors, such as the lockdown that occurred during the 2020 Covid-19. As one VVF patient who proceeded directly from the hospital to the VVF center but had a delay due to the Covid-19 lockdown noted that: *Nothing, I did not go to any other place, I supposed to have come here earlier this year, but because of the lockdown, I did not come* (**IDI VVF Patient 43 years Ebonyi 2020).**

From a patient who was repaired three times and stayed back home for nine months, it was explained that:

> My father brought me to the hospital and we did a repair three months ago but when returning home it opened up due to bad road and the urine leakage started again. I had to return and was told it was due to the road. I stayed back at home for 9 months before coming back for another repair. During this time people told me to go for prayers so that the next repair will be successful. I did like twice (**IDIVVF Patient 18 years Plateau 2020).**

In a patient who shared similar experience, it was narrated that:

> I kept visiting different hospitals and several appointments were being given. These lingered to 2107 (all the while I did not still know what it was because the doctor did not say) later in October 2017 I visited another hospital where the doctor told me the hospital I did the surgery damaged

> a lot that requires repair. During the episodes of hospital visits, surgeries were cancelled and drugs given with no improvement. It was at this point that I was referred to the fistula center Abakiliki of which it was named VVF. A repair was done but it later resurfaced due to long distance travel from Ebonyi to Lagos (**IDIVVF Patient 36 years Plateau 2020).**

According to another patient who visited the hospital before referral to the VVF centre, it was stated that:

> I have only been to the hospital for treatment. The hospital I did the surgery in referred me to this center and I came here in February and was booked for June because I was not strong. I have done the repair and I hope it will be successful because I have of stories of repeated repairs (**IDIVVF Patient 47 years Plateau 2020).**

Given that many VVF patients visited government hospitals before being referred to the VVF center, it appears that more patients in Plateau State than in Ebonyi State went directly to the VVF center. Again, it is noted that many of the patients had alternate treatment options prior to their actual attendance at the VVF facility. This may be as a result of factors fin ancial constraints, attitudes toward modern health care, and the conviction that the combination of traditional and modern healthcare is more effective in treating health problems than just one therapy.

g. Direct to VVF Centre

There have also been instances where VVF patients went straight to the VVF center by themselves without prior visit to the hospital or any other location. In a patient who directly visited the centre based on relative who had similar experience, it was stated that: *I came to the VVF center first for treatment because my in-laws VVF situation was treated in this Center successfully. I have not taken any other type of treatment except that from this center* (**Case study VVF Patient 25 years Plateau 2020).**

Given that Figure 4.20 describes specific patients who went directly to the VVF center for repairs, it is reasonable to assume that a number of circumstances must have driven these people to do so. These circumstances include accessibility to the VVF center, awareness of the available options for treatment, highly efficacious than all other options, and the patient's unique perspective that makes it the ideal option compared to other patients.

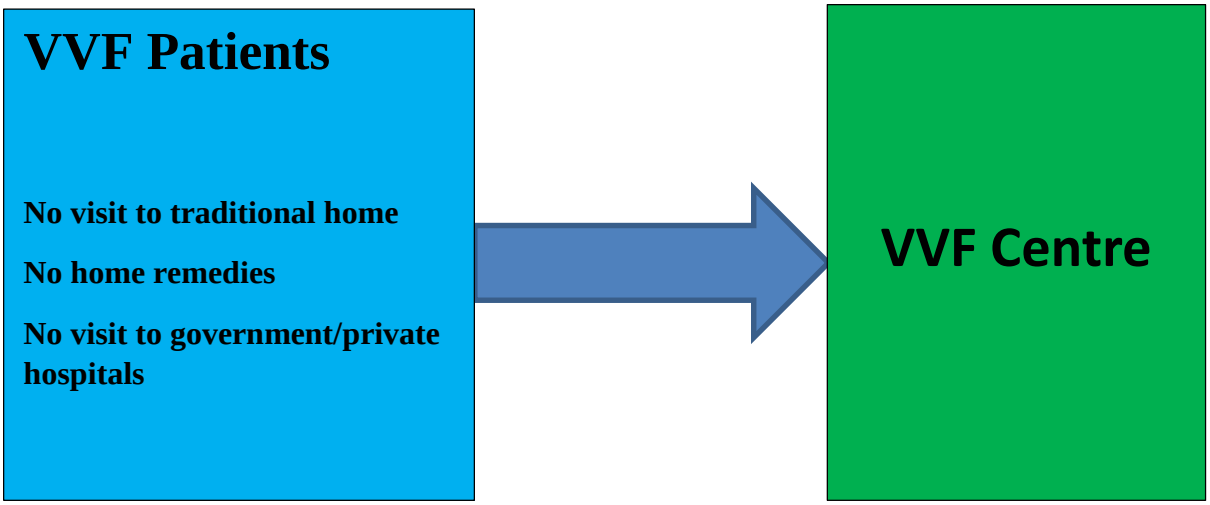


Figure 4.20: A Diagram Describing Treatment Pathways From Individual VVF Patient to VVF Centre for Repairs

Source: Researcher (2020)

h. Back and forth treatment pathways

In addition to the many treatment pathways that VVF patients reported and described, a back and forth movement was seen in their patterns of therapies. For instance, a patient who was referred from a hospital to the Jos VVF center claimed that she was unable to be repaired because of a lack of funds. Instead, she went to Bauchi where she was unsuccessfully repaired before turning to traditional medicine and eventually being brought to the Jos VVF center for treatment. In her description:

> When it started I was referred to Jos but did not have money to go hence my staying at home. I did not take any medication until after one year when I went for a repair in Bauchi which was not successful; although it reduced but if I feel like urinating it will start leaking before I stand up then after a while the urine became difficult to come out even if I am pressed. I was told to come back to the hospital but I did not so I resorted to home remedies and traditional medicine. I started taking traditional medicine to help ease the passage of urine and it helps me a bit (they usually cook it hot for me to drink). Sometimes I sit in hot water and it helps; I feel better although the leakage continue if they press me. We do this anytime the passage blocks they press my vagina with hot water then it becomes easier to pass urine. It can leak for like one or two weeks then it will block then we have to do the hot water thing again "I will say that the traditional and home remedy worked a lot for me because I urinate myself but the bladder do not get empty the remaining will then be leaking out itself." When this issue continued we decided to come down to this center and the repair was done. And I pray it will stop with this (**IDIVVF Patient 20b years Plateau 2020).**

Another VVF patient underwent a back-and-forth therapeutic approach that began with a home remedy. She then went to the Jos VVF center, but it wasn't successful. Later, she went to the hospital, where she has tried several therapies before being sent back to the Jos center. As she stated:

> After child birth I waited for some months at home to heal before coming to Jos for treatment and a repair was done (2009) but I was still leaking urine. After one year I did another repair (2010) but I was still leaking although not as much as it was previously. After that I waited for 9 years before coming back to the hospital because I had to take care of my sick mother for 7 years; her situation diverted attention from me to her (thank God the leakage was not much). I did take any other treatment because the leakage was not much at all **(IDIVVF Patient 27 years Plateau 2020).**

Additionally, a patient in Jos who initially went to the hospital, returned, took traditional medicine, then repeatedly attended a VVF center recounted a similar experience of back and forth movement and explained that:

> When it started I went back to the hospital and I was told to come back after three months. I went back and the repair was done but I was still leaking. I took traditional medicine before the second repair "mai ciwo wawa ne, mai ciwo kasuwa ne" (a sick person is a fool, a sick person is a market) anyone can recommend something to you and you do all in the name of trying to get well; I kept vomiting anytime I take it so my husband told me to stop and said we should face hospital treatment. Went back to the hospital and was told to come back after one year but we had no money to go back so I delayed for another 3 months. A second repair was done and the leakage reduced; sometimes when I feel like urinating I go to the toilet and do it myself and other times it just pours out itself. After a month I went back and a third repair was done and it stopped completely. After that repair my period started with so much pain and then I took some drugs then later the leakage started and increased more than the previous times. Then I was told about Jos and I came to try it out. "you know this urine sickness anywhere you seek treatment and get tired and out of money you rest then when you get money you get up and start again"(especially money for transport fare) (ingredients used: *mai shanu, dawadawa, kaza* (**IDIVVF Patient 44 years Plateau 2020).**

Narrating a back and forth movement, a patient from Ebonyi State reported using traditional treatment first before going to the Abakaliki VVF Center, however she afterwards took herbs and turned to prayer before going to the VVF Center. In her explanation:

> From 1999-2008 (9 years) I was at home taking traditional medicine; they boil different kind of things for me to drink but there was no improvement. After I was taken to the fistula center in Abakiliki. The repair was done but it was not successful. Different suggestions kept coming and after the unsuccessful repair I was referred to a woman and was told that if I took herbs it will close. I took the herbs for a long time and it did not work. The repair has been done 4 different times but all not successful. At that point I started mixing traditional medicine with modern treatment. At intervals I visited churches for prayers since I felt other treatments had not worked I turned to God for help. I came to Jos fistula center March 2018 after 4 unsuccessful repairs. The repairs had affected my vagina because repairs on the bladder were done through the vagina and it is now blocked (tiny). They said the next repair will be done through the anus. They have been pumping me so that I can urinate. After the 5th repair in Jos it stopped and I was hopeful that it was over but after a while it started again but not as much as before. This last repair was done through the stomach. I have a very long tear on my stomach. Since

> I came to this center I have not taken any other form of treatment asides modern medicine **(Case study VVF Patient 30 years Ebonyi 2020).**

These findings imply that, despite similarities in the initial location of care for VVF patients from Ebonyi and Plateau States, there were variations in the patterns of care sought by states at the onset of the condition. Figure 4.21, on the other hand, shows examples of the numerous therapy options available to those who are affected.

The Figure shows that most patients began their treatment pathways with simple (home remedies) before moving on to more advanced methods. While this was observed in the VVF patients, patients also turned to prayer houses and the usage of herbs and concoctions for relief. This shows that before being finally referred to the VVF centers, many VVF patients combined multiple therapy regimens based on the severity of the condition at the time of its emergence.

The assumption that the condition has a spiritual component still drove some VVF patients to visit prayer houses, herbalists, and use of herbs, even though the majority of VVF patients have been referred to the VVF Centres where trained and competent health professional care providers are located. What does that suggest? It suggests that the majority of VVF patients' treatment pathways involved switching between traditional and modern treatment protocols or both at the same time depending on the severity of the symptoms manifestation.

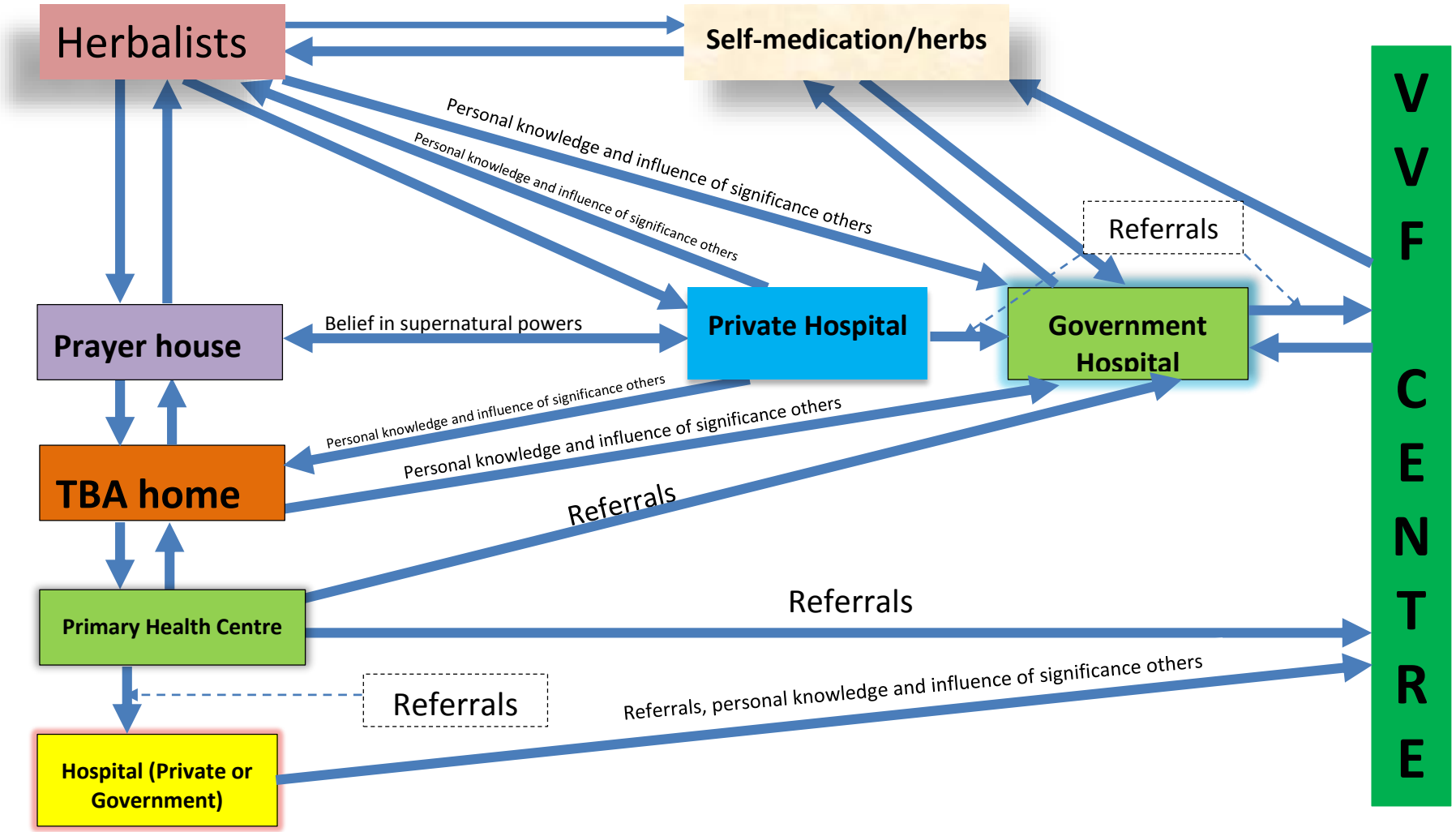


Figure 4.21: Diagrammatic Illustrations of Treatment Pathways and Factors Influencing the Pathways among VVF Patients

Source: Researcher (2020)

4.5.1 Factors Influencing Treatment Pathways among VVF Patients

This study found that there were different factors influencing the treatment pathways of VVF patients. These factors are further categorized into three based on the sub-themes generated from the analysis of the study, namely:

a. Doctors' referrals;
b. VVF Patients' personal knowledge through media publicity on VVF
c. Family members or significant others' referrals.

a. Doctors' referrals

Most of the respondents identified that their treatment pathways especially for those who used modern treatment regimens as doctors' referrals even to the VVF centre. According to a VVF patient interviewed, it was explained that it was: *From doctor's referral, I was directed to come here with a letter; the letter is in my folder, if you open it, you will see it. I did not go to any other place for medication* (**IDI VVF Patient 28 years Ebonyi 2020).**

Another VVF patient who noted that she had visited several places but eventually referred to the VVF centre said that:

> Because all the places I went to did not stop the urine and always referred me to this centre for expert management, even the last place I went to also did same after keeping me for one month catheterisation, the leakage still persisted and he finally referred me to this place also (**IDI VVF Patient 29 years Ebonyi 2020).**

In another VVF patient who first visited herbalist before visiting the hospitals and finally referred to VVF Centre narrated that:

> First of all I went back to the herbalist to repair what he scattered but it did not work I started moving from hospital to hospital. I came based on referral note on competency and am seeing it; this hospital only treats people with this special cases, urine and feaces leakage (**IDI VVF Patient 34d years Ebonyi 2020).**

Similar explanation was given by a patient who visited a private hospital, and she said: *I was referred to this place from Parklane Hospital, having stayed for 2 months at their care*

without any solution (**IDI VVF Patient 31 years Ebonyi 2020).** In the explanation of the explanation of a patient from Jos, it was stated that: *I was referred to this clinic from the hospital where I gave birth* **(IDIVVF Patient 18b years Plateau 2020).** Another patient added that: *I was referred to the VVF center Jos from the hospital I went to in the local government hospital* (**IDIVVF Patient 20 years Plateau 2020).**

A patient from Gombe also noted that she was referred to Jos VVF centre by a doctor as she describes: *I was told about this center by a doctor in Gombe; he brings any case of VVF he hears of to Jos and for the fact that with all I have done I was still leaking* **(IDIVVF Patient 22c years Plateau 2020).** In another explanation, it was affirmed that doctor's referral influenced her treatment pathways: *I was referred to this hospital by the doctor who attended to me during child birth* **(IDIVVF Patient 27 years Plateau 2020).**

These results demonstrate that the majority of treatment pathways were influenced by doctor referrals up to the very end, particularly for those who visited hospitals. It was also observed that none of the traditional options or interventions mentioned referrals to the VVF facilities. This implies that people practicing traditional medicine may lack confidence in contemporary medicine, and those practicing modern medicine may lack confidence in traditional medicine.

b. VVF Patients' personal knowledge through media publicity on VVF

Publicity and efforts in the media also had an impact on how VVF patients were treated. For instance, a patient who heard about the VVF treatment at the Abakaliki Center described hearing about it on the radio. As she narrated:

> I heard it on radio that time and the doctor who did the operation also told us to come here. That the treatment are free, saying it is the wife of the then Governor that open and establish this place, to help people who are suffering from this type of ailments. But after the two repairs failed we decided to try other treatments (**IDI VVF Patient 24 years Ebonyi 2020).**

In another patient who said she got the information through an outreach stated that: *I came to this center because of the outreach team that came to Adamawa. I do not know of any other treatment method* (**IDIVVF Patient 22 years Plateau 2020).** As this patient also

added that shegot the information through an outreach, she noted that: *I was still leaking despite the repair and medicine taken and then an outreach team from Jos made us know about this place. I was also lucky because during the outreach I got everything including transportation* **(IDIVVF Patient 30a years Plateau 2020).** In another narration of a patient who got the information through a repaired woman, said: *I knew that it could be repaired in Jos because I have seen women who came to Jos and got repaired successfully* **(IDIVVF Patient 35 years Plateau 2020).**

Following the above narratives, it means most of the treatment pathways of VVF patients were influenced by the information they received or heard on radio, campaigns and other publicity rather than doctors' referrals.

c. Family members or significant others' referrals.

It is important to recognize the efforts put forward by family members or significant others who recommend VVF patients to various levels of care. This is partly because they also had an impact on how VVF patients choose to proceed with their therapy or repairs. One VVF patient in Ebonyi State, for instance, remarked that her relatives had a significant influence on the majority of her treatment decisions. In her statement when asked: *I told you, it was one of our cousin sisters that directed us to this place through an old repaired person from this place. Since the catheter and the herbs did not work I decided to come to this center* **(IDI VVF Patient 35b years Ebonyi 2020).**

In another VVF patient who subscribed to an old repaired person, who referred her to the VVF centre stated that:

> It was when I came back to my village that my daughter asks people about such sickness, one woman said that, she will take me to this place that she knows where they use to treat people that have such problem; and the treatment is free. That was how I found myself here (**IDI VVF Patient 40b years Ebonyi 2020).**

From another patient in Plateau State, it was stated that a man in their community informed her of the VVF centre in Jos, she described that: *It was a man in my community that told us about this place so we decided to come and try since the former treatment did not work*

(IDIVVF Patient 9 years Plateau 2020). Another VVF patient who was influenced by a repaired woman said that: *I came to this center because I was leaking and a women who had her repair here successfully told me about this place* **(IDIVVF Patient 19 years Plateau 2020).**

A VVF patient from Jos who was influenced by her friend stated that:

> I came here because I heard from a friend that I should try this center out that a lot of people have come here and gotten it done successfully. The first repair I did was okay just for few weeks and resurfaced although not in same force and the blood accumulation in my womb is still there sometimes the urine leakage is bloody. The only thing I do in addition is home remedy like taking of hot water and pepper soup as advised by some friends (**IDIVVF Patient 36 years Plateau 2020).**

In a patient whose influence was from in-law who had her repair in Jos VVF centre said that: *I chose this center because my in-laws repair was done here and it was done well. She said they have very good hands and are experienced* (**Case study VVF Patient 25 years Plateau 2020).**

This implies that many of the VVF patients were influenced to take the different treatment pathways they undertook either through doctors' referrals, personal knowledge through media publicity or referrals from family members or significant others.

4.6 Factors Influencing Care and Support for VVF Patients

The ability to access social supports is crucial for the management of any health condition. This study also investigated factors impacting family support for VVF patients. In order to determine whether VVF patients received support from any community members, information from the hospital records was retrieved and analyzed. The outcomes were shown in Figure 4.22. In contrast to only 15.2% of patients who did not receive family support, the figure showed that nearly all VVF patients received it for their well-being and speedy recovery. This may also imply that Plateau State VVF patients were less likely to obtain family support than those in Ebonyi State.

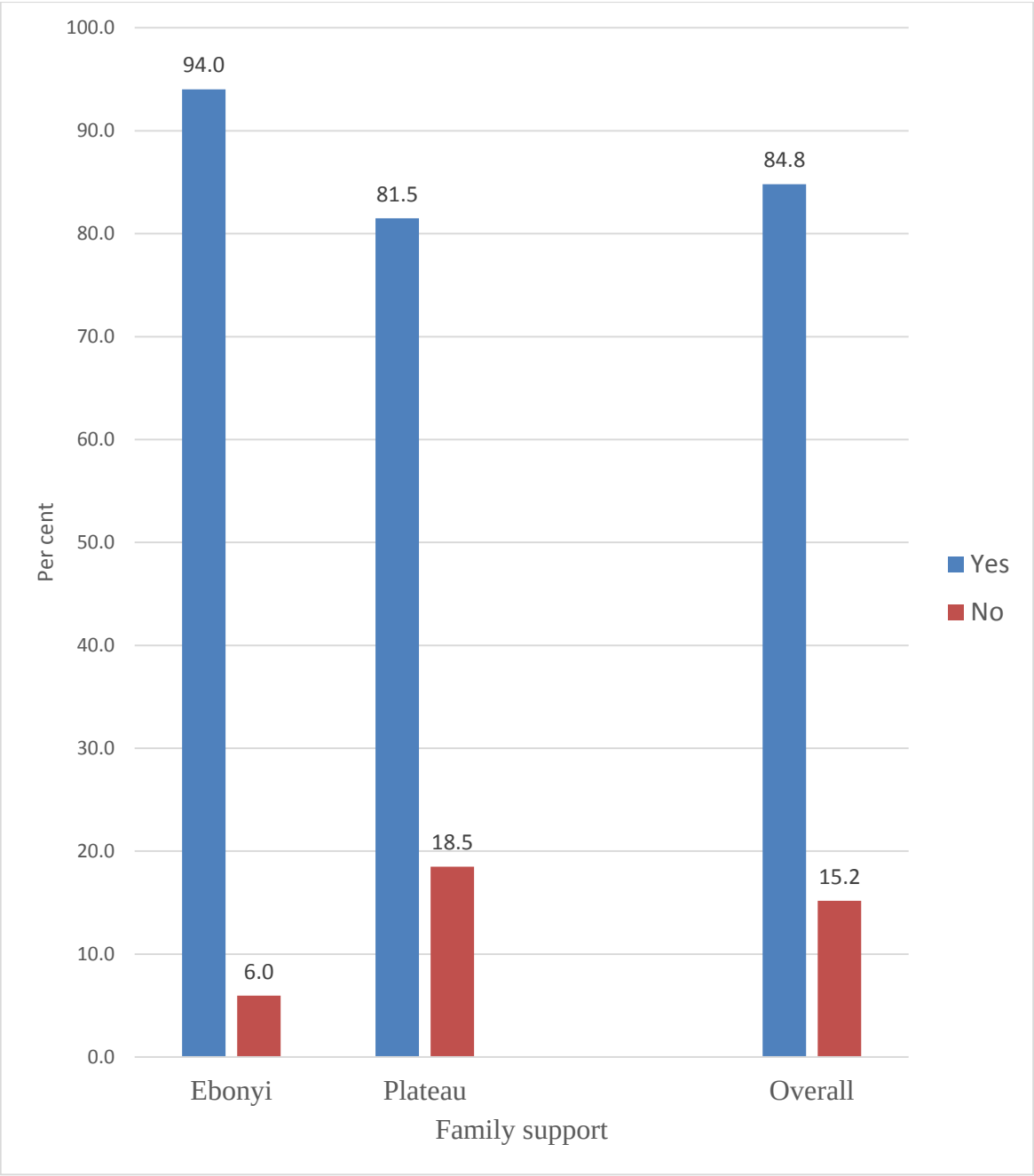


Figure 4.22: Distribution of VVF Patients by Family Support
Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

As further analysis of supports is presented in Figure 4.23, the specific family members who provided the VVF patients with supports were presented. The Figure revealed that the majority of those who provided family supports in Ebonyi State were husbands (83.2%), followed by parents (10.7%) and other relatives (6.1%) of the patients. In Plateau State, more than half of the VVF patients pointed out that other relatives (54.8%) provided the support as against their counterparts in Ebonyi State who indicated that the majority of their husbands undertook such responsibilities. Although in the overall, the husbands of the patients and other relatives provided almost equal supports in proportions, there existed a wide disparity in who provided supports among the members of the family of VVF patients across the two states as shown in Figure 4.23.

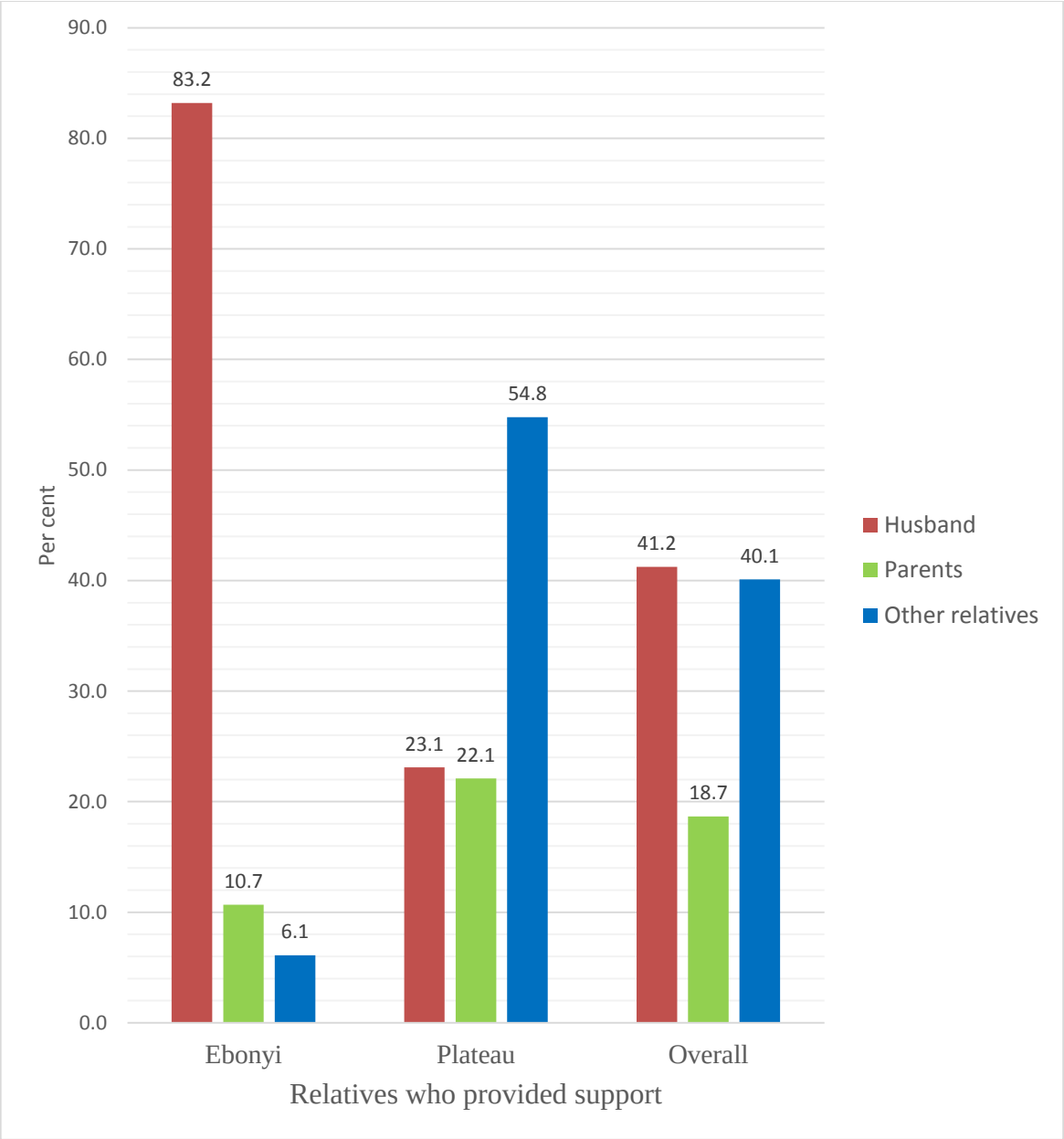


Figure 4.23: Distribution of VVF Patients by the Relatives who Provided Support
Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

Table 4.10 presents the cross-tabulations of family support by some socio-demographic characteristics of the VVF patients. The Table revealed that there were statistically significant relationship between age of VVF patients (x^2 = 65.133, p<0.05), religion (x^2 = 32.383, p<0.05), educational attainment (x^2 = 33.396, p<0.05), marital status (x^2 = 134.021, p<0.05), parity (x^2 = 42.971, p<0.05) and family support as indicated by who provided the supports.

These findings imply that whether other relatives, the patients' husbands, or their parents should provide support or not depends significantly on the state of residence, age, religion, educational level, marital status, and parity of the patients. These could also be used to assess the social ties that patients, their partners, and other family members have despite the fact that it is anticipated that there will be a stronger social connection between patients and their spouses than between patients and their parents or other family members.

Table 4.10: Cross-Tabulation of Family Support by Socio-demographic Characteristics

Socio-Demographic Characteristics	Response Categories	Who Provided Family Support			Chi Square
		Other Relatives	Husband	Parent	
State**	Ebonyi	8 (6.1)	109 (83.2)	14 (10.7)	x^2=138.952 P=0.000
	Plateau	166 (54.8)	71 (23.4)	66 (21.8)	
Age**	15 – 19	15 (8.8)	7 (3.9)	13 (18.6)	x^2=65.133 P=0.000
	20 – 24	27 (15.8)	23 (12.8)	27 (38.6)	
	25 – 29	35 (20.5)	33 (18.3)	15 (21.4)	
	30 – 34	31 (18.1)	41 (22.8)	7 (10.0)	
	35 – 39	23 (13.5)	36 (20.0)	5 (7.1)	
	40 – 44	8 (4.7)	21 (11.7)	3 (4.3)	
	45+	32 (18.7)	19 (10.6)	0 (0.0%)	
Religion**	Christianity	101 (58.4)	149 (83.7)	46 (58.2)	x^2=32.383 P=0.000
	Islam	71 (41.0)	28 (15.7)	33 (41.8)	
	Traditionalist	1 (0.6)	1 (0.6)	0 (0.0)	
Educational Attainment**	No formal education	89 (51.4)	50 (27.8)	27 (33.8)	x^2=33.296 P=0.000
	Primary	39 (22.5)	38 (21.1)	23 (28.8)	
	Secondary	35 (20.2)	71 (39.4)	28 (35.0)	
	Tertiary	10 (5.8)	21 (11.7)	2 (2.5)	
Marital Status**	Single	14 (8.2)	0 (0.0)	26 (32.9)	x^2=134.021 P=0.000
	Married	107 (62.6)	174 (96.7)	38 (48.1)	
	Separated	18 (10.5)	2 (1.1)	11 (13.9)	
	Divorced	19 (11.1)	0 (0.0)	3 (3.8)	
	Widow	13 (7.6)	4 (2.2)	1 (1.3)	
Parity**	0	3 (1.8)	1 (0.6)	5 (7.1)	x^2=42.971 P=0.000
	1	57 (33.5)	38 (22.5)	33 (47.1)	
	2	22 (12.9)	24 (14.2)	9 (12.9)	
	3	16 (9.4)	33 (19.5)	7 (10.0)	
	4	11 (6.5)	24 (14.2)	4 (5.7)	
	5	20 (11.8)	9 (5.3)	4 (5.7)	
	6+	41 (24.1)	40 (23.7)	8 (11.4)	

Significant at P<0.01**

Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

4.6.1 Nature of Care and Support for VVF Patients

A qualitative method was used to investigate the type of care and support available to VVF patients. The first theme observed revealed that while some VVF patients lacked care and support, others provided their patients with sufficient care and support. These two categories are further explained:

a. Lack of care and support for VVF patients

Among those who lack care and support, it was revealed that there was no support from anybody. According to one of the VVF patents from Ebonyi State, there was no support from anybody after the death of her father. As she rightly stated:

> No support from anybody, I use to farm for people to pay me in the village before somebody connected me to the traditional ruler am serving today. My father and mother died some time ago, none of my relative is supporting me. No care from anybody, I am suffering to survive by myself (**IDI VVF Patient 24 years Ebonyi 2020).**

Similarly, one of the patients in the same state also affirmed that nobody care for her including her husband. As she narrated:

> Nobody cared for me, my husband only came to Parklane Hospital to carry the death baby, after then, he never care to ask about me again, I am now living with my mother at village, I went to human right at that time, they lock him up and beat him, yet he did not repent, we went to village to settle the matter but he insisted, I don't know what exactly happened, what he said I did to him (crying) he is the one who impregnated me, I never know any other man ever since I married to him, he left me with two of our children to suffer alone (**IDI VVF Patient 31 years Ebonyi 2020).**

With the above narratives, there seems to be no patients who lacked care and supports from the significant others from Plateau State. This demonstrates a relationship between the socioeconomic status of the patients and the level of support and care they receive from close relatives and friends. To put it another way, there is a potential that people with jobs have a larger chance of becoming independent than people without jobs. As a result, they are better equipped than others to manage their problems, which may have drawn people to their plights they were of low socio-economic status in their respective communities.

b. Availability of care and support for VVF patients

While some of the patients felt that they did no receive sufficient care and support, others felt that they receive adequate care and support from the significant others. According to a patient from Ebonyi State, it was stated that she had a very good care and support both at the hospital, at home and from her husbands. As she noted when asked: *Very good, I was adequately being taken care of at the hospital, even at home too, my husband and his closed relatives always cared for me, and they use to call me as am here now* (**IDI VVF Patient 29 years Ebonyi 2020).**

In another respondent who said she had a very supportive husband and relatives, it was indicated that:

> They are all supportive, my husband is here with me, since we came here, he has been caring and supporting me, same with my family and relative. They provide the things I need. I am lucky because I heard of people who were rejected due to this problem. I thank God **(IDI VVF Patient 34c years Ebonyi 2020).**

In another patient also added that she received adequate care and support from members of her family despite all what she had taken them through in the condition. She noted that: *My family is taking good care of me despite what I brought to them. My father comes with me for all hospital appointments. They have been trying their best* **(IDIVVF Patient 18b years Plateau 2020).**

Another VVF patient from Plateau indicated that her parents took care of her, as she explained: *My parents are taking care of me very well. My mother has been with me since we came down to the VVF center. My friends are still caring they came from Nasarawa to greet me. And they have all been supportive* (**IDIVVF Patient 20 years Plateau 2020).**

As another VVF patient added who said not only her people took care of her but the caregivers of other patients narrated that:

> Care and support is fair; my people have no money to come around to care for me but we the patients do things together and care for each other. A person's caregiver can help another patients in doing some things. Sometimes if you come to the center you may not know which caregiver

> is related to victim. There is little or no financial support it is only God that has been helping. Emotional and moral support from my husband is not there **(IDIVVF Patient 25b years Plateau 2020).**

There are two ways to look at it from the viewpoint of a healthcare professional. Others take up the responsibilities of caring for and supporting their sufferers, however some family members lack the ability to do so because some of their spouses divorce them as a result of the VVF condition. As the healthcare giver exclaimed and said:

> Haaaa! What does the family have? Most of them have nothing. Normally when we repair fistula you will not be allowed to deliver by vagina again but through a cesarean section. We take the burden of paying the hospital for that because they cannot afford that. Some of the have gone home and delivered through the vagina and then reopen the repair. Care and support of the patients is getting better; it was worse before than now. It is easier to divorce these patients and marry another wife I the north but generally the rate of divorce due to VVF is reducing because they see it is repairable. It is what we internalize that we practice; religion did not say we should reject a sick person but so it has led to the reduction in divorce. Some husbands follow the patient to the hospital while some do not. But I do not totally agree that those who do not follow their wives to the center are not supportive; it may be that they have just little money for transport and feeding to give so coming along may take that away and be lot more hard financially. Some of the victims do not go home after booking they stay around due to funds. VVF center also intervenes so that they can go back home (**KII Health Caregiver Plateau 2).**

In addition to the above caregiver, it was noted that not all patients receive adequate care but some are being supported by parents and family members. As she noted: *Not really, few of them receive adequate support from family, spouse and friends, while majority of them are treated as outcast dejected, abounded and ostracized* (**KII Matron Ebonyi 2020).** In support of the above caregiver, a nurse stated that not all the patients are supported and care for, but some are being taken care and supported by their husbands. *Not all the patients, some are being cared and supported by husbands and family relatives while some are been dejected, ostracized or even divorced by their husbands* (**KII Nurse Ebonyi 2020**

This implies that while some patients are cared for and supported by their family and community, others are not. It follows that a VVF patient who experiences a lack of emotional support from her family members is more likely to experience undesirable

consequences than a patient who receives adequate emotional support from family members.

Spousal care and support

In the events where some of VVF patients are being supported and cared for by their husbands, while others were not; respondents were asked to specifically describe the care and support they received from their husbands. Two emerging issues were generated, namely good spousal care and support, and bad husband's care and support.

a. Good spousal care and support

In the narrative of the good spousal care and support, one of the VVF patients noted that she had a very good husband which always pay her hospital bills. In her statement however;

> Very good, my husband use to take care of me at the hospital, he is the one who pay the hospital bill, he is very caring, he use to come here every day, to know how I am. Even, here, he is the one that brings money to buy some drugs they don't have in this hospital (**IDI VVF Patient 34 years Ebonyi 2020).**

In support of the above assertion, it was also explained by this patient that: *My husband is very supportive and caring, he is the one that bring me to this place, even during that February, we first came, and he took us to this place* (**IDI VVF Patient 30 years Ebonyi 2020).**

These results revealed that there were some VVF patients who had good and cordial relationship with their husbands even when there was ill-health condition with their wives.

b. Bad spousal care and support

On the other hand, it was discovered that some of the husbands of VVF patients were not helpful and caring due to the difficulty of their poor health. One of the patients from Ebonyi State mentioned that her spouse left her three years ago as a result of her condition. In her opinion, it was stated that:

> I don't known, what to say, my husband left me three years ago from where we are living at Achina, Anambra State and come to stay with his

> other two wives, I am the 3rd wife, so, nobody is taking care of me, I always do farm work for others and get paid. I use it to feed my children, just this year that I came back to village from that Anambra (**IDI VVF Patient 40b years Ebonyi 2020)**.

In the opinion of another husband of VVF patient in Ebonyi State, it was stated that her husband behaviour changed immediately after her ill-health condition. In her viewpoint, she maintained that:

> After the death of my last child, my husband's behavior changed, he don't use to give me attention again, until when he officially decided to bring me back to my parents, so there is no support from my husband and his relatives. It is my family that is taking care of me in the hospital with the little they have it has not been easy (**IDI VVF Patient 41 years Ebonyi 2020).**

In another narratives of poor spousal care and support, it was explained by a patient from Plateau State that her husband did not show any form of care and support. It was further stated that it was her mother that took up the responsibilities of taking care of her rather than the husband. As she noted: *Care is far from me. Thank God my mother is alive if not I would have suffered so much. My husband did not show any form of support but left me* **(IDIVVF Patient 17 years Plateau 2020).**

From this patient, it was averred that the care she got from her husband was not enough. As she noted: *The care I get is not enough; my husband is not there for me and no money for family members to come and care for me. But at the center we help ourselves and it makes it easier* **(IDIVVF Patient 20b years Plateau 2020).** Similarly, another patient who got separated from her husband explained that: *What can I say? My mother has been with me and I am grateful. But since I developed VVF I have been separated from my husband I now stay with my parents. The burden is now on my family* **(IDIVVF Patient 22b years Plateau 2020).**

In the opinion of this patient, who lacked emotional and moral support from her husband, she explained that it was her grandmother that has been everything for her rather than the husband. She stated thus: *My grandmother has been everything to me, she tried her best; asides her I have not received care and support from anyone. No emotional and moral support from my husband and close family. It has been hard* (**IDIVVF Patient 22c years**

Plateau 2020). In addition to this, another VVF patient from Jos submitted that: *I don't even know what to say because the care is just little but managing. I am here with my sister. My husband has not even called to know I am* (**IDIVVF Patient 25 years Plateau 2020).**

Another VVF patient's account claimed that only other patients at the clinic where she was receiving care and attention provided her with support, not even her husband. As she described: *I have no form of care and support from anywhere. It is a fellow patient who has not yet undergone repair that helps me. After her repair I will help myself; what can I do? My husband behaves as if I do not exist* (**IDIVVF Patient 27 years Plateau 2020).**

This indicates that the condition made their husbands more likely to act in an unkind way. Whatever the case, these behaviors could be caused by a number of circumstances. First, the smell from the affected woman might not be appealing to the spouse, second, there might not be much libido for sexual activity because of pains, and third, the affected person might have spent more money on the condition than he could endure any longer. A dysfunctional marriage may develop as a result of all these reasons.

4.6.2 Factors Influencing Care and Support for VVF Patients

This section examines and documents the factors influencing care and support for VVF patients. Six emerging themes were generated and are highlighted below:

i. Community perception on VVF patients;
ii. Number of repairs for VVF patients;
iii. Marital status;
iv. The cause of VVF;
v. Level of husbands' affection towards wife;
vi. Husband's decision.

These emerging themes of factors and care and support for VVF patients have been represented in Figure 4.25 where the six factors have been highlighted and the associated causes.

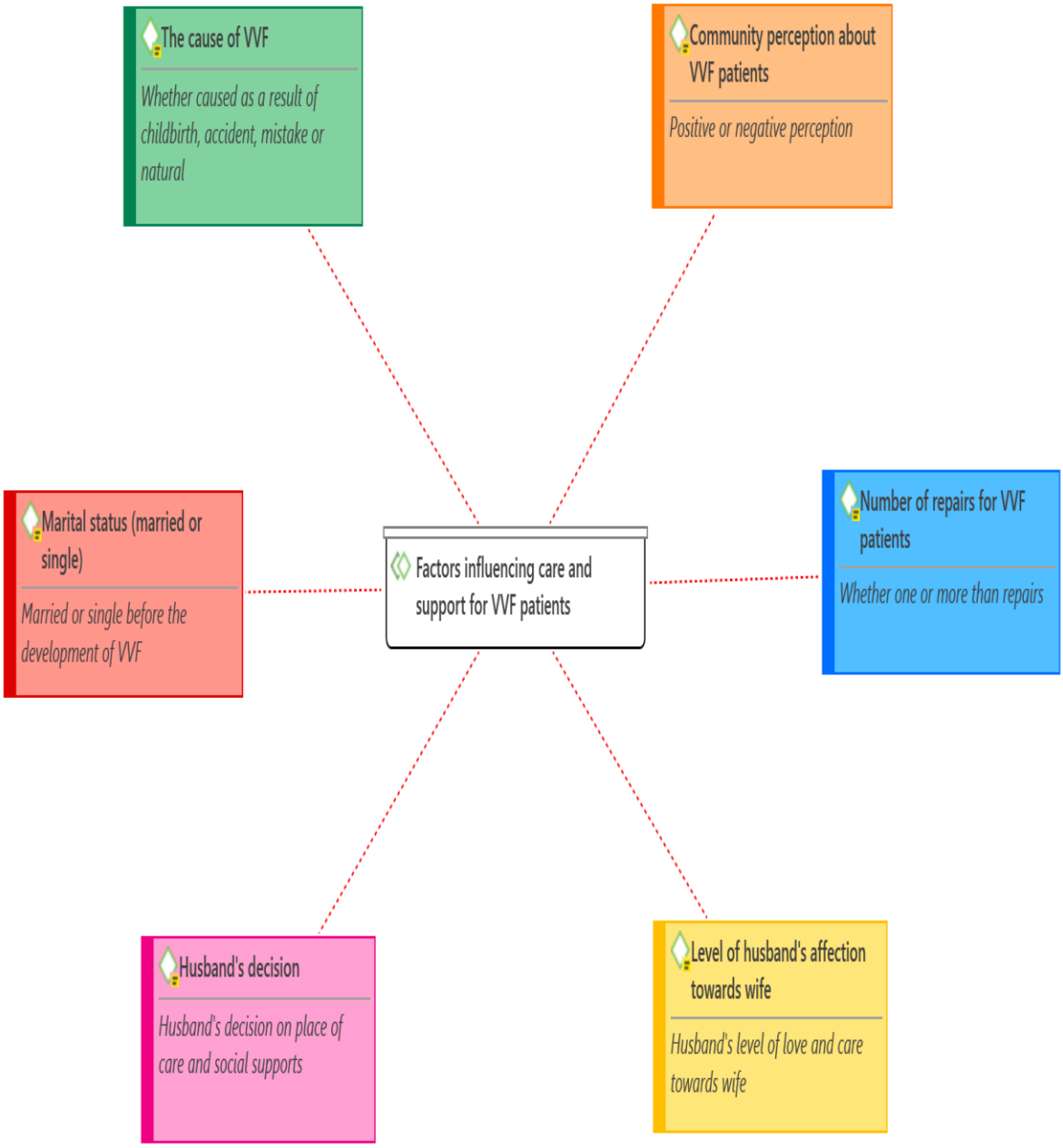


Figure 4.25: A Diagram Showing Factors Influencing Care and Support for VVF Patients

Source: Researcher (2020)

a. Community perception on VVF patients

This study investigated how the community views VVF patients and how they are handled. The findings indicated that the community's perceptions of VVF sufferers were complex. From the favorable viewpoint, it was discovered that neighbours support and encourage the patients. As one of the respondents who had VVF claimed, she received supportive words and sympathies from members of the community.

> I use to receive words of encouragement and sympathy from people at the village, nobody is making mockery of me or rejects me, and they console me with examples of others that have had similar case. I receive courageous words from them, both my church members and women in the community (**IDI/VVF Patient/34 years Old/Ebonyi/2020)**.

In another expression of positive perception, it was maintained by a participant that they (community people) were good to her. As she noted:

> They are all good to me, especially my church members. They always pray and ask of me, even as am here now they use to call me and ask how am fairing, for other community members, nobody is aware except my few close friends. Some people may have heard and spoken badly about me but I am not aware of any of such (**IDI/VVF Patient/55 years Old/Ebonyi/2020)**.

In the expression of this participant who said she had no problem relating with the members of her church and community even with her condition, she noted that:

> I don't have problem with anybody, although is only few of my church members that are aware of this problem, I stays in the town where everybody mind his/her business, nobody is aware of my condition, I don't even have much friends, I stay indoors all the time, except if I want to go to church or market to buy something (**IDI/VVF Patient/36 years Old/Ebonyi/2020).**

However, while most participants felt that relatives and community members sympathize with them for their condition, some participants explained that some people felt irritated due to the smell that emanates from their bodies. As such, they stay in isolation in order to avoid being disgraced by people. In the narration of one of the participants, it was revealed that:

> My relationship is normal with my family. And I am fine. I know I will be well after my treatment. I feel some people don't like me and are afraid

> of coming close to me because of the smelling urine leakage. Even my mother sometimes feels irritated. I stay at home without going out. I do not go to where people are so that I will not be disgraced (**IDI/VVF patient/20 years Old/Plateau/2020**).

From another patient whose mother expressed the reaction of community members towards the patient she cares for, it was revealed that community members stigmatize her. In her words:

> Her friends laugh at her because they feel a child of that age should not be urinating on herself. In the community she gets a lot of bad talks such as "*ki tashi mun anan me warin pisari*" (shift away from me you smell urine). However, she has some good friends especially those who know it is a sickness and not a habit (**IDI/VVF patient/9 years old/Plateau/2020**).

Community perceptions about VVF have a significant impact on the care and support spouses, family members, and community members provide. Additionally, it implies that when the general public has a favorable view of VVF patients, they will receive favorable care and support, and when the general populace has a negative opinion of the condition, VVF patients would likely receive unfavorable care and support from the wider populace.

b. Number of repairs for VVF patients

It has been discovered that the number of repairs for VVF patients has an impact on their treatment and support. For instance, one of the VVF patients indicated that the care and support provided to her was inadequate, partly because her spouse had provided excellent assistance during the initial repairs but had abandoned her during the subsequent repair. As she explained:

> The care and support is not okay; when it started people were still around me, my husband gave me money to come for repair but after the 1st and 2nd repair did not work, I had to look for money (5000 naira) to come back for the third repair and till now even his one kobo has not been given for my treatment. The care taker my husband sent to bring me down the first time spent all the money he was given on drinks and meat and left me without food and toiletries. He was sent because he knew the place. When he got back he was appreciated with chicken and cash gift of 10000 naira after squandering my money. Subsequently I starting coming alone with no one to help. He has stopped showing care and concern. When I go to ask for funds he will not even look at me talk more of answering me? I had to go look for money which was not even enough to come to

> Jos. After my checkup I cannot go home because I do not have money for transportation I have to remain here until I get money. I eat if I get food from the kitchen because I act as a care giver sometimes. Like today for instance I could only get pap in the morning and that is all. I depend on people's food. Thank God I was allocated a space in the VVF hostel after complaining. Even my own family is not caring; for instance my mother said her hands are not in this matter (**IDIVVF Patient 30 years Plateau 2020).**

In addition to this, another VVF explained that it was during her first repair the husband was very supportive but during the second repair, he was not. As she narrated;

> My husband has never pitied me; he did not care and he has a lot of money instead he divorced me because of my situation. He only showed interest in the first surgery as it wasn't successful he left me. Had it been my father was alive I would have gotten good care but since he died I have been the one taking care of myself with no support from anyone. Finance has been difficult; when I was told to go and come back after four months I could not because of no money. I stayed for a year before coming due to no support. During the second break of 3 months I could not go back home because I did not have money to come back so I stayed back in the center (**Case study VVF Patient 30 years Plateau 2020).**

From another patients who submitted that she had had four unsuccessful repairs, it was stated that:

> I came to Jos Fistula Center March 2018 after 4 unsuccessful repairs. The repairs had affected my vagina because repairs on the bladder were done through the vagina and it is now blocked (tiny). They said the next repair will be done through the anus. They have been pumping me so that I can urinate. After the 5th repair in Jos it stopped and I was hopeful that it was over but after a while it started again but not as much as before. This last repair was done through the stomach. I have a very long tear on my stomach. Since I came to this center I have not taken any other form of treatment asides modern medicine **(Case study/30 years Old/Plateau/2020**).

These findings imply that depending on the psychological wellbeing of the significant others the patients are surrounded by, the number of repairs performed on the patient may influence either positive or negative care or support for the patient. On the positive side, relationships with significant others appear to be good if repairs are made only once and are effective, but when repairs are made more frequently, patients' significant others appear frustrated and seem to be withholding their support.

c. Marital status (married or single)

One of the important factors affecting the care and support for VVF patients has been identified as their marital status. One of the patients said that her husband constantly takes care of her and is there for her. Indeed, the wife had both material and emotional assistance from the husband. In her words: *Very good, my husband always cares and support me all the time he takes good care of me throughout the period, he always support me financially, emotionally and otherwise, I don't have problem with him and his relatives* **(Case study/34 years Old/Ebonyi/2020**).

On the other hand, it was reporte that there was absolutely no support for a patient who was not married. She relies on her farm labour in the community before she was connected to a traditional ruler who later became a pillar of support for her rather than continuing to be without care and support from anyone. In actuality, none of her family members helped her during the illness. As she explained:

> No support from anybody, I use to farm for people to pay me in the village before somebody connected me to the traditional ruler am serving today. My father and mother died some time ago, none of my relative is supporting me. No care from anybody, I am suffering to survive by myself **(Case study/23 years Old/Ebonyi/2020**).

These suggest that patients who are married appear to receive positive care and support from their spouses, in-laws, or even parents, though this varies from person to person; in contrast, patients who are not married appear to receive less care and support from the close friends and family members they are surrounded by. This may be because it is culturally accepted that married people who have VVF are more responsible than those who have the condition but have not yet married.

d. The cause of VVF

The VVF patient's treatment and support from loved ones may be influenced by the VVF's underlying etiology. One of the patients, for instance, explained that her spouse loved her because she was not the cause of the VVF and that the condition was brought on by childbirth even though she lost the baby. As she explained: *My husband still love me, and he cares for me. After all I was not the cause of the VVF, it was after childbirth I had the*

urine leakage. It also means that it was as a result of when I was giving birth to his baby even though I lost the baby (**IDI/VVF Patient/36 years Old/Ebonyi/2020).**

In a different perspective, a respondent who was naturally ffected by VVF indicated that her mother had to provide her with the necessary care and support because that was how she had always been since birth. As she narrated: *Even though her friends laugh at her, we have to take care of her because she was not the cause. That was how we gave birth to her and we have been taking care of her. She really need our care and support* (**IDI/VVF patient/9 years old/Plateau/2020**).

This can be understood to mean that once the rason is recognized as natural, people's attitudes toward her care and support will differ from when it was brought on by other circumstances, such as community members and significant others.

e. Level of husband's affection towards wife

The level of husband's affection towards wife is also identified as a strong determinant of care and support for VVF. In the narration of this respondent, it was maintained that:

> Nobody cared for me, my husband only came to Parklane Hospital to carry the dead baby. After then, he never care to ask about me again, I am now living with my mother at village, I went to human right at that time, they lock him up and beat him, yet he did not repent, we went to village to settle the matter but he insisted, I don't know what exactly happened, what he said I do to him (crying) he is the one who impregnated me, I never knew any other man ever since I married to him, he left me with two of our children to suffer alone (**Case study/31 years Old/Ebonyi/2020)**.

Another patient gave a similar justification, saying that her husband was great because he cared after her and supported her during the difficult time. She went on to say that he supported her in other ways as well, including financially and emotionally. As she narrated: *Very good, my husband always cares and support me all the time he takes good care of me throughout the period, he always support me financially, emotionally and otherwise, I don't have problem with him and his relatives* (**Case study/38 years Old/Ebonyi/2020)**.

In support of the husband who cherished his wife, it was noted that he had not abandoned her and that people's opinions of her had changed simply because of his favorable attitude toward her at the time. As she stated:

> Care and support have been good. I have not been rejected. The way people feel about me has not changed. And I also do not feel withdrawn or sad. Look at me I would not have been this fat and happy if I was not getting support. Although my in-laws experience made them more supportive and understanding (**Case study/25 years Old/Plateau/2020)**.

However, it was said from the account of a husband who did not love his wife that he never felt sorry for her or showed any sign of caring for her. Instead of showing her love and support, he divorced her. As she described: *My husband has never pitied me; he did not care and he has a lot of money instead he divorced me because of my situation. He only showed interest in the first surgery as it wasn't successful he left me (…) Finance too has been difficult (…)* **(Case study/30 years Old/Plateau/2020**).

The fact that the woman experienced VVF ad was rejected by her husbands added to the perception of a husband who did not love his wife. In the view of this respondent, it was explained that since she developed VVF, her husband lef her. As she noted:

> My husband left me after I developed VVF; after I developed VVF I stayed in his house for 9 months before he said I should leave his house saying I smell and cannot have sexual intercourse with me. My friends laugh at me and do not like to stay around (**IDI/VVF Patient/22 years Old/Plateau/2020)**.

This suggests that the extent to which a husband loves his wife will determine the degree to which their marriage will endure even after the wife has had VVF. Again, the level of assistance provided to the affected lady by her husband will effect how the community members view her.

f. Husband's decision

The decision of the husband also might affect how the patients are supported and cared for. One of the patients, for instance, said that her spouse and family members decided what kind of treatment she would get. As a result, the husband would make the decision regarding care and support. In her statements:

> My husband and family made the decisions of the kind of treatments I will get. From the traditional method to my first visit to the Fistula Center in Abakiliki. Maybe they felt traditional medicine was better and less expensive since they had wanted me to give birth at home. I was still little so I cannot say much about that. **(Case study/30 years Old/Plateau/2020**).

Together, these findings have a significant impact on the care and support a VVF patient will likely receive, as well as on whether or not the patient will be psychologically stable.

4.7 Socio-economic Consequences of VVF

This section examined the socio-economic consequences of VVF among the affected women in Ebonyi and Plateau States. While it is expedient that the socio-economic consequences of VVF were explored, the outcomes of VVF among VVF patients were first analysed. Table 4.11 presents the summary of the results. The analysis revealed that the majority (55.5%) in the overall experienced menses since delivery but those who were Ebonyi State seems to be more likely to experience menses since delivery than those in Plateau State.

In the medical records that were extracted from the hospitals, what was leaking from the vaginal since the delivery among VVF patients were documented. The Table revealed that urine was the major thing that was leaking among VVF patients across the two states. As the VVF patients in Ebonyi State added, the majority also experienced stillbirth (76.6%) as compared to only 23.4% who had live births. These imply that VVF could have adverse effects on both the patients and their infants.

Table 4.11: Distribution of VVF Patients by the Outcomes of VVF Condition

Variables	Response categories	Ebonyi (n=136)	Plateau (*n=381*)	Total (n=517)
Menses since delivery	No	0.0%	192 (52.0%)	192 (39.8%)
	Stopped	23 (20.2%)	0 (0.0%)	23 (4.8%)
	Yes	91 (79.8%)	177 (48.0%)	268 (55.5%)
Leakages (What is leaking)	Both faeces and urine	0 (0.0%)	10 (2.7%)	10 (1.9%)
	Faeces	7 (5.1%)	18 (4.9%)	25 (4.9%)
	Urine	129 (94.9%)	341 (92.4%)	470 (93.1%)
Birth outcome	Live birth	30 (23.4%)	0 (0.0%)	30 (23.4%)
	Stillbirth	98 (76.6%)	0 (0.0%)	98 (76.6%)

NB: Figures in parentheses are in %

Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

In showing the relationship between the states of residence, number of pregnancy, place of delivery, mode of delivery and VVF outcomes using the hospital records, Table 4.12 shows that there were statistically significant relationship between the state of residence (x^2 = 8.206, p<0.05), place of delivery (x^2 = 72.322, p<0.05), mode of delivery (x^2 = 81.372, p<0.05) of the patients and what was leaking. These could be translated to be that the state of residence, place of delivery and mode of delivery were strong determinants of what was leaking among VVF patients who indicated that there were leakages in their private parts as outcomes of the condition.

Table 4.12: Cross-Tabulation of States of Respondents, Number of Pregnancy, Place of Delivery, Mode of Delivery and what is Leaking

Variables	Response categories	What was leaking from the vaginal			
		Both faeces and urine	Faeces	Urine	Total
State of residence*	Ebonyi	0.0%	28.0%	27.4%	136 (26.3%)
	Plateau	100.0%	72.0%	72.6%	381 (73.7%)
	Chi Square = 8.206, P=0.042				
Number of pregnancy	0	0.0%	0.0%	0.2%	1 (0.2%)
	1	85.7%	21.7%	37.7%	165 (37.5%)
	2	0.0%	26.1%	12.7%	58 (13.2%)
	3	0.0%	17.4%	13.2%	59 (13.4%)
	4	0.0%	0.0%	9.3%	38 (8.6%)
	5	0.0%	13.0%	6.4%	29 (6.6%)
	6	14.3%	21.7%	6.1%	31 (7.0%)
	7	0.0%	0.0%	4.2%	17 (3.9%)
	8	0.0%	0.0%	2.9%	13 (3.0%)
	9	0.0%	0.0%	2.9%	12 (2.7%)
	10	0.0%	0.0%	2.2%	9 (2.0%)
	11	0.0%	0.0%	1.2%	5 (1.1%)
	12	0.0%	0.0%	0.7%	3 (0.7%)
	Chi Square = 46.797, P=0.107				
Place of Delivery**	Home	30.0%	24.0%	6.0%	35 (6.8%)
	Hospital	10.0%	68.0%	81.9%	410 (79.3%)
	TBA	60.0%	0.0%	1.5%	7 (1.4%)
	Chi Square = 72.322, P=0.000				
Mode of delivery**	C/S	50.0%	32.0%	65.3%	321 (62.1%)
	SVD	0.0%	12.0%	4.5%	24 (4.6%)
	TBA	0.0%	0.0%	0.2%	1 (0.2%)
	Vaginal	30.0%	56.0%	17.9%	102 (19.7%)
	Chi Square = 81.372, P=0.000				

Significant at P<0.05* or P<0.01**

NB: Figures in parentheses are in %

Source: *National Fistula Centre Abakaliki (2020), and Bigham Teaching Hospital Jos (2020)*

At the community level, respondents were asked what exactly VVF can affect in the life of the patients. Figure 4.26 presents the results. While the majority subscribed that the condition could affect other things related to the patients such as the relationship of the affected person with the 'significant others' (e.g. spouse and relatives) as signified by those in Plateau State (67.0%); other categories of respondents suggested that it could affect business activities as indicated by trading in Ebonyi State (45.7%). It was also pointed out that it could affect farming, schooling and paid job depending on the profession of the affected person. This simply implies that at the occurrence of VVF among women, it is expected that the social and economic aspects of the lives of the affected person is faced with some forms of challenges.

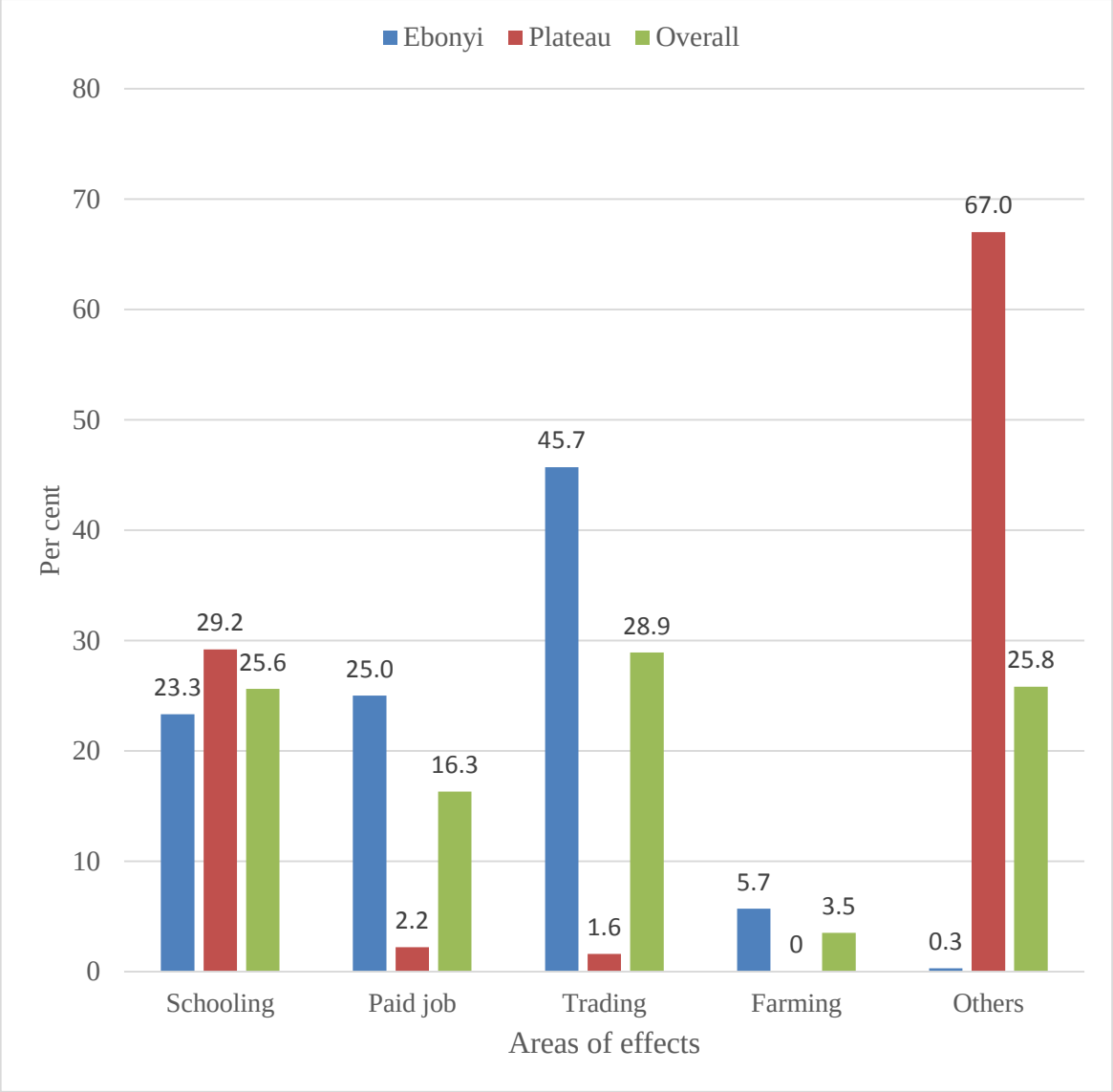


Figure 4.26: Distribution of Respondents by Areas where VVF can Affect

Source: Field Work (2020)

The feelings of the community members towards the affected persons with VVF was also explored as a consequence. Figure 4.27 shows the distribution of respondents by the feelings of community members towards VVF patients. It was revealed that the majority across the two states sympathized with the affected persons with VVF. In spite of this, about 4.0% of the respondents in the overall indicated that they rejected them, while 1.9% of signified indifferent. Although the majority subscribed to the view that they sympathized with the VVF patients, there are still members of the community that perceive them to be rejected.

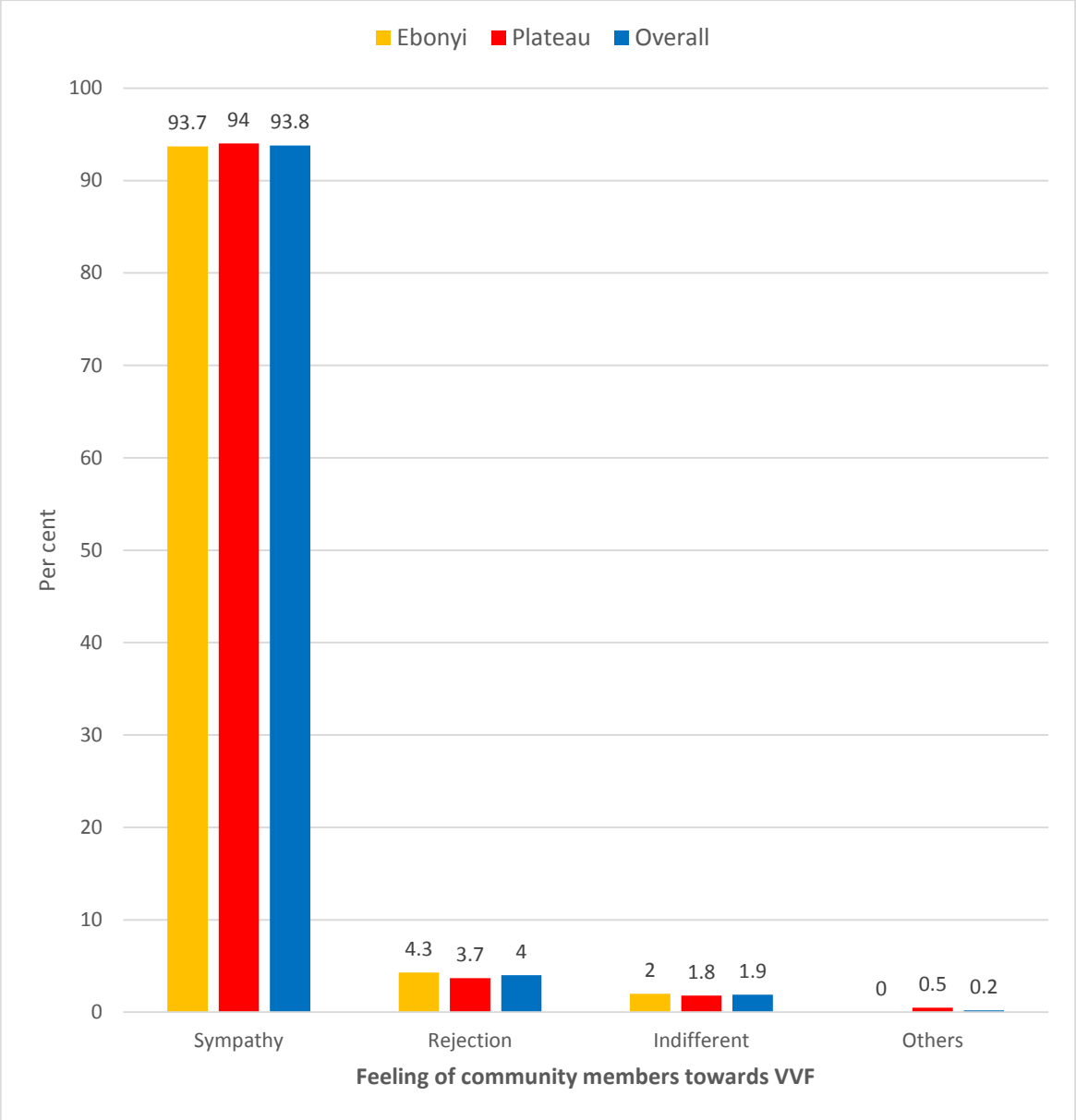


Figure 4.27: Distribution of Respondents by the Feelings of Community Members Towards VVF Patients

Source: Field Work (2020)

Apart from the negative health outcomes of VVF among the patients, there were socio-economic consequences associated with the condition of VVF. For example, findings from the non-numerical data gathered revealed that those who have experienced VVF condition, most often lose their livelihood due to ill-health and incapacitation. In the categorisation of the socio-economic consequences, two emerging themes were identified – effects on social aspects of life and effects on the economic aspects of VVF patients' life.

a. Effects on social aspects of life

Examining the effects on the social aspects of life of the patients, four emerging effects were identified, they are stated as follow:

i. Stigmatisation
ii. Isolation
i. Divorce/separation
ii. Denial of spousal sex

i. Stigmatisation

Stigmatisation is unavoidable due to the repulsive smell that urine leaks produce. One of the respondents in the study on stigmatisation as a social consequence described how her friends would constantly laugh and insult her because of her illness. As she stated when asked about her relationships with others:

> My relationship from my family has been great especially my husband before his death. Friends were always waiting to laugh at me and insult me; they wait to see your back when you stand up to know if you have messed up the place. They do not collect things from me anymore **(IDIVVF Patient 44 years Plateau 2020).**

Another respondent claimed in her explanation that her husband left her because she had VVF and that he had treated her inhumanely. She continued by stating that because of the persistent odour from her body, even her friends gossiped about her and made fun of her. *I left my husband's house due to VVF; he treated me as if I am not a human being. The insults*

from people is a normal thing. If I am passing they insult me. Friends gossip and laugh at me (**IDIVVF Patient 27 years Plateau 2020).**

Many of the affected women experienced emotional pain as a result of the condition of VVF, notably from their husbands. While some people are experiencing dejection, others experience stigma and abandonment. For instance, one of the respondents claimed that after discovering she had VVF, she immediately moved out of her husband's residence and into her parents' house, while her spouse only paid her three visits before ceasing to do so.

> After I developed VVF we got home (husbands house) and we decided I stay in my parents' house to be taken care of. My husband visited me like three times and stopped. After a while I heard that he had gotten married (this happened after my second delivery) he abandoned me and got married to another woman. I have been stigmatized severally, insulted by friends but I cannot do anything since I did not buy VVF with money but God allowed it so I leave it to Him. If I stay in a place people leave that environment saying I smell **(IDIVVF Patient 25b years Plateau 2020).**

This patient provided a different perspective on stigmatisation by explaining that her spouse even left her because he felt like he had spent too much money on her medical condition. As she described. *My husband left me because he felt he was spending too much without result. I get a lot of bad talks from friends; they look at me with so much disgust. Yes I know I smell but people should not add to it with insults* **(IDIVVF Patient 22c years Plateau 2020).**

In addition, a woman who claimed her spouse had neglected her while a friend ridiculed her said she was in a difficult situation since she was unsure of whether her husband would still accept her after the repairs or not.

> My husband neglected me I am not even sure if he will still accept me because he is not saying anything but I pray I will be accepted after the repair is done. Friend of course insults me. They do not come around me anymore **(IDIVVF Patient 22b years Plateau 2020).**

In another ordeal of stigma, it was pointed out by a patient that although her relationship with members of her family was normal, but she felt that people don't like her due to the foul odour from her body. In her statement:

> My relationship is normal with my family. And I am fine. I know I will be well after my treatment. I feel some people don't like me and are afraid of coming close to me because of the smelling urine leakage. Even my mother sometimes feels irritated (**IDIVVF Patient 20 years Plateau 2020).**

The implications are that if people who are supposed to support and care for their wives—such the husbands – do the opposite, the sickness could develop to other health conditions, like high blood pressure and heart attacks. This conclusion can be drawn from the severity of stigmatisation and its effects on VVF sufferers. It follows that how much the husbands of the affected women care for and support their wives will determine the level of care and support given by other family members and community members.

ii. Isolation

Another aspect of social effect is isolation as a result of the foul odour from her body. According to one of the respondents interviewed, it was stated that she normally avoid crowd largely because of the odour emanating from her body. As she rightly described: *I go to farm as usual but I have stopped going to the market, attending church services and meetings. I avoid crowded areas* (**IDI VVF Patient 34c years Ebonyi 2020).**

In the narration of another VVF patient from Ebonyi State, it was noted that she had stopped going to the market because she could no longer control the urine during raining season. In her explanation:

> This problem has affected me mostly during raining season, I don't go to market at that period, it was during this period that urine normally drop most, I can't sit down much, urine will come out, I can go to farm because nobody sees me wet at the farm. I don't also go to church frequently (**IDIVVF Patient 20 years Old Ebonyi 2020).**

In the explanation of another respondent who always separate herself from friend, it was stated that: *I had to separate from friend and do not go out* **(IDIVVF Patient 16 years Plateau 2020).** In another narratives, a respondent said she used to withdraw herself from people though she used to package herself very well while also ensuring that she bathed almost four times in a day. In her words:

> I use to package myself very well, I took bath almost 4 times in a day, I use to organize myself very well, If I did not tell you, you will not know that I have this problem, and me too, I use to withdraw myself from people, I don't use to go close to people, I always be on myself. I may have gone to school or do sometime better if this issue did not come to me (**IDI VVF Patient 24 years Ebonyi 2020).**

In a different account of isolation, a respondent said she always avoided being around other women to avoid potential problems for herself. As she noted: *I do the little I can to feed myself. People do not render help to me due to this problem. I do not go into the midst of my fellow women to avoid problem* (**IDIVVF Patient 57 years Plateau 2020).**

In the experience of another VVF patient, it was narrated that the condition has affected her religious activities due to isolation. In her precise words:

> It has affected me a lot in my daily activities, like me that are members of Jehovah witness, we use to go evangelism two times in a week, and anytime I did not see money to buy pampers, I will stay at home. It has made me to spend all the money I have saved. For my business, is not everything that I go to trade, I feels so weak each time I remember this (**IDI/VVF patient/33 years Old/Ebonyi/2020)**.

For the sufferers, these outcomes may have a great deal of unfavorable effects. While it is generally known that the effects of the stench translate to a literal avoidance of social gatherings, isolation is unavoidable and has its own psychological impacts, including depression and high blood pressure.

iii. Divorce/separation

In addition to the patient being isolated from others, findings indicated that one of the social effects of VVF is divorce or separation from husbands. It was also found that they were always subjected to a perplexed situation. As one of the caregivers in Plateau State noted, they are constantly faced with financial challenges to the point where they lack transportation after treatment, while some of the VVF patients experience divorce and husband neglect. In her statement:

> With what I have seen many of them are lacking adequate care and support. They come for a repair without a care giver so they depend on people for the little help they can get. They are usually financially

> handicapped sometimes to the point that they will not have transportation to go back to their houses. Some will even be confused on where to go whether their husbands house or back to their parents' home. They suffer divorce, neglect and lots of insults. The center has tried in feeding them at least that will reduce their burden a bit (**KII Health Caregiver Plateau 1).**

In the explanation of a patient who underwent divorce, it was mentioned that although others had anticipated she would not get married, she actually did, and that her spouse had divorced her as a result of the financial burden and stench of the illness. As she noted:

> Many said people do not get well from VVF and that I can never get married again except I get married to an old man. But to their surprise I got married, had a child although I still got divorced. Many insulted me with only a few who had sympathy. People in my community see me as a cursed person asking if it is only me that has hospital issues. They feel I want their money to finish on my head and this lead to them staying away from me. If I come to Jos it is my sweat and if I go back its same. I sold all I had to come for treatment **(Case study VVF Patient 30 years Plateau 2020).**

Another patient who had gone through a divorce stated that her spouse had divorced her because she had VVF, and that she was mocked by others for it. As she explained: *My husband divorced me because of this problem, I get laughed at always by people around* (**IDIVVF Patient 17 years Plateau 2020).** Some of the husbands of the patients appear to be resolving the issue of VVF primarily through divorce. This is because a nother patient described how her spouse left her after she had lived in his house for nine months, stating that she smelled and that he could not have sexual intercourse with her again. This happened shortly after she discovered she had VVF. As she stated:

> My husband left me after I developed VVF; after I developed VVF I stayed in his house for 9 months before he said I should leave his house saying I smell and cannot have sexual intercourse with me. My friends laugh at me and do not like to stay around (**IDIVVF Patient 22 years Plateau 2020).**

Some of the affected women's spouses chose divorce, while others preferred separation. For instance, one of the patients who separated from both her first and second husbands explained that she had separated from her first husband following the first repair and had a son with her second husband. The second repair that resulted in the closure of her vagina led her to experience separation from the second spouse. As she narrated:

> At this time I was separated with my first husband. After the last repair and check-up I got married again, got pregnant and had a baby. But my second husband left me due to the effects of the repairs; the repair led to the closure of my vagina. I cannot say how I got pregnant with this situation all I know is that God that said I must have a child. I have stayed with a close vagina for 12 years. Did the first surgery for opening it was not successful but I pray this one (second repair) will be good (**Case study VVF Patient 30 years Plateau 2020).**

From the above narratives, two things can be inferred. First, Plateau State appear to have more VVF patients who experienced divorce than Ebonyi State. This implies that couples with VVF conditions in Plateau State have a different social environment when compared to those in Ebonyi State. Second, the findings suggests that most men valued a woman's damaged organ more highly in marital relationship than the social relationship they may have established as couples regardless of how they treated their wives before the incidence of VVF. As a result, divorce or separation is unavoidable.

iv. Sexual denial

Another issue related to the social consequences of the health condition is sexual denial. One of the patients in Ebonyi State explained that even when she was well-dressed and no one was noticing her state of health condition, she would still occasionally refuse to engage in sexual activity with her spouse out of shame or a fear that her husband may be feeling uncomfortable with her during intercourse. As she stated:

> Never, I dress well, nobody will notice my health challenge, it does not affect my job, and the only thing is that, I don't go to unnecessary occasions or places. And I sometimes deny my husband sexual intercourse due to shame or the feeling that he will be uncomfortable because I smell (**IDI VVF Patient 35d years Ebonyi 2020).**

Another respondent from Ebonyi State revealed how the condition had damaged her vagina, making it difficult for intercourse penetration due to infection and the burning sensation she had always had there. According to her: *VVF has affected my vaginal. It has become so tight due to the repair. It may be had to have sexual intercourse. I don't know if it VVF that causes infection. I always have this burning sensation. It has really not been easy* (**Case study VVF Patient 30 years Ebonyi 2020).**

These findings suggest that not only has the biological/physiological architecture of the affected women been affected, but also her social interaction with her spouse, considering the importance of sexual activity in marital relationships among couples. It is implied that it might lead to divorce or unexpected misunderstandings between couples.

b. Effects economic aspect of life

While the condition of VVF among the affected women is associated with a number of social, psychological, and physiological effects, there are also economic effects, including the high cost of treatment, loss of job, loss of livelihood and disempowerment, among other economic burdens.

i. High cost of treatment/increase in expenditure

The respondents noted the financial burden of treatment costs and the rise in household expenses as a result of the VVF. For instance, one of the respondents claimed that she spent more money on diapers and extra pampers as a result of uncontrollable urine. In her statement:

> I don't have much challenge, the only thing is that it made me to be spending much money on diapers, and each time I want to go out, I go out with extra adult pampers, to change myself anytime I observe heaviness of the urine in it; to avoid smell of urine. I and my husband are working, we are both civil servants, so we share burden of family issues (**IDI VVF Patient 43 years Ebonyi 2020).**

In another patient who said she spent more on soap, explained that: *Now I wash my cloths more often and it consumes lots of soap, due to cost of diapers I use more of torn cloths to cover leakage. I see myself as a burden to family* **(IDIVVF Patient 16 years Plateau 2020).** In describing her own financial hardships, this respondent claimed that her VVF condition had increased her daily expenses, particularly the cost of diapers, toiletries, change of clothes, and transportation to the hospital. She contended that because of the rise in these costs, among other things, the financial burden had been transferred to her father. As she averred: *It consumes money especially on diapers, toiletries, change of clothes, and transport fare to the hospital. All the burden is on my father who's just a farmer* (**IDIVVF Patient 18 years Plateau 2020).**

In the account of the economic burden that VVF imposed on another patient, it was mentioned that much money had been spent on the condition in pursuit of treatments, and that it had even become difficult for her to contact her family back home from the VVF center. As she stated:

> We have spent a lot these past years. It has not been easy especially in search of treatment. VVF is a big problem but we can only do what we can. As we are we have no phone to even communicate home, the little money we came with finished long time ago (**DIVVF Patient 22b years Plateau 2020).**

In the case of a patient who spent more money on soap, cream, and perfumes, it was noted that her medical problem had left her dependent on others because she needed help with expenses like transportation to the hospital, food, and wrappers. As she narrated:

> This problem requires lots of things like soap, cream, perfume etc. sometimes if I do not get soap I will keep the cloths and it will begin to smell. Transport fare, feeding, wrappers are challenges I face. I have no financial support from anyone. I am just a burden **(IDIVVF Patient 35 years Plateau 2020).**

The impact of a health problem, particularly on financial or economic responsibilities, is significant. This is partly a result of all the procedures required to manage the social and psychological components of the illness at the level of the household and the larger community, as well as the processes involved in the management of the condition in hospitals.

ii. Job loss/school drop-out

One of the effects of VVF among women has been linked to job loss or school drop-out. The consequences of losing her employment are also tremendous such that the affected woman is likely to become impoverished if poorly cared for by the family, especially when a job loss occurs and healthcare expenses rise. For instance, one of the VVF patients revealed that she had ceased raising chickens because of her illness and had paid her medical expenditures entirely with the proceeds. According to her: *It has affected it heavily, I stopped my poultry farming for long and I have used all the money, both gain and the capital for this sickness, I spend a lot of money in that hospital by changing catheter every two days*

and how to offset hospital bill (**IDI VVF Patient 35b years Ebonyi 2020).** In the explanation of another patient, she noted that she stopped going to school and participating in social activities as a result of the effects of VVF, and stated that she felt really bad about it. As she noted: *It has affected my schooling and other social activities, farming and I feel very bad because of this* (**IDIVVF Patient 18 years Plateau 2020).**

Another VVF patient, who added that she had stopped attending school and had ceased doing any domestic chores, including farm work, since she felt so bad about it, stated thus: *VVF has affected me very well. I have stopped my schooling and I do not cook at home anymore (I feel bad about it). And I have stopped farming with my parents.* (**IDIVVF Patient 20 years Plateau 2020).** In the experience of a 22-year-old female who left school owing to an early pregnancy and was unable to finish because of the development of VVF, it was claimed that: *I stopped school due to early pregnancy and could not continue after childbirth due to VVF. I cannot attend occasions and gathering* (**IDIVVF Patient 22 years Plateau 2020).**

On the sufferers, the effects of VVF appear to have a spiraling effect. If the affected person is still in school, it not only results in school drop-out or loss of employment as the case may be for those who engage in employment but also impacts their ability to perform household tasks. One of the patients who was interviewed, for instance, claimed that most of the tasks she was doing before the occurrence of VVF could no longer be done due to the condition of the VVF, and that it had also affected her marriage. As she explained: *I cannot do most if what I do before. Even if I do not as I used to do it before VVF. I have stopped work and it also affected my marriage; I am now taking care of my child alone. It is not easy o* **(IDIVVF Patient 25b years Plateau 2020).**

These findings imply that early pregnancy is not only a contributing factor in job loss and school dropout but also impact on female impoverishment and disempowerment.

iii. Loss of livelihoods

The loss of a livelihood has also been listed as one of the side effects of VVF. When one of the respondents was asked about her experience with VVF, she described how difficult it

had been for her to resume her sewing career because she was unable to bring urine to the workplace. In explaining loss of livelihoods, she stated that:

> Haa, things difficult for me ooo, ground no level oooh at all, since I got this problem, I have not gone to my sewing shop again, how can I carry urine to the shop, I stay at home, is my husband that always provide for the family, things are difficult for us this days, even my husband also complain that market it not as usual (**IDI VVF Patient 28 years Ebonyi 2020).**

Because the VVF patient could not be able to provide urine and may find it difficult to do business with an odour, it is possible that clients and consumers will seek for alternative service providers who can provide their services. This was typical of one of the respondents (a rice processor), who stated she was unable to continue operating her business because customers were unable to give her rice to prepare due to urine leaks. Again, because her mother needed to care for her, this had an effect on her social life as well as her mother's job and marriage. As the patient noted: *I cannot continue my business because people will not like to give me their rice to process because I leak, it has affected my marriage, social life and also my mother has stopped work in order to take care of me* **(IDIVVF Patient 22b years Plateau 2020).**

Another patient, a farmer and trader, described how her VVF condition had affected her farming and trading. She indicated that if she performed farm work, her leg would be affected, and given the amount of time she had spent in the VVF center, the farm job was immediately put on hold. Precisely, she said:

> It has affected my farming and trading; if I farm it affects my leg and look at the time I have spent here, it is farming season and I cannot do anything, my business is also suffering. When I was home I did not go about my business as normal. My income has reduced because of VVF. The thing de affect everybody, na me de sick but my children de suffer, money no go de this year like last year (**IDIVVF Patient 47 years Plateau 2020).**

Based on the various narratives of the respondents on their experiences on job loss, it suggests that their ability to fulfill their job responsibilities effectively will certainly be impacted by their current state of health and the time it must have taken them to take to seek medical help at all different treatment levels. Additionally, if they do not have an apprentice

or coworker to assign their responsibilities to when they return from treatment, the outcome could be job loss.

iv. Disempowerment

It may not be out of place to say that any lingering health problem will lead to the sufferer's disempowerment, on the physical, social, and economic levels. One of the respondents' narratives on being disempowered revealed that the illness had impacted negatively on her trading that she had already stopped doing it. She further stated that the responsibilities she was sharing with her husband before she developed the VVF has been shifted to husband alone, which is likely to affect her marriage in the long-run. As she explained:

> This sickness has affected my trading so much, I have already stopped, I have not opened my shop since I got deliver. I sell small petty food stuff, it has stopped, is only my husband that provides for the family now, that we buy salt or Maggi for soup, is now a responsibility of my husband. That is what am telling you, I have stopped my trading, market has closed, is only my husband that provides for me and all my children, we have 3 children with this small one am carrying (**IDI/VVF patient/34 years Old/Ebonyi/2020**).

In the explanation of another VVF patient who hardly concentrated on her business going from one place to the other in search of the solution to the problem, it was mentioned that: *Since I had this problem, I hardly concentrate on my business, going from one hospital to another, from one prayer house to another; it has deeply affected my daily work activities* (**IDI VVF Patient 34d years Ebonyi 2020).**

Similarly, a VVF patient from Ebonyi State noted that due to the difficulty she encountered, she has stopped her farm work. In her explanation:

> I use to farm but since I had this problem it has bring my work and farm produce backward, I no longer have much strength to do farm work again, following the depression and anxiety my husband left for me, because I know staying with my father with two of my children is not a joke. So this sickness has affected me so much, I don't use to farm again, is my father that help me financially now, he feeds me and my children (**IDI VVF Patient 35 years Ebonyi 2020).**

In the case of another woman who has stopped her business, it was stated that:

> I stopped the little business I was doing due to VVF. People stopped coming to me to dress their hair due to smell. The situation of VVF is worse during the rainy season so I remain indoors. It has affected my chances of getting married. In 2019 I met a man who wanted to marry me but people began to talk to him about my situation before I told and he left me and married another woman (**Case study VVF Patient 30 years Ebonyi 2020).**

In the explanation of another patient who narrated her disempowerment based on the condition of VVF, it was stated that it affected her daily routine job of farming where she earns her living. In her statement:

> From the beginning, I always fall sick, yet I will carry it to farm, no matter how severe the sickness will be, I will still carry it to do farm work, in the evening my husband will ask chemist man to mix medicine for me, until at a time, I thought to myself, "*na die*, *I dey die so*" is better I help myself, that is when I go to hospital and they diagnosed me of cancer, so this sickness has made me not to go to my farm work again. Is only what my children sent to me that, I use to buy something now, one is at Asaba, the other one Benin and the 3rd one is at Ore, they use to send money anytime I cried for help and my daughter who is living with me will go and withdraw the money and buy something for us (**IDI/VVF patient/55 years Old/Ebonyi/2020)**.

In the expression of how the condition has affected the economic activities of the patient, it was explained that the condition had made her to lock-up her shop while the husband remains the sole provider of everything she wanted. In the explanation of how it has affected her economic activities and the challenges it has posed to her, she noted that:

> It has affected me heavily, since I got this problem I have not opened my shop, I locked my shop, I have two apprentices but I ask them to lock the shop because they have not learn to sew cloth. My husband use to provide everything for the family, he goes to the market and buy food stuff for the family. My challenges now is that, my husband is the only person providing for us, even though, he knows that when am working I don't ask him for money, I buy our food stuff, weather he gives me money or not, but now, he is the only person doing it, all the financial burdens bestows on him alone until when am well and open my shop, I will support in providing for the family (**IDI/VVF patient/29 years Old/Ebonyi/2020)**.

The social and economic consequences are mutually inclusive, as can be inferred from the patient experiences and perspectives mentioned above regarding VVF. They are intertwined in the sense that one can not exist without impacting on the other. It also means that the

biological components of it are not entirely neglected because they play a significant role in both the social and economic effects of the VVF condition. These could be measured in terms of live birth or stillbirth some of the patients went through as well as dysfunctional organ called vagina. In view of these consequences, Figure 4.28 serves to highlight the interconnectedness of the social and economic effects of VVF among the patients, wherein divorce, separation from their spouses, and other forms of marital issues have an impact on the patients' overall empowerment.

The relationship between the socio-economic effects and the biological/physiological effects is further demonstrated in Figure 4.28. In that, it is explained that the VVF condition causes urine and possibly faeces or both to leak, resulting in either a live birth or a stillbirth. Again, it has the potential to produce an unpleasant odour while forcing those who experience it to stay indoors in order to avoid shame or stigmatisation from the members of the community. Due to the psychological effects of remaining indoors and alone, significant others like the husband may find it difficult to cope and decide to divorce, separate from, or reject the affected wife.

Furthermore, the nature of the condition, which justifies a high cost of treatment, starts to have an impact on the household's expenses and source of livelihood, especially for the sufferer of the illness. In fact, a patient's inability to function in a work environment will lead to job loss, while also increasing the expenses of health care and the cost of transportation to different locations for treatments. These show that in a case where the patients' lack of support and disempowerment will certainly impact negatively on her well-being. Given the interconnection of the effects of VVF, however, one can conclude that the physiological/psychological effects predisposed affected women to socio-economic consequences in their respective communities of residence, which require urgent attention from all stakeholders.

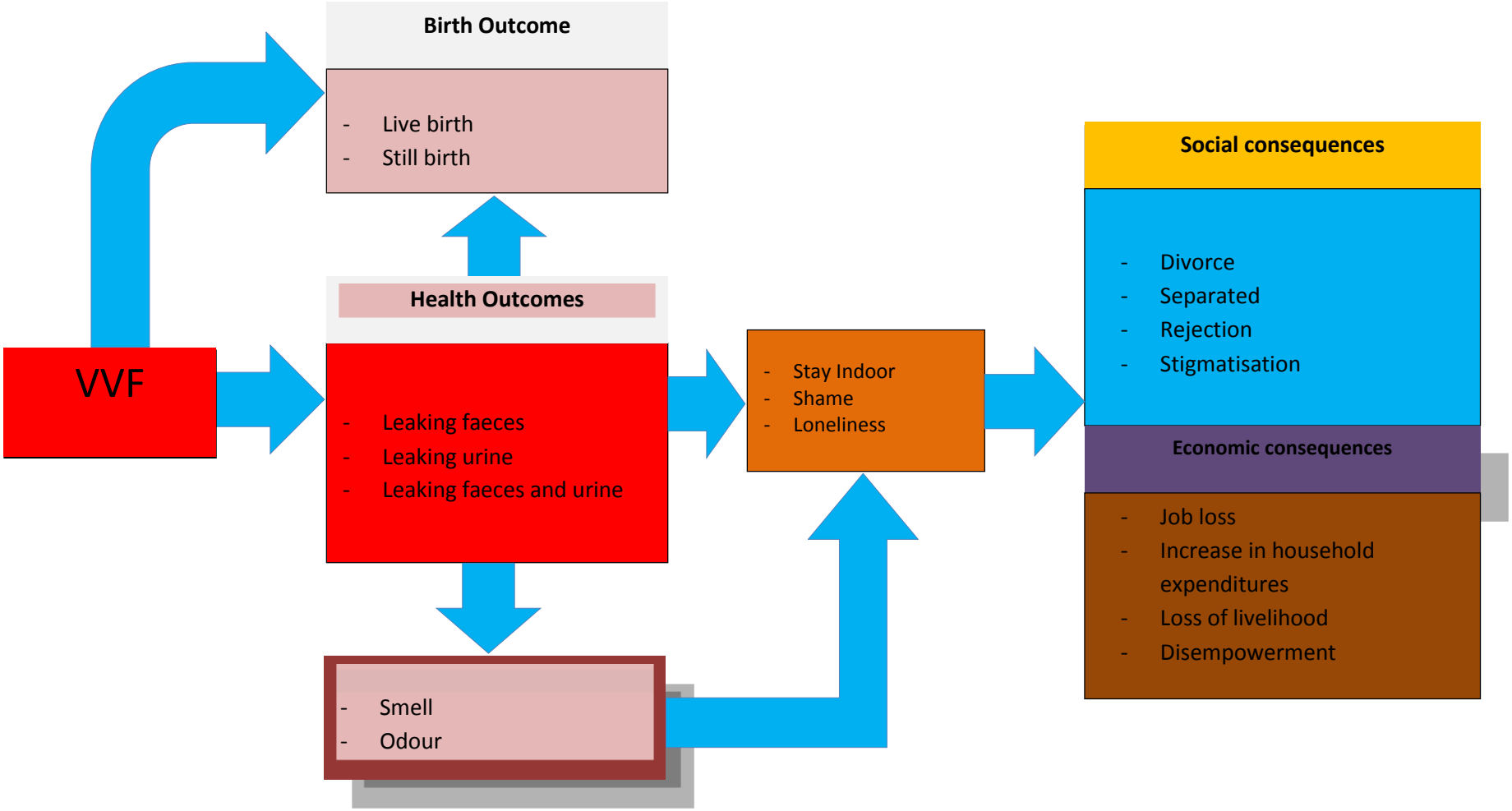


Figure 4.28: A Diagrammatic Illustration of the Intertwined Nature of Social and Economic Consequences of VVF

Source: Researcher (2020)

4.8 Discussion of Findings

In line with the socio-demographic characteristics of the respondents, findings indicated that the age of the respondents was 34.22±10.27 years in the overall with variations in the age of respondents from Ebonyi (36.60±10.80 years) Plateau State (32.15±9.33 years). This suggests that that the average age of respondents in Ebonyi State was higher than their counterparts in Plateau State though both of them were still found within the reproductive ages. Findings on their marital status revealed that the majority were married compared. It then means that a higher proportion of the respondents had adequate experience on the condition of VVF following its association with obstetrics and gynecological condition.

Findings also showed that the majority were from monogamous family type compared to those who were from polygamous family type. Despite a higher proportion of respondents from monogamous family type than those in polygamous family, findings revealed that those who were from polygamous family were higher in proportion in Ebonyi than those in Plateau State. In their highest level of education, findings revealed that two-fifth of the respondents had attained secondary school education compared to other categories of education. In comparing the two states, findings indicated that there were more respondents in Plateau State who had attained secondary school education than their counterparts in Ebonyi State as the highest proportion of those in such category. This suggest that there were disparities in the level educational attainment between the two states which may also inform the knowledge, perception and preventive measures about VVF in their respective state of residence.

In their religious affiliations, the majority were Christians in the overall as well as in the two states. Findings also indicated nearly all the respondents in Ebonyi State were adherents of Christianity compared to those in Plateau State. Although the majority in Plateau State were Christians, there were more Muslims in Plateau State compared to those in Ebonyi State. This confirms the fact that there were more adherents of Muslims in northern part of Nigeria to which Plateau State is situated than those in the southern part of the country who are predominantly Christians. Findings on their occupational distribution revealed that the highest proportion of the respondents engaged in trading in the overall. However, there were

more traders in Ebonyi State than those in Plateau State largely due to the preoccupation of those in the south-eastern part of the country being associated with merchandising as compared to those in Plateau State whose preoccupation is mainly in agrarian economy.

Finding on their level of income revealed that the majority earned less than N18000 as monthly income. This implies high level of poverty among women in both states. In the age at marriage, findings indicated that the mean age at marriage across the two states were similar and usually fall within 22 years. This suggests that early marriage is common to both states. Findings on the number of children ever-born by the respondents revealed that 1 in 10 respondents' ever-born 3 children being the highest proportion. However, there were differences in the highest proportions of the number of children ever-born by states. While the highest proportion was found with those who had 6+ children in Ebonyi State, the highest proportion was found among those with 3 children in Plateau State.

Findings on the age at first birth among the respondents revealed that more than two-fifth of the respondents had their first birth between the ages of 20 and 24 years in Ebonyi and Plateau State. In their last place of delivery, it was found that more than two-fifth of the respondents delivered their babies at the Primary Health Care (PHC) centres, while variations in the last place of delivery was observed in Ebonyi and Plateau State whose highest proportion of the last place of delivery was found in Private Clinics. This finding indicates that even though the majority had their last place of delivery using the PHCs in the overall, there is disparities by state of residence where the use of Private Clinics was predominantly found among women in Plateau State compared to those in Ebonyi State.

Findings also revealed that the majority of their spouses were 45+ years old. This implies that the majority of the husbands were older than their wives. In the educational attainment of their spouses, a higher proportion of the respondents had attained secondary school education in the overall. In the analysis by state of residence, it was found that the proportion of those whose husbands have attained tertiary education were higher in Plateau State than those in Ebonyi State. Similarly, a higher proportion of their spouses earned between N18000 – N49999 when compared to those with N50000 and above. These results suggest

that there were more husbands with higher level of education than wives as well as earning higher monthly income than their wives.

In discussing the findings on the determinants of VVF, earlier reports from the Nigeria Demographic and Health Survey (2013) have shown that women in Ebonyi (72%) and Plateau (63%) States delivered their children at home which portend grave danger in emergency situations such as obstructed labour which is a major source of VVF. This study has also found that one in every ten women delivered their infants at home in Plateau State (10.1%), and 2.2% of the respondents indicating that their women usually give birth at home in Ebonyi State. However, based on the hospital records and data generated from the patients of VVF, a large proportions delivered their infants at the hospitals. From the prompts in the qualitative findings, it was found that although the majority of VVF patients delivered their babies at the hospitals, there were usually delays to taking action for hospital delivery simply because it is either some prefer home delivery to hospital delivery or some do not have the resources for hospital delivery in terms of money and the difficulties at accessing hospital option due to long distance to the hospitals.

And due to delay and difficulties encountered at home delivery, most VVF patients resorted to hospital delivery after prolonged labour or obstructed labour. The delays at delivery encountered by patients that eventually led to VVF coincide with the early work done by Harrison (1985) who identified three delays that eventually lead to VVF: delay indecision making on whether or not to patronize obstetric care, delay from place of residence to health facility and delay in getting medical attention by health givers. In this study, most of the delays found were associated with indecision on the part of patients and their significant others as well as delay from place of residence to health facilities and not usually associated with getting medical attention by health workers.

Previous studies have associated the cause of VVF to indirect and direct factors such as poverty, illiteracy, early marriage, FGM and status of African women among others (Umeora and Emma-Echiegu, 2015' WHO, 2020; Meh, Thind, Ryan, Terry 2020; 2019; WHO, 2019; Yaya, Odusina and Bishwajit, 2019). This study have implicated that most of the VVF cases associated with obstetric issues, congenital, long labour, iatrogenic and

hysterectomy were as a result of poverty, ignorance, early marriage and FGM. These risk factors predisposed many women to the development of VVF as they trigger the biological factors. This supports Browning, Allsworth and Wall (2010) that 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 quack doctors at the onset of delivery. Indeed, most of the obstructions in childbirth are usually associated with under-age pregnancy and early marriage, and these aggravate the condition of labour that eventually lead to VVF.

Several intermediate determinants of VVF have been identified by researchers to be associated with the determinants of VVF. For example, the state of health of individual women, reproductive status of women, access and utilisation of health care resources have been persistently identified to be connected to VVF condition (Muleta, Rasmussen and Kiserud, 2010; Wall, 2011; Balarajan *et al*, 2011; Efe, 2013; Aryal, and Shrestha, 2020). From the qualitative findings, it was observed that the status of women including the reproductive status of the VVF patients such as poverty and under-age marriage increased the likelihood of the risk of VVF compared to those who were of higher socio-economic status as well as those with reasonable reproductive status. These findings suggest that there were physiological and clinical factors associated with the condition of VVF; at the same time, there were also proximate determinants such as lower socio-economic status, cultural factors (FGM) and the practice of under-age marriage that influence the biological factors to cause the condition of VVF among patients. This finding is related to the work of Andargie and Debu (2017), who found that the socio-demographic factors of respondents combined to influence obstetrics complications to predispose women to VVF.

Findings on the determinants of VVF indicated that infection, painful mensuration, insertion of herbal or corrosive substances to the vagina among others contributed to the etiology of VVF as suggested by the health professionals. In contrary to some VVF patients, it was believed that most of the VVF condition is either caused by TBAs and quack doctors, evil spirit or the use of cesarean section rather than the insertion of herbal substance. These findings support Onyugo *et al.* (2019) that only few patients agree that some congenital and obstetric factors can lead to VVF. This also means that hospitals as the place of delivery for

most VVF patients served as the last resort because many of the patients whose VVF condition developed as a result of pregnancy complicated issues did not attend antenatal care services where there were professional health care providers. Hence, inadequate care during antenatal visits or absence of antenatal care resulted in pregnancy complications, which in turn, caused the condition of VVF. This finding corroborates Roberton *et al.* (2020) study who found that there is a reduction in antenatal visits estimate in low income and middle income countries; as well as and Raji, Hassa, Yusuf, *et al.* (2018) research who noted that most of the patients of VVF did not receive any form of antenatal care prior to their delivery.

Further findings on the determinants of VVF revealed that the level of education of patients were associated with antenatal care as well as their predisposition to the condition of VVF. Meanwhile, the majority of the VVF patients had either not completed secondary school education or had only completed their secondary education, which are low relative to the knowledge and preventive measures for VVF. This means that the low level of antenatal visits can be ascribed to the fact that the majority of the VVF patients only had secondary education as the highest level of educational attainment, which may not be enough to expose them to the knowledge and preventive measures of VVF and other pregnancy complication issues. This finding supports the high likelihood of morbidity as suggested by Harrison *et al* (1985) that high mortality rates including low birth weight and prenatal deaths were recorded among mothers due to lack of antenatal and prenatal care among women who had poor or no formal education.

Conversely, studies have revealed that the general level of awareness of VVF is connected to the adequacy in sensitisation programs tailored towards reaching women at risk (Morhason-Bello *et al.*, 2020). This study found that the majority of the respondents, especially at the community level had the knowledge of VVF in both states. However, finding revealed that there were variation in the level of knowledge by states. It was found that respondents from Plateau State were less likely to have the knowledge of VVF than those in Ebonyi State. This suggests that despite the improvement in the level of awareness as indicated in 2018 NDHS report between 2008 and 2018, this did not cut across all states

at the same pace. It also means that the level of awareness of VVF does not automatically translate to adequate knowledge.

In addition to the variation in the knowledge level of VVF by state of residence, finding indicated that there was significant association between age of the respondents and their state of residence. For instance, hose whose ages were between 20 – 24 years and 30 – 34 years were less likely to have the knowledge of VVF than those whose ages were between 15 – 19 years respectively. This suggests that the higher the age of women the less likely they have the knowledge of VVF. This translates to the fact that the condition of VVF mostly affect those with younger age compared to those in the older age.

Further findings revealed that there was no statistically significant association between marital status and the knowledge of VVF including those who were adherents of Islam, but finding showed that those who were free thinkers were more likely to have the knowledge of VVF than those who were Christians. This suggests that there were perceived beliefs from both Christians and Muslims that there could be likelihood of the condition being connected to spiritual matter or punishment from God before it could affect an individual woman compared to those who were free thinkers, which strongly believed that the condition could be caused by physiological state of a woman.

Among other socio-demographic characteristics, income level has been found to be associated with the knowledge of VVF at the community level, especially among those who earned between N50000 – N99999. This is by implication suggesting that the higher the income of individual, the higher the likelihood of being able to have the knowledge of VVF than those who earned lower level of income. What does this mean? It means that those who earned higher level of income are more likely to have access to the sources of information about the awareness and knowledge of VVF than those with lower income level who may not have the resources to access various sources of information about VVF. Findings on the level of education indicated that there was negative association between spousal educational level and the knowledge of VVF. This implies that the level of education of women would be more important to expose them to the knowledge of VVF than their spouses. This supports Ravinder and Sreekanth's (2020) study that maternal education plays important

role in antenatal care services compare to that of their spouses who do not attend any antenatal care services.

On the other hand, studies have shown that peoples' perception about VVF condition affect its preventive measures and treatment pathways (Kasamba, Kaye, and Mbalinda, 2013; Emma-Echiegu, Okoye, and Odey, 2014). In this study, it was found that about 1 in 10 women perceived the VVF patients negatively, and that those in Plateau State were six times more likely to perceive VVF patients negatively than those in Ebonyi State. Findings also revealed that there were significant relationship between family type, highest level of education attained, occupation, monthly income, age at marriage and community perception about VVF patients. Also, there were significantly relationship between the number of children ever-born, age at first birth, last place of delivery, men's educational level, men's monthly income and community perception about VVF patients. These results supports Morhason-Bello, Kareem, Abdus-salam, Bello *et al.*, (2020); Kasamba, Kaye and Mbalinda (2013) earlier studies that there were significant relationship between socio-demographic characteristics of respondents and community perception about VVF including preventive measures of the condition.

On the community perception on preventive measures, findings revealed that although the majority preferred modern method of preventive/treatment measures to traditional method, many of the VVF patients preferred to use traditional therapy, especially at the onset of the condition depending on its severity. This finding concurs with Umoiyoho and Iyang-Etoh (2012) that people perceived the use of herbal products and the help of traditional healers including hospital treatment than for the treatment of VVF compared to the few who perceived that it has no cure. The rationales for the perception of people generally on the preventive measures or treatment options, are shaped by whether they perceive the condition positively or negatively. While those who perceive it negatively called the affected women with different names as they also stigmatize them, some feel dejected and pessimistic about the condition.

On the community perception on the causes of VVF, some of the findings from the qualitative findings revealed that the causes of VVF were associated with evil spirit and

punishment for their sins. This suggests that the community perception towards evil spirit and sin against God go a long way in affecting the attitudes of community members towards VVF patients. This finding further explains and supports Raji and colleagues' (2018) previous research that more than half of the study population in a fistula repair facility in the Northwest Nigeria attributed the cause of VVF to evil spirit while one-third of them believed that was as a result of God's punishment to develop VVF. In other words, those who perceived the patients negatively are more likely to blame them for their condition rather than see it beyond spiritual causes compared to those who perceive it as biological and cultural causes.

On the prevalence of VVF among the study population, findings showed that there were differences in the prevalence of VVF between the two states of the study. While the prevalence rate was 23.7 per 100,000 women in Plateau State, it was found that it was 12.2 per 100,000 women in Ebonyi State. This finding suggests that there were more women who suffered from the disease in Plateau State than in Ebonyi State. This finding further confirms the report of the Federal Ministry of Health (2016) and Muhammed (2018) that VVF in Northern Nigeria has accounted for an estimate of between 60 and 70 per cent of the total percentage of women who suffered from the disease in Nigeria as compared to their counterparts in the Southern part of Nigeria who shared between 40 and 30 per cent prevalence rates.

In addition to this, it was implicated that there were significant relationships between age of the patients, family type, level of education, religion, occupations, parity, the age at delivery and the prevalence rate of VVF. These findings to a large extent relate to the earlier study conducted by Ugochi, Iwuala, Nwufo, Ibe, Udujih and Udujih (2019) who found that there were statistically significant relationships between women's level of education, occupation, area of residence in a state, number of deliveries, place of deliveries, who attended to the delivery among others and the predisposing factors of women to VVF in an epidemiologic population. This also means that the significant association between the socio-demographic characteristics of the respondents can be linked to Onyeugo *et al.* (2019) and USAID (2015) reports that suggested factors like level of education, age at marriage,

economic status of women, access to proper health care and proper decision making influence the prevalence and incidences of VVF positively.

In discussing the treatment pathways patients practiced, earlier studies on maternal health have implicated that treatment of illnesses usually starts with simple home remedies with the notion that the illness will go away, after which the patient may decide to utilize the services of traditional or modern medicine (Jegede, 2002). This study found that most VVF patients started their treatment pathways with home remedies, prayer house (church), herbalists, the use of TBAs before visiting modern healthcare facilities and VVF Centres based on referrals. Based on the findings from this study, the following are the treatment pathways identified by the patients:

a. Home remedies – hospitals – VVF Centre;
b. Traditional herbs – hospitals or no hospitals – VVF Centre;
c. Prayer house – hospitals – VVF Centre;
d. Primary Health Centre – traditional medicine – VVF Centre;
e. Private hospitals – VVF Centre;
f. Government hospitals – VVF Centre;
g. Direct to VVF Centre;
h. Back and forth treatment pathways.

Following the above pathways to treatment, it means that most VVF patients resorted to complex patterns of pathways, which aligned to Dempsey, Sripad, Sultana, Kirk *et al.* (2021) study that in some cases the formal health care systems are bypassed by women who sought healthcare for pre-eclampsia and eclampsia in Bangladesh. It was also discovered that there were combinations of both supernatural healing, traditional and modern medicine for the treatment of the condition. This is found in consonance with Gordon's (2016) work who noted that there are many patients of some diseases who chose a particular healing service (traditional medicine) and later switched to another (modern medicine), particularly in Africa countries. For those who have combined both the traditional and orthodox health care as treatment regimen, it has confirmed the work of Owumi, Raji and Aliyu (2013) that

it has become a common practice that sufferer of certain illness practice combine regimen of traditional and orthodox health care system.

Other studies have identified the perception about the causes of illness (e.g. eclampsia) to influence the treatment pathways (Sibley, and Amare, 2017). This study has also found that the perception of patients and the significant others (such as their husbands and relatives) about the causes of the health condition (VVF) influenced their pathways. For example, those who perceived the cause to be associated with evil spirit usually seek first help from the prayer house or the use of traditional methods believing that the traditional methods have spiritual backing (e.g. from the TBAs centres) to heal their condition. It was after that most patients sought medical help from the hospitals and later to the VVF centre or even sought the help from both traditional and modern methods. This finding further supports the work of Okafor, Sekoni, Ezeiru and Inam (2014) that some women utilize only traditional method, while others mix both methods simultaneously.

Findings have also indicated the various factors that influenced the different pathways to VVF treatment before finally referred to the VVF centre. These factors include doctors' referrals, patients knowledge of VVF centre through media publicity and outreaches and information from the family members and significant others. Again, findings have implicated the perceptions of the patient partners and 'significant others' regarding the cause of illness and the belief that the condition was as a result of supernatural cause. The implications of these factors are that patients changed from one remedy to the other depending on the severity and the degree of the influence of the significant others even engaged in back-and-forth patterns of treatment. This finding further affirms Frederick and Stephen (2007) work, who asserted that change in treatment of illness within health systems is gradual and involves a back-and-forth movement of patients across the health systems available to them.

Findings on the care and support for VVF revealed that the majority of VVF patients received care and support from their immediate family members. It was also found that patients from Ebonyi State were more likely to receive family supports than those in Plateau State. The specific family members who provided patients with supports included husbands,

parents and other relatives of the patients. This finding corroborates Adeusi, Olujide and Ebere (2014) study that husbands, friends and extended family gave adequate care and support to the VVF patient thereby helping the patients in coping well in her situation. While many of the patients received care and supports from their relatives in general terms, other did not receive such care and support from their significant others thereby resulting into frustration and dejection. This is found in consonant with the work of Okoye, Emman-Echiegu and Tanyi (2014) that some VVF patients suffered lack of care and support from husbands, husbands and friends among others.

As suggested by Nsemo (2014), there were several reasons leading to victims being abandoned by their husbands. One of the reasons is that patients were usually inactive sexually when engaged in sexual activities with their spouses largely due to the stench, uncontrollable leakage of urine and occasional leakage even after surgical repair. They also expressed difficulty in coping because the required support was lacking as a result of being depressed and many resigned to fate relying on charity and begging. In this study, it was also found that many patients experienced difficulties at engaging in asexual activities with their spouses due to pains and stench from their vagina. This may have caused many of the husbands feeling withdrawn, while abandoning their affected wives with VVF.

Furthermore, findings revealed that there were significant relationship between socio-demographic characteristics of the VVF patients and care and support received from the significant others by the patients. Specifically, findings have indicated that there were significant relationship between age, religion, educational attainment, marital status, parity and family support. This means that the socio-demographic characteristics of the patients strongly determine the type of social bond existing between the patients, the spouse and other members of the family. Nevertheless, it is expected that there should be higher social bond between the patients and their spouses than those who were parents and relatives of the patients.

Findings have shown that there were factors influencing care and support for VVF patients. These factors ranged from the community perception on VVF patients (whether positive or negative) to number of repairs for VVF patients, marital status, the cause of VVF (whether

biological or spiritual), level of husbands' affection towards wife and husband's decision. While the care and support for VVF patients was mostly influenced by marital status and level of spousal affection among patients in Ebonyi State, the number of VVF repairs as well as husband and relatives decisions mostly influenced the care and support for VVF patients in Plateau State. This suggests that that there were variations in the care and supports received from husbands and relatives by the VVF patients even during the course of treatment by the state of residence.

Due to persistent leakage of urine through the vaginal, studies have pointed out that VVF has both physical, social, economic and psychological consequences on the sufferer (Raji *et al.*, 2018; Mselle, and Kohi 2015; Okoye, Emma-Echiegu, and Tanyi, 2014; Ijaiya *et al*, 2010; Muleta *et al.*, 2008). Findings from this study revealed that the majority of the sufferer experienced uncontrollable menses since delivery, at the same time leading to stillbirths. This is because, the uncontrollable menses has been medically proven that it could be dangerous to the formation of and development of the fetus (Cowgill, Bishop, Norgaard, Rubens, and Gravett, 2015). In view of this, stillbirths were most common among VVF patients as one of the physical consequences. Despite this, those who were from Ebonyi State were more likely to experience such menses since delivery than those in Plateau State. This birth outcome found among VVF patients is consistent with McCurdie, Moffatt and Jones (2018) who found high proportion of stillbirths among VVF patients in Uganda. This suggests that there is a possibility of smell accompanying the leakage and this subject patients to unhappiness and devaluation as pointed out by Mselle and Kohi (2015).

Indeed, findings has established that the foul odour emanating from uncontrollable urine and seldom faeces brought about loneliness, stigmatisation, shame, divorce and rejection. This can be said to be the consequence of physical effects of the health condition spiraling to social consequences due to the irritation resulting from the smell and odour from the patients. This finding support Raji *et al.* (2018) and Ijaiya *et al.* (2010) that about third of patients in a fistula facility in northwest Nigeria reported being rejected by the community and that women affected with fistula face series of social effects which include divorce and separation. Raji *et al.* (2018) further explained that many of the affected patients do not meet up with their sexual obligations to their spouses and in some cases do not bear children

because of fistula, as such they are bound to suffer divorce and separation from their husbands. As pointed out by Nsemo (2014), there were several reasons leading to patients being abandoned as they suffer lack of care and support from their spouses due to an inactive sexual life between the duo or as a result of stench, uncontrollable leakage of urine and occasional leakage even after surgical repair. This means that there is a connection between the physical and social consequences of VVF condition.

Nsemo (2014) and Odu (2013) noted that VVF patients are likely to enter into worse poverty levels and begin to beg for funds in order to get their needs such as soap, wrappers, and diaper. This study also found that it has economic consequences where the sufferers lose their jobs and faced with cessation of business activities. Indeed, it resulted in outright disempowerment of the patients which may affect the support and care of the patients. This finding is associated with Mselle and Kohi (2015) that most patients become more dependent on others for survival and loose some level of freedom as a result of job loss and disempowerment.

In view of the physical, social and economic effects of VVF on the patients, there is a spiral effect of the condition on their psychological well-being. As a matter of fact, the effects of the stench did not only result in rejection, divorce and separation, but also bring about personal feeling of rejection, self-pity, depression, low self-esteem and isolation among other psychological effects. This finding aligns with Ijaiya *et al.* (2010) that many of the VVF patients entertain fear on what the future holds which lead to depression and low esteem. These suggest that the consequences of VVF on the patients are intertwined largely because the physical effects impact on the social and economic effects, which certainly portend to psychological effects. In order to reduce the spiral effects of VVF on the patients, there is a need for proper care and support from their spouses, relatives and other significant others, while other practices that may lead to its occurrence in the society are prevented.

4.9 Findings and Theory

The ecological model of health adopted for the study assumed that the etiology of any disease or health condition is associated with the direct effects of the environment on behavior (Barker, 1968). It also emphasizes that every individual interacts with both social,

physical (environment) and economic environment to influence or determine health behavior or health condition at different levels. For example, at the interpersonal level, there can be influence of the biological and psychological (e.g. the knowledge, attitude and beliefs) on health behaviour as well as the community level the relationships of individuals with the social environment through cultural practices, family, work groups and friends to influence health outcome either through tradition or policy (Glanz, Rimer, and Lewis, 2000). In this study however, it has been found that the patients of VVF interacts with the cultural environment through their attitudes towards childbirth, support for some cultural beliefs and practices (e.g. FGM, underage marriage, etc.), the care and support received from the 'significant others' and the treatment pathways they adopted to influence the etiology of VVF and their treatment pathways, which has affected their health conditions positively or negatively. This finding further supports Salis and Owen (2000) in their contribution to ecological model that the interactions across the various levels of influences in the environment bring feedbacks to the health of individuals.

Corroborating the viewpoints of the proponents of ecological model of health, the proximate determinant framework by John McCarthy (1997) included the socio-economic settings of individuals as indirect determinants of health such that they operate with the biological, social, cultural, economic and environmental factors to contribute to mortality and morbidity in a population. In the similar vein, there are intermediate factors such as the health status of women, their reproductive life and access to obstetric care that affect their health conditions. In this study, it has also been found that the socio-economic status of women (via educational level), age at first birth, age at marriage, the practice of female genital cutting and delay to take action in childbirth or delivery affect the condition of VVF. This means that the sufferers/patients of VVF were not only influenced by their interactions with the social and physical environment to determine the causes and treatment pathways for their health condition, but the proximate determinants such as the age of the patients, the socio-economic determinants and the interplay of the cultural and health facilities available at their disposal predisposed them to the condition and the pathways to treatments.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

This study focused mainly on the social context of Vesicovagina Fistula (VVF) as an uncontrollable leakage of urine through the vagina. Among other things, it examined the determinants of the health condition, community perception about the condition, prevalence, treatment pathways, factors influencing its care and support among patients and the socio-economic consequences of the health condition in Ebonyi and Plateau States, Nigeria. While several studies have been reviewed and documented on its social context, the ecological model of health and proximate determinant framework were adopted as the framework.

In order to achieve the stated objectives of the study, a comparative cross-sectional survey design was adopted. The study was both community-based and hospital-based which employed quantitative and qualitative approach. The community-based study sampled respondents from Ebonyi and Plateau States based on the availability of well-established VVF Centres for patient referrals, a total of 695 respondents was selected using Cochran's (1977) sample size determination formula.

In the quantitative aspect of the study, a semi-structured questionnaire was used to elicit information on community perception and socio-economic consequences of VVF in Ebonyi (324) and Plateau (371) States respectively, while hospital records were used to elicit information on the prevalence and determinants of VVF in Ebonyi (136) and Plateau (381) States. For the qualitative approach, eight key informant interviews were conducted with four doctors and four nurses. Also, forty in-depth interviews (20 from each state); and eight case studies were conducted with VVF patients to elicit information on treatment pathways, care and support for VVF patients. Quantitative data were analysed using descriptive

statistics (frequency distribution tables and the mean), Chi-square (cross-tabulation), Logistic Regression at $p \leq 0.05$. The qualitative data were content-analysed based on the themes generated from the interviews conducted with all participants.

Based on the findings from the study, the overall age of the respondents was 34.22±10.27 years with the mean age of 36.60±10.80 years for those in Ebonyi and 32.15±9.33 years for those in Plateau. The majority was found to have been married and monogamous family. Finding indicated that two-fifth of the respondents attained only secondary school education with the least having no formal education. The majority were Christians in the overall with nearly all the respondents in Ebonyi State were adherents of Christianity as compared to those in Plateau State, while there were more Muslims in Plateau State than those in Ebonyi State.

Summarising the findings on the determinants of VVF, it was found from the medical records that the majority of VVF patients in both states attributed their health condition to obstetric issues. Others also stated that congenital, prolong labour, iatrogenic, hysterectomy and trauma were associated with the bio-medical causes of VVF. Findings also revealed that delivery of VVF patients through Caesarean Section (C/S) in Ebonyi and Plateau states resulted in the health condition. It was also found that despite the majority of patients had their delivery at the hospitals, other places of deliveries such as home and TBAsi were reported in both states. The reasons given for home and TBAs' home deliveries were ranged from preferences for TBAs, distance to modern healthcare facilities and lack of money for the patronage of modern healthcare facilities. Other identified determinants of VVF from the qualitative findings were under-age marriage/early marriage, home delivery, poverty, ignorance, obstructed/prolonged labour, female genital mutilation (FGM), hysterectomy, fibroid surgery, evil spirit/God's punishment and painful mensuration.

On the knowledge of VVF at the community level, it was discovered that the majority of the respondents had the knowledge of VVF, but those in Plateau State were more likely to have the knowledge of VVF than those in Ebonyi State. Findings also indicated that the age, income, religion, education, number of children ever-born and age at first birth were significantly associated with the knowledge of VVF. On the community perception on VVF,

it was discovered that those who were in Plateau State were 6 times more likely to perceive VVF patients negatively than those in Ebonyi State, whereas those who had 4 children were less likely to perceive VVF patients negatively than those who had one child. On the perceived treatment options, it was found that the majority preferred the general hospital to other treatment options in both states. The VVF patients' perceptions towards self were both positive and negative. While some were optimistic of their condition, others were pessimistic.

On the prevalence of VVF, it was discovered that the prevalence rate were 12.22 (Ebonyi) and 23.70 (Plateau) per 100,000 women. It was also found that age of VVF patients, states of residence, family type, education, parity and age at delivery were significantly associated with the prevalence of VVF. Three out of every 20 women knew those who have been affected with VVF in their communities in the overall. The prevalence by the patients' state of origins revealed that it ranged from 14.7% to 8.8% in Gombe, Ebonyi, Plateau, Cross River, Enugu and Delta states.

On the treatment Pathways adopted by the VVF patients, it was discovered that there were eight (8) identified treatment pathways, namely; (i) home remedies, hospitals and VVF Centre; (ii) traditional herbs, hospitals or no hospitals and VVF Centre; (iii) prayer house, hospitals and VVF Centre; (iv) Primary Health Centre, traditional medicine and VVF Centre; (v) Private hospitals and VVF Centre; (vi) government hospitals and VVF Centre; (vii) direct to VVF Centre; (viii) back and forth treatment pathways. Factors influencing the treatment pathways among VVF patients included doctors' referrals to VVF centres, knowledge gathered on the treatment of VVF from the radio, campaigns and outreaches; as well as family members or significant others' referrals.

In summarising factors influencing care and support for VVF patients, it was found that nearly all the VVF patients indicated that they received family supports for their well-being and quick recovery. However, VVF patients from Ebonyi State were more likely to receive family supports than those in Plateau State. Those who provided family supports in Ebonyi State were husbands, followed by parents and other relatives. In Plateau State, more than half of the VVF patients pointed out that other relatives provided the support. Care and

support for VVF patients were statistically significantly related to age of VVF patients, religion, educational attainment, marital status and parity. Factors influencing care and support for VVF patients included community perception on VVF patients, number of repairs for VVF patients, marital status, causes of VVF and level of husbands' affection towards wife and husband's decision.

On the socio-economic consequences of VVF, it was found that the majority experienced uncontrollable menses since delivery with those in Ebonyi State more likely to experience such than those in Plateau State. Uncontrollable leaking of urine from the vaginal since the delivery among VVF patients was found. There were social effects of VVF which ranged from stigmatisation to isolation, divorce/separation and denial of spouse sexual intercourse. The resultant effects of the physiological imbalance of VVF patients served as the consequences of the social effects. Findings have also implicated the economic burdens resulting from the high cost of treatment and increase in household expenditure as the economic effects. Job loss, loss of livelihood and disempowerment of patients were associated with VVF condition.

5.2 Conclusion

Through empirical data, the study has shown the determinants, prevalence, and treatment pathways of vesicovaginal fistula in Ebonyi and Plateau States. It revealed peculiarities of social issues relating to VVF based on cultural differences in terms of determinants, prevalence and treatment pathways. Treatment pathway chosen by patients still largely follows the traditional method which is mostly influenced by the decision for place of delivery. Visit to VVF centers for repair was dependent on failure of previous treatment plan hence referral. Although a back-and-forth movement across treatment options was the case with many patients.

5.3 Recommendations

- Considerations should be given to cultural diversities when national maternal health policies are to be formulated and implemented for the prevention of VVF in Nigeria.

- There is need for more sensitisation on the treatment of VVF to families and communities at large while emphasising that treatment of VVF is free at the various VVF centres in order to allay the fear of high cost of treatments fo VVF.
- Increase in status of women should be encouraged since higher status of women will not only prevent VVF but also inform positive treatment pathways for those who become patients and enhance their coping mechanism.
- Patients and women of childbearing age should be educated on the need for prompt treatment of VVF as it leads to a more positive care and support system, while reducing the level of stigmatisation at the household and community level.
- Teachings and discussions as it relate to VVF should be introduced during antenatal visits in health centers (PHC, private, general and teaching hospitals). This will increase the knowledge of VVF, and consequently influence reduction of VVF rates in the country.
- Traditional Birth Attendants (TBAs) should be sensitised on the risk factors of VVF at community level on how to identify VVF symptoms and when to make referrals to avoid high incidences of VVF in the country.

5.4 Contributions to Knowledge

- This study has contributed to the growing knowledge on maternal health in Nigeria with added data.
- It has documented social situations of VVF in two states with different cultural orientations hence, showing peculiar issues influencing VVF as it relates to the study sites.
- This study has made contributions to knowledge by revealing the various treatment pathways adopted by VVF patients, which previos studies did not explore.
- This study has uncovered factors influencing patient's treatment pathways and their care and support in respect to spousal care, community care and medical care.
- This study has shown that different states need different maternal health policies especially with issues pertaining to early marriage, which serves a critical social factor determining the occurrence of VVF.

- It has contributed enormously to knowledge by expanding the application of Proximate Determinants Framework by John McCarthy (1997) to explain the causes of VVF.

5.5 Recommendations for Further Studies

Based on the findings, scope and limtations of the study, the following are recommended for further studies:

1. There should be further study on the social context in patient's treatment failure of vesicovaginal fistula (VVF) in both states.
2. There should be an in-depth study on the social contexts of traditional therapeutic regimen in the treatment of vesicovaginal fistula in both states.

REFERENCES

AbouZahr, C. 2003. Global burden of maternal death and disability. *British medical bulletin*, 67(1), 1-11.

Aboyeji, A. F. 1997. Obstetric performance of teenage primigravidae in Ilorin, Nigeria. *Nigeria Medical Journal,* 33, 56-59.

Adadevoh, S. W.., Hobbs, C., and Elkins T. E. 1989. The relation of the true conjugate to maternal height and obstetric performance in Ghanaians. *International Journal of Gynecology and Obstetrics*, 28(3), 243–251.

Adefolaju, T. 2014. Traditional and Orthodox Medical Systems in Nigeria: The Imperative of a Synthesis. *American Journal of Health Research*, 2(4), 118-124.

Adetoro, O. O. 1989. *In WHO report on Obstetric fistula*. WHO/MCH/MSM/91.5.

Adeusi, S.O., Adekeye, O.A., and Ebere, L.O. 2014. Predictors of Maternal Health As Perceived By Pregnant Women in Eti-Osa, Lagos State, Nigeria. *Journal of Education and Practice,* 5, 18.

Adler, A. J., Ronsmans, C., Calvert, C., and Filippi, V. 2013. Estimating the prevalence of obstetric fistula: a systematic review and meta-analysis. *BMC pregnancy and childbirth*, *13*(1), 1-14.

Ahmed, S., and Holtz, S. 2007. Social and economic consequences of obstetric fistula: life changed forever? *International Journal of Gynaecology and Obstetrics*, 99(1), 10-15.

Ajilowo, J., and Olujimi, B. 2007. Accessibility of rural dwellers to health care facilities in Nigeria: the Owo experience. Pakistan. *Journal social sciences,* 4 (1), 44-55.

Akeju. D. O., Oladapo, O. T., Vidler, M., Akinmade, A. A., Sawchuck, D. 2016. Determinants of health care seeking behaviour during pregnancy in Ogun State, Nigeria. *Reproductive Health*, 13(1), 68-74.

Alubo, S.O. 1995. Medical Professionalism and state power in Nigeria, Jos, Nigeri: *Center for Development Studies*. University of Jos Nigeria.

Amodu, O.C., Salami, B.O., and Richter, M.S., 2018. Obstetric fistula policy in Nigeria: a critical discourse analysis. *BMC pregnancy and childbirth*, *18*(1), 1-9.

Ampofo, E. F., Omotara, B. A., Otu, T. and Uchebo, G. 1990. Risk factors of vesicovaginal fistula in Maiduguri Nigeria: a case control study. *Tropical Doctor,* 20(3), 138-139.

Andargie, A. A., and Debu, A. 2017. Determinants of obstetric fistula in Ethiopia. *African health sciences*, 17(3), 671-680.

Animut, M., Mamo, A., Abebe, L., Berhe, M. A., Asfaw, S., and Birhanu, Z. 2019. "The sun keeps rising but darkness surrounds us": a qualitative exploration of the lived experiences of women with obstetric fistula in Ethiopia. *BMC women's health*, *19*(1), 1-10.

Anioke, O. 2014. VVF Center: *The feats and projects.*

Aryal, S., and Shrestha, D. 2020. Motherhood in Nepal during the covid 19 pandemic: are we heading from safe to unsafe? *Journal of Lumbini Medical College*, 8(1), 128-129.

Babbie, E. R. 2005. *The Basics of Social Research*. Chapman University.

Badru, F. I. 2001. Sociology of Health and Illness Relations. In Olurode, L. and Soyombo, O. eds., *Sociology of Health and Illness Relations* (pp. 326-355). Ikeja: John West Publications.

Balarajan, Y., Usha, R., Emre, O., Amuraj, H. S., and Subramanian, S. V. 2011. Anaemia in low-income and middle-income countries. *Lancet*, 378(9809), 2123–2135.

Balcha, W.F., Nigussie, A.A, Beyene, F.Y., and Tesfu, A.A. 2020. Awareness and its associated factors of obstetric fistula among antenatal care Attendees in Injibara Town Health Institution, Awe zone, North West, Ethiopia, 2019. *Journal of pregnancy*, 2020.

Barageine, J. K., Tumwesigye, N. M., Byamugisha, J. K., Almroth, L., Faxelid, E. 2014. Risk factors to obstetric fistula in Western Uganda: a case control study. *PLoS ONE*, 9(11), 122-299.

Barker, R. G. 1968. *Ecological Psychology*. Stanford, Calif.: Stanford University Press.

Bashah, D. T., Worku, A. G., and Mengistu, M. Y. 2018. Consequences of obstetric fistula in sub-Sahara African countries, from patients'perspective: a systematic review of qualitative studies. BMC Women's Health, 18(1), 1-12.

Basheer, S. A., and Pumpaibool, T. 2015. Knowledge, attitude and maternal health care utilisation among married women of reproductive age towards vesicovaginal fistula in Kebbi state, Nigeria. *Journal of Health Research*, 29(2), 93-100.

Bulndi, L. B., Ireson, D., Adama, E., and Bayes, S. 2022. Sub-Saharan African women's views and experiences of risk factors for obstetric fistula: a qualitative systematic review. *BMC Pregnancy Childbirth* 22:680-692.

Capes, T., Ascher-walsh, C., Abdoulaye, I., and Brodman, M. 2011. Obstetric fistula in low and middle income countries. *Mt Sinai Journal of Medicine,* 78(3), 352-61.

Changole, J., Kafulafula, U., Sundby, J., and Thorsen, V. 2019. Community perceptions of obstetric fistula in Malawi. *Culture, health and sexuality, 21*(5), 605-617.

Changole, J., Thorsen, V. C., and Kafulafula, U. 2017. "I am a person but I am not a person": experiences of women living with obstetric fistula in the central region of Malawi. *BMC Pregnancy and Childbirth,* 17(1), 1-13.

Cohen, D. A., Scribner, R. A., and Farley, T. A. 2000. A structural model of health behavior: A pragmatic approach to explain and influence health behaviors at the populations' level. *Preventive Medicine,* 30, 146–154.

Cowgill, K. D., Bishop, J., Norgaard, A. K., Rubens, C. E., and Gravett, M. G. 2015. Obstetric fistula in low-resource countries: an under-valued and under-studied problem–systematic review of its incidence, prevalence, and association with stillbirth. *BMC pregnancy and childbirth*, 15(1), 1-7.

Cox, M. L. 1963. Contracted pelvis in Nigeria. *Journal of Obstetrics and Gynaecology of the British Commonwealth,* 70(3), 487–494.

Cron, J. 2003. Lessons from the developing world: Obstructed labor and the vesico-vaginal Fistula. *MedGenMed,* 5(3), 24-30.

Dars, S., Brohi, S., Masroor, B. A., Bashir Keerior, R., Liaquat, F., and Kareem, K. 2022. Factors associated with vesicovaginal fistula and their treatment outcome. *Paskitan BioMedical Journal,* 5(6), 70-74.

Daru, P. H., Karshima, J. A., Mikah, S., and Nyango, D. 2011. The burden of vesicovaginal fistula in North Central Nigeria. *Journal West African College of Surgeon,* 1(2), 50-62.

de Groot, R., Kuunyem, M.Y., and Palermo, T. 2018. Child marriage and associated outcomes in Northern Ghana: a cross-sectional study. *BMC Public Health,* 18, 1-12.

de Ridder, D. 2009. Vesicovaginal Fistula: a major health care problem. *Current Opinion in Uroogy*, 19(4), 358-361.

Dempsey, A., Sripad, P., Sultana, K.. Kirk, K. Hossain S., and Warren, C. 2021. Pathways to service access for pre-eclampsia and eclampsia in rural Bangladesh: exploring women's care seeking. *PLoS ONE,* 16(2), 0245371.

Emma-Echiegu, N., Okoye, U.O., and Odey, E.S. 2014. Knowledge of Causes of VVF and Discrimination Suffered by Victims in Ebonyi State, Nigeria: A Qualitative Study. *Social Work in Public Health*, 29, 417–427.

Fadeyi, A. O., and Oduwole, T. A. 2016. Effects of religion on reproductive issues in Nigeria. *International Journal of Innovative Healthcare Research,* 4(1), 17-33.

Farmer, P. E., Bruce, N., Sara S., and Salman, K. 2006. Structural violence and clinical medicine. *PLoS Medicine,* 3(10), 449.

Federal Ministry of Health [FMoH]. 2016. National Health Policy 2016: Promoting Health of Nigerians to Achieve Socioeconomic Development. *Edited by Health Planning*. Abuja: Federal Ministry of Health. Retrieved from: https://extranet.who.int.

Fiander, A., and Vanneste, T. 2012. Transport my patient: an initiative to overcome the barrier of transport costs for patients accessing treatment for obstetric fistulae and cleft lip in Tanzania. *Tropical Doctor*, 42(2), 77–79.

Fisher, E. B. 2005. Ecologic approaches to Self- Management: The Case of Diabetes. *American Journal of Public Health*, 95(9), 1523–1535.

Fistula Foundation, 2014. Spotlight on where we're helping: *spring Newsletter*.

Flay, B. R., and Petraitis, J. 1994. The theory of triadic influence: A new theory of health behavior with implications for preventive interventions. In Albrecht, G. S. eds., *Advances in Medical Sociology, Vol. IV: A Reconsideration of Models of Health Behavior Change*. Greenwich, Conn.: JAI Press.

Frederick, G., and Stephen, M. T. 2007. Shopping for health: Affliction and response in a South African Village. *African Sociological Review*, 11(2), 64-79.

Geidam, A .D., Audu, B. M., and Oummate, Z. 2011. Pregnancy outcome among grand multiparous women at the University of Maiduguri Teaching Hospital: A case control study. *Journal of Obstetrics and Gynaecology*, 31(5), 404–408.

Gilligan, J. 1997. *Violence: Reflections on a National Epidemic*. New York: Vintage Books edition.

Girls, not brides, Nigeria. 2016. https://www.girlsnotbrides.org/child-marriage/nigeria/. Accessed 20 December, 2020

Glanz, K., Rimer, B., and Lewis, F.M. 2000. Theory, research, and practice in health behavior and health education. In: Glanz K, Rimer BK, Lewis FM, eds., *Health Behavior and Health Education: Theory, Research and Practice*. San Francisco, CA, USA: Jossey-Bass.

Glanz, K., Sallis, J. F., Saelens, B. E., and Frank, L. D. 2005. Healthy nutrition environments: concepts and measures. *American Journal of Health Promotion*, 19(5), 330–333.

Gordon, C. 2016. *Traditional African perception of illness*. www.blackherbals.com/ Traditional_African_Perception_of_Illness. pdf. Accessed 2 February 2018.

Greenspan, J. A., Chebet, J. J., Mpembeni, R., Mosha, I., Mpunga, M., Winch, P. J., Killewo, J., and Baqui, A. H., and McMahon, S. A. 2019. Men's roles in care seeking for maternal and newborn health: a qualitative study applying the three delays model to male involvement in Morogoro Region, Tanzania. *BMC pregnancy and childbirth*, *19*(1), 1-12.

Harrison, K. A. 1983. Obstetric fistula: one social calamity too man. *Journal of Obstetrics and Gynaecology*, 90, 385–386.

_____. 1985. Child-bearing, health and social priorities: a survey of 22 774 consecutive hospital births in Zaria, Northern Nigeria. *British Journal of Obstetrics and Gynaecology*, *92*, 1-119.

_____. 2000. Maternal Morbidity and social conditions with particular references to illiteracy and poverty. *Sexual Health Matters*, Middlesbrough, U.K. Express print works.

Hassan, M. A., and Ekele, B. A. 2009. Vesico Fistula: Do patients know the cause? *Annals of African Medicine*, 8(2), 122-126.

Hilton, P., and Ward, A. 1998. Epidemiological and surgical aspects of urogenital fistula: a review of 25 years' experience on southwest Nigeria. *International Urogynecos Journal of Pelvic Floor Dysjunct*, 9(4), 189-194.

Houweling, A. J., Carine, R., Oona, M. R., and Anton, E. K. 2007. Huge poor-rich inequalities in maternity care: An international comparative study of maternity and child care in developing countries. *Bulletin of the World Health Organisation*, 85(10), 745–754.

Ijaiya, M. A, Rahman A.G., and Aboyeji, A. P. 2010. Vesicovaginal fistula: a review of Nigerian experience. *West Africa Journal of Medicine*, 29, 293-298.

Ijaiya, M. A. 2002. Vesicovaginal fistula: Epidemiology and prevention. *Postgraduate Doctor Caribbean*, 18, 179-182.

_____. 2004. Posterior cervical lip for juxtacervicalvesicovaginal fistula closure (M. Ijaiya's technique). *Int. Urogynaecol Journal*, 15, 216-218.

Ijaiya, M. A., and Aboyegi, P. A. 2004. Obstetric Urogenital fistula: The Ilorin experience, Nigeria. *West African Journal of Medicine*, 23(1), 7-9.

Ijaiya, M.A., Rahman, A.G., Aboyeji, A.P., Olatinwo, A.W.O., Esuga, S.A., Ogah, O.K., Raji, H.O., Adebara, I.O., Akintobi, A.O., Adeniran, A.S. and Adewole, A.A.A.,

2010. Vesicovaginal fistula: a review of Nigerian experience. *West African Journal of Medicine, 29*(5).

Jegede, A. S. 2002. The Yoruba cultural construction of health and illness. *Nordic Journal of African Studies* 11(3), 322-335.

Jeong, W., Jang, S., Park, E., and Nam, J. Y. 2020. The Effects of Socioecon omic Status on All-Cause Maternal Mortality: A Nationwide Population-Base Cohort Study. *International Journal of Environmental Research and Public Health, 17*(12), 4606.

John, S. 2016. Vesicovaginal fistula: drugs and diseases. *Obstetrics and gynecology*. Medscape.

Johnson, C. D. 2015. A study of the predisposing factors to Vesico-Vaginal Fistula in women of Ebonyi Local Government Area of Ebonyi State. *South American Journal of Public Health,* 3(3).

Kabakyenga, J.K., Östergren, P.O., Turyakira, E., Mukasa, P.K. and Pettersson, K.O., 2011. Individual and health facility factors and the risk for obstructed labour and its adverse outcomes in south-western Uganda. *BMC pregnancy and childbirth, 11*(1), 1-10.

Kabir, M., Iliyasu, Z., Abubakar, I. S., and Umar, U. I. 2003. Medico-social problems of patients with vesicovaginal Fistula in Murtala Mohammed Specialist Hospital, Kano. *Annals of African Medicine,* 2(2), 54 – 57.

Kanu, M. 1990. For Safe motherhood Initiative: Nigeria. *Report on publicity and media event,* 3.

Kasamba, N., Kaye, D .K. and Mbalinda, S .N. 2013. Community awareness about risk factors, presentation and prevention and obstetric fistula in Nabitovu village, Iganga district, Uganda. *BMC Pregnancy Childbirth,* 13(1), 1-10.

Kelly, J., and Kwast, B. E. 1993. Epidemiologic study of vesicovaginal fistulas in Ethiopia. *International Urogynaecol Journal,* 4, 278-281.

Khan, K. S., Daniel, W., Lale Say, A.M.G. and Paul, F. A. V. 2006. WHO analysis of causes of maternal deaths: A systematic review. *Lancet,* 367(9516), 1066–1074.

Kolade, O.A., Hanson, V.F, Makinde, O.Y., and Abolarinwa, P.B. 2019. Awareness of factors responsible for Vesico-vaginal Fistula among Hausa women in Nigeria. *Journal of health science and nursing,* 4(6), 1-17

Kotlar, B., Gerson, E., Petrillo, S., Langer, A., and Tiemeier, H. 2021. The impact of the COVID-19 pandemic on maternal and perinatal health: a scoping review. *Reproductive health, 18*(1), 1-39.

Kwawukume, E.Y., Ghosh, T.S., and Wilson, J. B. 1993. Maternal height as a predictor of vaginal delivery. *International Journal of Gynecology and Obstetrics*, 41(1), 27–30.

Lawson, J. 1993. Vaginal fistula. *International Journal of Gynaecology and Obstetrics*. 40, 13-17.

Lewin, K., and Cartwright, D. 1951. *Field Theory in Social Science*. New York: Harper

Lo, T. S., Chua, S., Wijaya, T., Kao, C. C., and Uy-Patrimonio, M. C. 2019. Clinical relevance and treatment outcomes of vesicovaginal fistula (VVF) after obstetric and gynecologic surgery. *Taiwanese Journal of Obstetrics and Gynecology*, *58*(1), 111-116.

Maheu-Giroux, M., Filippi, V., Maulet, N., Samadoulougou, S., Castro, M.C., Meda, N., Pouliot, M., and Kirakoya-Samadoulougou, F. 2016. Risk factors for vaginal fistula symptoms in Sub-Saharan Africa: a pooled analysis of national household survey data. *BMC pregnancy and childbirth*, *16*(1), 1-10.

Maheu-Giroux, M., Filippi, V., Samadoulougou, S., Castro, M. C., Maulet, N., Meda, N., and Kirakoya-Samadoulougou, F. 2015. Prevalence of symptoms of vaginal fistula in 19 sub-Saharan Africa countries: a meta-analysis of national household survey data. *The Lancet Global Health*, *3*(5), e271-e278.

Margolis, T., and Marcer, L. 1994. Vesicovaginal fistula, obstetric fistula. *Obstetrical Survey*, 49, 840-846.

McAlister, C., and Baskett, T. F. 2006. Female education and maternal mortality: A worldwide survey. *Journal of Obstetrics and Gynecology of Canada* 28(11), 983–990.

McCarthy, J. 1997. The conceptual framework of the PMM Network**.** *Int Journal of Gynaecol Obstetrics*, 59(suppl. 2), 15-21.

McCarthy, J., and Maine, D. 1992. A framework for analyzing the determinants of maternal mortality. *Studies in family planning*, *23*(1), 23-33.

McCurdie, F. K., Moffatt, J., and Jones, K. 2018. Vesicovaginal fistula in Uganda. *Journal of Obstetrics and Gynaecology*, *38*(6), 822-827.

McLeroy, K. R., Bibeau, D., Steckler, A., and Glanz, K. 1988. An ecological perspective on health promotion programs. *Health Education Quarterly*, 15, 351–377.

Medical Dictionary S. V. 2009. Reproductive age retrieved February 25 2016 from http://medical-dictionary.thefreedictionary.com/reprouctive+age

Meh, C., Thind, A., Ryan, B., and Terry, A. 2019. Levels and determinants of maternal mortality in Northern and Southern Nigeria. *BMC pregnancy and childbirth* 19(417), 2471-2478.

_____. 2020. Ratios and determinants of maternal mortality: a comparison of geographic differences in the northern and southern regions of Cameroon. *BMC pregnancy and childbirth*, 20,194.

Merchant, K. M., Jose, V., and Edgar, K. 2001. Maternal height and newborn size relative to risk of intrapartum caesarean delivery and perinatal distress. *British Journal of Obstetrics and Gynaecology*, 108(7), 689–696.

Morhanson-Bello I. O., Ojengbede, O. A., Adedokun, B. O., Oladokun, A., Okunola, M.A. 2011. Obstetric Fistula Repair in Nigeria Tertiary Health Institution: lessons learnt from outcome of care. *Tropical Journal of Obstetrics and Gynaecology*, 28(2).

Morhason-Bello, I.O., Kareem, Y.O., Abdus-Salam, R. A., Bello, O. O., Lawal, O. O., Akinlusi, F.M., Abegunde, L.O., and Ojengbede, O., 2020. Factors associated with the awareness of vaginal fistula among women of reproductive age: findings from the 2018 Nigerian demographic health cross-sectional survey. *BMJ open*, *10*(11), p.e040078.

Mselle, L. T., and Kohi, T. W. 2015. Living with constant leaking of urine and odour: thematic analysis of women affected by obstetric fistula in rural Tanzania. *BMC Women's Health,* 15, 107.

Mteta, K. A. 2006. Iatrogening ureteric and bladder injuries in obstetric and gynaecologic surgeries. *East Africa medical Journal*, 83 (2), 79-85.

Mukherjee, J. S., Donna J. B., Hind S., Maxi R., Sarah M, and Mary S. 2011. Structural violence: A barrier to achieving the Millennium Development Goals for women. *Journal of Women's Health,* 20(4), 593–597.

Muleta, M., and William, G. 1999. Postcoital injuries treated at the Addis Ababa Fistula Hospital, 1991-1997. *Lancet*, 354(9195), 2051-2052.

Muleta, M., Hamlin, C., Fantahun, M., Kennedy, R. C., and Tafesse, B. 2008. Health and social problems encountered by treated and untreated obstetric fistula patients in rural Ethiopia. *Journal of Obstetrics and gynecology*, 30(1), 44-50.

Muleta, M., Rasmussen, S., and Kiserud, T. 2010. Obstetric fistula in 14,928 Ethiopian women. *Obstetrics and gynaecology*, 89(7), 945-951.

Muneer-Deen, A.I., Abiodun, P. A., and Zainab, B.B.I. 2002. Epidemiology of vesico-vaginal fistula at the University of Ilorin Teaching Hospital, Nigeria. *Tropical Journal of Obstetric Gynaecology*, 19,101-103.

Murphy, M. 1981. Social consequences of vesico-vaginal fistula in northern Nigeria. *Journal of Biosocial science*, 13, 139-150

Mutihir T. J., and Golit, W. N. 2010. A review of policies and programs for promoting maternal health in Plateau State, Nigeria.*African Journal of Reproductive Health*, 14(2), 43-48.

Naegle, F.C. 1939. The obliquely contracted pelvis, containing also an appendix of the most important defects of the female pelvis. New York, Centennial Edition (originally published in Mainz, Germany, 1839). Birmingham, AL: *Classics of Obstetrics and Gynecology Library,* 1991. Nahar

National Population Commission (NPC) Nigeria and ICF International. 2019. *Nigerian Demographic and Health Survey 2018.* Abuja, Nigeria, and Rockville, Maryland, USA: NPC and ICF International.

_____. 2014. *Nigerian demographic and health survey 2013.* Abuja and Rockville, Maryland, USA: NPC and ICF International.

_____. 2009. *Nigerian demographic and health survey 2008.* Abuja and Rockville, Maryland, USA: NPC and ICF International.

Nawaz, H., Khan, M., Tareen, F. M., and Khan, S. 2010. Retrospective study of 213 cases of female urogenital fistulae at the Department of Urology and Transplantation Civil Hospital Quetta, *Pakistan.Journal of Pakistan Medical Association,* 60, 28-34.

NPC. 2006. *Census Report.* National Population Commission. Abuja, Nigeria: Government Printer.

Nsemo, A.D. 2014. Influence of Abandonment, Stigmatisation and Social Isolation on the Coping Strategies of Women with Vesicovaginal Fistula in Akwa Ibom State, Nigeria. *Journal of Nursing Care,* 3, 159, 2-8. doi:10.4172/2167-1168.1000159.

Nwokocha, E. E., and Obioma, O. C. 2016. Social and cultural factors influencing immunisation of children in rural Abia state, Nigeria. *International Journal of Child, Youth and FAMILY studies,* 7(3/4), 404-422.

Odo, A. T. 2005. Female genital mutilation In: Kwawukume E.Y, Emuveyan E.E, eds. *Comprehensive Gynecology in the tropics. 1st edition* (pp (2), 68-67) Accra. Graphic packaging ltd.

Odu, B. K. 2013. The predisposing factors affecting the prevalence of vesico-vaginal fistula among women of reproductive are in Northern Nigeria. *European Journal of Advanced Research in Biological and Life Science,* 1(1), 1-8

Odu, B. K., and Cleland, J. 2013. The psych-social consequences of vesicovaginal fistula among women in Northern Nigeria. *Arabian journal of Business and Management Review (Nigerian Chapter),* 1 (8), 1-14.

Odu, B.K. 2000. *Vesicovaginal fistula: The causes and psychological implications*. Tropical Issues. Ado-Ekiti: Yemi printing press.

Ojanuga, D.O. 1994. Social work practice with childbirth-injured women in Nigeria. *Health and Social Work,* 19,120-124.

Okafor, I. P., Sekoni, A. O., Ezeiru, S. S., Ugboaja, J. O., and Inem, V. 2014. Orthodox versus unorthodox care; a qualitative study on where rural women seek healthcare during pregnancy and childbirth in Southwest, Nigeria. *Malawi Medical Journal,* 26(2), 45-49.

Okokuwebe, M. E., and Okafor E.E. 2015. Maternal health and the implication for sustainable transformation in Nigeria. *Research on humanities and social science*, 5(6), 1-3.

Okoye, U.O., Emma-Echiegu, N., and Tanyi, P. 2014. Living with vesico-vaginal fistula: experiences of women awaiting repairs in Ebonyi State, Nigeria. *Tanzania Journal of Health Research,* 16(4), 322-328.

Olonade, O., Olawandem T. I., Alabi, J.O., and Imhonopi D. 2019. Maternal mortality and maternal health care in Nigeria: Implication for socioeconomic development. *Open Access Macedonian Journal of medical sciences*, 7 (5), 849-855.

Onyeugo, G. U., Iwuala, C., Nwufo, C.R., Ibe, S. Udujih, O. G., and Udujih, H. I. 2019. Trends and analysis of vesico-vaginal fistula among attendee's in fistula centers in Kano State, Nigeria. *Journal of Advances in Medicine and Medical Research,* 31(9), 1-10.

Oshonwoh, F. E., Nwakwuo, G. O., and Ekiyor, C. P. 2014. Traditional birth attendant and women's health practices: A case study of Patani in Southern Nigeria. *Journal of public health and epidemiology,* 6(8), 252-261.

Owumi, B., Raji, S. O., and Aliyu, T. K. 2013. Religious beliefs and the utilisation of traditional medicine among members of Pentecostal churches in Emurin, Ogun State Nigeria. *African Journal of Social sciences,* 3(4), 23-34.

Ozaltin, E., Kenneth H., and, Subramanian S.V. 2010. Association of maternal stature with offspring mortality, underweight, and stunting in low- to middle-income countries. *Journal of the American Medical Association,* 303(15), 1507–1576.

Panel, A. P. 2010. Maternal health. *Geneva: Investing in the Lifeline of Healthy Societies and Economies Policy Brief, Africa Progress Panel*.

Raji, M. O., Hassan, M., Yusuf, M. H., Yusuf, R., Ahmad, A., and Raji, H. O. 2018. Knowledge, effect of vesicovaginal fistula (VVF) and satisfaction with VVF repair related services in a fistula repair facility in North Western Nigeria. *Age (years), 18*, 18-35.

Ravinder, A., and Sreekanth, G. 2020. A Community Based Study on the Role of Maternal Education on Antenatal Care Services and Child Care at Various Tribal Villages, Adilabad, Telangana State. *Journal of Contemporary Medicine and Dentistry*, *8*(2).

Roberton, T., Carter, E.D., Chou, V.B., Stegmuller, A.R., Jackson, B.D., Tam, Y., Sawadogo-Lewis, T. and Walker, N., 2020. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. *The Lancet Global Health*, *8*(7), e901-e908.

Ronsmans, C., Holtz, S., and Stanton, C. 2006. Socioeconomic differentials in caesarean rates in developing countries: A retrospective analysis. *Lancet,* 368(9546), 1516–1523.

Rosato, M., Laverack, G., Grabman, L.H., Tripathy, P., Nair, N., Mwansambo, C., Azad, K., Morrison, J., Bhutta, Z., Perry, H., and Rifkin, S., 2008. Community participation: lessons for maternal, newborn, and child health. *The Lancet*, *372*(9642), 962-971.

Sallis, F. J., and Owen, N. 2000. Ecological models of health behavior. In: Glanz K, Rimer BK, Lewis FM, eds. *Health Behavior and Health Education: Theory, Research and Practice*. San Francisco, CA, USA: Jossey-Bass.

Santhya, K.G. 2011. Early marriage and sexual and reproductive health vulnerabilities of young women: A synthesis of recent evidence from developing countries. *Current Opinion in Obstetrics and Gynecology,* 23(5), 334–339.

Say, L., and Rainse, R. 2007. A systematic review of inequalities in the use of maternal health care in developing countries: Examining the scale of the problem and the importance of context. *Bulletin of the World Health Organisation,* 85(10), 812–819.

Save the Children Nigeria. 2016. *State of the Nigerian children 2015: children left behind in Nigeria*. Save the Children Nigeria: Abuja.

Shanmugasundaram, R., Murugavaithiaatha, P., and Arabind, P. 2020. Vesicovaginal fistula: review and recent trends. *Indian Journal of Urology,* 35(4), 250-258.

Shittu, O. S., Ojengbende, O. A., and Wara, L. H. 2007. A review of protective care for obstetric fistula in Nigeria. *International Journal of Gynecology and Obstetrics,* 99(1), 79-84.

Shrestha, D. B., Pravash, B., Pearlbiga, K., Pinky, J., Gaurab, M., Ganesh, D., Gehanath, B., Marisha, S., and Pratik, G. 2022. Vesico-Vaginal Fistula in Females in 2010–2020: a Systemic Review and Meta-analysis. *Reproductive Sciences*, 1-19.

Sibley, L., and Amare, Y., 2017. Illness recognition and care seeking for maternal complications of pregnancy and birth in rural Amhara and Oromia regional states of Ethiopia. *BMC pregnancy and childbirth*, *17*(1), 1-9.

Sjøveian, S., Vangen, S., Mukwege, D., and Onsrud, M. 2011. Surgical outcome of obstetric fistula: a retrospective analysis of 595 patients. *Acta obstetricia et gynecologica Scandinavica*, *90*(7), 753-760.

Sripad, P., Ndwiga, C., and Keya, T. 2017. Exploring the association between FGM/C and Fistula: A review of the evidence. *Evidence to End FGM/C:* Research to Help Women Thrive. New York: Population Council.

Stokols, D., Grzywacz, J. G., McMahan, S., and Phillips, K. 2003. Increasing the Health Promotive Capacity of Human Environments. *American Journal of Health Promotion*, 18, 4–13.

Sunday-Adeoye I., Okonta, P., and Ulu, O. L. 2011. Prevalence, profile and obstetric experience of fistula patients in Abakiliki, South East Nigeria: *Urogynecologia International Journal,* 25(1), 6-11.

Swain, D., Parida, P. S., Jena, S. K., Das, M., and Das, H. 2020. Prevalence and risk factors of obstetric fistula: implementation of a need-based preventive action plan in south eastern rural community of India. *BMC Women's Health,* 20:40.

Tahzip, F. 1983. Epidemiological determinants of vesicovaginal fistulas. *International Journal of Obstetrics and Gynaecology*, 90(5), 387-391.

Tebeu, P.M., Fomulu, J.N., Khaddaj, S., de Bernis, L., Delvaux, T., and Rochat, C.H., 2012. Risk factors for obstetric fistula: a clinical review. *International urogynecology journal*, *23*(4), 387-394.

Ugochi, O. G., Iwuala, C., Nwufo, C. R., Ibe, S., Udujih, O. G., and Udujih, H. I. 2019. Trend Analysis of Vesico-vaginal Fistula among Attendee's in Fistula Centres in Kano State, Nigeria. *Journal of Advances in Medicine and Medical Research*, 31(9) 1-10.

Ujah, I. A., Aisien O .A., Mutihir, J. T., Vanderjagt, D. J., Glew, R. H., and Uguru, V. E. 2005. Factors contributing to maternal mortality in north-central Nigeria: A seventeen year review. *African Journal of Reproductive Health,* 9(3), 27–40.

Umeora, O.U., and Emma-Echiegu, N. B. 2015. Vesico-vaginal fistula in developing countries-time to turn off the tap. *Journal of Pregnancy and Child Health,* 2,120.

Umoiyoho, A. J., and Abasiattai, A. M. 2011. Review of obstetric fistulas in a rural hospital in South-south Nigeria. *Urogynaecologia*, 25:e7, 25-27.

Umoiyoho, A., and Inyang-Etoh, C. 2012. Community misconception about the aetiopathogenesis and treatment of vesicovaginal fistula in northern Nigeria. *International Journal of Medicine and Biomedical Research,* 1(3), 193-198.

Umoiyoho, A.J., Inyang-Etoh, E.C., Abah, G.M., Abasiattai, A.M., and Akaiso, O.E., 2011. Quality of life following successful repair of vesicovaginal fistula in Nigeria. *Rural and remote health, 11*(3), 102-108.

UNFPA, E., 2003. Obstetric fistula needs assessment report: Findings from nine African countries. *New York: UNFPA EngenderHealth*.

UNICEF, 2001. Children and women's right in Nigeria: A wake up call situation assessment and analysis on harmful traditional practice (FGM). Hodge. Abuja: NPC and UNICEF Nigeria, 195-200.

_____. 2008. *State of the World's Children 2009: Maternal and Newborn Health*. Geneva: UNICEF.

United Nations Development Programme. 2015. Sustainable Development Goals (SDGs).http://www.undp.org/content/undp/en/home/mdgoverview/post-2015-development-agenda/ (accessed 22 May 2018)

United Nations Population Fund (UNFPA) 2005. *Nigerian fistula Fortnight*. United Nations Technical Report.www.unpfa.org/reproductivehealth.html accessed 22 May 2018).

United States Agency International Development (USAID). 2015. USAID fistula programme, pages 1-3. Accessed on 14 may 2021

Wall, L. L. 2012a. Obstetric fistula is a 'neglected tropical disease'. *PLoS Neglected Tropical Diseases,* 6(8), e.1769.

_____. 1998. Dead mothers and injured wives: the social context of maternal morbidity and mortality among the Hausa of northern Nigeria. *Studies on Family,* 29 (4), 341-359.

_____. 2002. Thomas Addis Emmet, the vesicovaginal fistula, and the origins of reconstructive gynecologic surgery. *International Urogynecology Journal of Pelvic Floor Dysfunct*, 13, 145-155.

_____. 2006. Obstetric vesicovaginal fistula as an international public health problem. *Lancet,* 368(9542), 1201-1209.

_____. 2010. Obstetric fistula as an international public health problem. *Lancet*, 368, 1201-1209.

_____. 2012. A framework for analyzing the determinants of obstetric fistula formation. *Studies in family planning*, 43(4), 255-272.

_____. 2012b. Overcoming phase 1 delays: The critical component of obstetric fistula prevention programs in resource-poor countries. *BMC Pregnancy and Childbirth*, 12(1), 68.

Wall, L.L., Karshima, J.A., Kirschner, C., and Arrowsmith, S.D., 2004. The obstetric vesicovaginal fistula: characteristics of 899 patients from Jos, Nigeria. *American journal of obstetrics and gynecology*, *190*(4), 1011-1016.

WHO. 1998. *Female Genital Mutilation: An overview*. Geneva: WHO.

_____. 2005. Make every mother and child count. *The World Health Report*. Geneva.

_____. 2006. *Obstetric Fistula: Guiding principles for clinical management and programme development.* WHP Press: Geneva

_____. 2006. Obstetric Fistula: Guiding principles for clinical management and programme development: Gwyneth L and Luc de, B, eds., *Integrated Management of Pregnancy and Childbirth* WHP Press: Geneva

_____. 2010. Maternal health: Investing in the Lifeline of Healthy Societies and Economies. *Africa Progress Panel Policy Brief September* 2010

_____. 2017. Managing complications in pregnancy and childbirth: A guide to midwives and doctors. 2nd edition, *integrated management of pregnancy and childbirth*: ISBN 9789241565493.

_____. 2019. Maternal mortality. *WHO fact sheets.*

_____. 2020. Maternal health in Nigeria: generating information for action. *Sexual and reproductive health.*

Women Deliver. 2010. Focus on 5: Women's Health and the MDGs

World Health Statistics, 2018. *Monitoring health for the SDGs. Sustainable development goals*. Geneva: World Health Organisation, 2018.

Zacharin, R. F. 1988. *Obstetric Fistula*. New York, NY: Springer-Verlag/Wien

_____. 2000. A history of obstetric vesicovaginal fistula. Australian and New Zealand *Journal of Surgery*, 70(12), 851-854.

APPENDIX I
Questionnaire

My name is Okwuchi Chioma Obioma, a student of the Department of Sociology, University of Ibadan. As part of the requirement for the award of a PhD degree, I am conducting a study on the topic: **'Social Context of Vesicovaginal Fistula in Ebonyi and Plateau States, Nigeria**.

S/N	Question	Responses	Codes
1	How old are you now?	……. In Years	
2	Name of community	Please specify	
3	Local Government Area	Please specify	
4	Marital status	Single Married Separated Divorced Widowed Cohabiting	1 2 3 4 5 6
5	What is your family type?	Monogamous Polygamous	1 2
6	What is your highest level of education completed?	No formal Primary Secondary Tertiary Others (specify).....	1 2 3 4 5
7	Religion	Christian Islam Free thinker Traditionalist Others (specify)	1 2 3 4 5
8	What is your Occupation?	Housewife Trading Civil service Artisan Farmer Student Other (specify.....	1 2 3 4 5 6 7
9	Average monthly income	< ₦18,000 ₦18,000 - ₦49.999 ₦50,000 - ₦99.999 Above ₦100,000 Others (specify)	1 2 3 4 5
FOR MARRIED RESPONDENTS (AND THOSE WHO HAVE HAD PREVIOUS DELIVERY)			
10	How old were you when you got married?	…….	
11	How many children do you have?	.....	
12	What was your age at first birth?	.....	
13	Where was your last Place of delivery?	Home Primary Health Center	1 2

		Traditional birth attendant's house Private clinic General hospital Others (specify)	3 4 5
14	How old is your spouse?	.....in Years	
15	What is your spouse's highest level of education completed?	No formal Primary Secondary Tertiary Others (specify).....	1 2 3 4 5
16	What is your spouse's occupation?	……	
17	What is your spouse's monthly income?	< ₦18,000 ₦18,000 - ₦49.999 ₦50,000 - ₦99.999 Above ₦100,000 Others (specify)	1 2 3 4 5

SECTION TWO: COMMUNITY PERCEPTION ABOUT VESICOVAGINAL FISTULA (VVF)

INSTRUCTION: Tick corresponding codes to your choice of answer, provide answers to the open ended questions and where necessary, tick or provide multiple answers.

S/N	Questions	Responses	Codes
1	Have you heard of VVF before?	Yes No	1 2
2a	Do you know what VVF is?	Yes (if yes complete section 2) No (if No, skip to section 3)	1 2
2b	**Kindly indicate either yes or no, if aware of any of the following in relation to the condition of VVF.**		
i.	Uncontrolled leakage of urine from the vaginal	YES	NO
ii.	Uncontrolled leakage of faeces from the vaginal	[ ]	[ ]
iii.	Early marriage/under-age marriage leading to vaginal leakages	[ ]	[ ]
iv.	Patronage of quack doctors during childbirth results in vaginal leakages	[ ]	[ ]
v.	Patronage of TBAs during childbirth causes vaginal leakages	[ ]	[ ]
vi.	Home delivery leads to vaginal leakages after birth	[ ]	[ ]
vii.	Teenage pregnancy results into vaginal leakages	[ ]	[ ]
viii.	Cesarean section during childbirth can lead to vaginal leakages	[ ]	[ ]
ix.	Lack of professional ANC can lead to vaginal leakages	[ ]	[ ]
x.	Insertion of herbs into the vaginal during pregnancy can lead to vaginal leakages	[ ]	[ ]
xi.	Accident can also lead to vaginal leakages	[ ]	[ ]
xii.	The practice of female genital mutilation can casus leakages from the vaginal	[ ]	[ ]

xiii.	Rape of a girl or woman results in vaginal leakages	[ ]	[ ]
3	What is your belief of VVF?	…… ……	
4	What do you think is/are the cause(s) of VVF		
5	Should a VVF patient or victim be blamed for her condition?	Yes (Negtive Perception) No (Positive Perception)	1 0
5b	If yes or no, please give reasons	……	
6	How do you think VVF can be treated?		
7	Where do you think VVF can be treated?(**multiple choice allowed**)	General hospital Traditional healer Private hospital Church/mosque Self-medication Others (specify)……	1 2 3 4 5 6
8	What is your thought on the best way to treat VVF		
9	How do you perceive a VVF victim		

SECTION THREE: PREVALENCE OF VESICOVAGINAL FISTULA

INSTRUCTION: Tick corresponding codes to your choice of answer, provide answers to the open ended questions and where necessary, tick or provide multiple answers.

S/N	Question	Responses	Code
1	Do you know of any woman with VVF in this community?	Yes No	1 2
1	Have you at any point developed VVF	Yes (if Yes, complete this section) No (if No, skip to section 4)	1 2
2	At what age did you develop VVF	..... in years	
3	On what pregnancy did you develop VVF?	First pregnancy Second pregnancy Third pregnancy Forth pregnancy Fifth pregnancy Others (specify).....	1 2 3 4 5 6
4	How long did you live with VVF?	0-4 5-9 10-14 15-19 20+	1 2 3 4 5
5	What event caused you VVF?	.....	
6	Have you been treated?	Yes (ans question 7) No	1 2
7	What method (s) did you use in you get treated?	.....	

SECTION FOUR: DETERMINANTS OF VESICOVAGINAL FISTULA (VVF)

INSTRUCTION: Tick corresponding codes to your choice of answer, provide answers to the open ended questions and where necessary, tick or provide multiple answers.

S/N	Questions	Responses	Codes
1	At what age do majority of women in this community get married?	…….. in years	
2	How is the decision on the age at first marriage determined in this community?		
3	Who mostly determines age at first marriage for a girl child?	Father Mother Both parents Relatives community Others (specify)	1 2 3 4 5 6
4	Where do most women of this community go for child delivery?	Government General hospital Government Health Care Centre Private hospital TBAs house At home Farm Others (specify)	1 2 3 4 5 6 7
5	What is (are) the possible reason(s) for place of delivery? (**multiple choice allowed**)	Low cost Good services Convenience Close proximity Suggested by others Others (specify)…….	1 2 3 4 5
6	What other places do women in this community have their babies delivered?		
7	Do women in this community seek antenatal care?	Yes No	1 2
8	If yes, what form of antenatal care do most women use in your community?	Modern health center Traditional birth attendants Home remedies Others (specify)	
	If no, please give reasons		
9	Who decides where a woman is to have her baby delivered?	Husband wife both spouse The In-laws Relatives Others (specify.....	1 2 3 4 5 6
10	Which health facility exists in your community? **(multiple answers allowed)**	Primary Health Center Private clinic General hospital	1 2 3

		Others (specify)	4
11	How affordable are these health facilities?	Primary Health Center…….. Private clinic……. General hospital…… Others (specify)	1 2 3 4
12	Through what means can/do women mostly access maternal health facilities?	Trekking Motorcycle (okada) Bicycle Taxi Other (specify.....	1 2 3 4 5
13	What is the time duration from your home to the health care center?	<30 minutes 30- 1 hour 1-2 hours >2 hours	1 2 3 4
14	Does your community practice female circumcision?	Yes No	1 2
	If yes, what is its significance to your community?		
15	Have any of your female household members ever been circumcised?	Yes No	1 2
	If yes, at what age is it usually done	……in years	
16	What cultural practices do you think can lead to women of this community having/experiencing VVF?		

SECTION FIVE: SOCIO-ECONOMIC CONSEQUENCES OF VVF

INSTRUCTION: Tick corresponding codes to your choice of answer, provide answers to the open ended questions and where necessary, tick or provide multiple answers.

S/N	Questions	Responses	Codes
1	What are the possible consequences of VVF?		
2	Which of the following do you think VVF can affect?	Schooling Paid job Trading Farming Others (please specify.....	1 2 3 4 5
3	What do you feel towards a VVF victim?	Sympathy Rejection Indifferent Others (please specify.....	1 2 3 4

IDI QUESTION GUIDE

Respondent's socio-demographic variables

S/N	Questions	Responses
1	How old are you?	……in yeas
2	What is you highest level of education?	…….
3	What religious group do you belong to?	…….
4	What occupation(s) are you involved in?	……
5	What is your monthly income?	……...
6	Marital status	…….
7	Family type	……...
8	Age at marriage	……...
9	Age at first birth	…….
10	Spouses highest level of education	……
11	Husbands occupation	……...
12	Spouses' monthly income	…….

1. How old were you when you got married? Probe if it was marriage with consent or without consent
2. Where was your last place of delivery? Probe reasons for choice of birth, and who makes the decision on where to give birth.
3. Please narrate your pregnancy experience. Probe for antenatal visits, nutrition, decision making about when to visit the health centre.
4. At what age did you develop VVF? Probe if primiparous or multiparous and how long victim have lived with this condition.
5. What is your health condition called in your community?
6. Please kindly narrate how you developed VVF – how it all started, what you thought it was at first etc.
7. What do you think is/are the cause(s) of your present condition (probe for their perceived causes other than what the doctors told them).
8. What form of treatment did you seek when you first noticed this problem? (Church, Alfa, traditional healer, modern medicine etc.)? Probe reasons for respondent's first choice of treatment, and treatment outcome; if it got better or worsened.
9. Please can you tell me the circumstances that brought you to the VVF center? Probe for failure of other treatment, advice from significant others or personal choice. And if victims still try other treatments options.
10. How do you perceive the quality of care and support you receive? Probe for care and care giver (both formal and informal), financial, moral, emotional support if they have been adequate.
11. Please describe your relationship with significant others, community, church/ mosque. Probe for acceptance, rejection, stigmatisation, abandonment etc. probe for relationship with spouse.
12. How do you perceive your present condition? (Probe for feeling of rejection, withdrawal from people and coping methods?
13. What recommendations do you have towards preventing VVF from affecting other women?
14. Kindly tell me how VVF has influenced your daily activities - schooling, paid job, trading, farming etc.
15. Kindly describe your economic challenges since the onset of VVF – probe for feeding, hospital bills, daily needs such as cloths and toiletries, and financial burden on the family.

CASE STUDY GUIDE

Respondent's socio-demographic variables

S/N	Question	Responses
1	In what year were you born?	……in years
2	What is your highest level of education completed?	……
3	Religion	……
4	What occupation do your occupation	……
5	What is your monthly income?	……
6	Marital status	
7	Family type	
8	How old were you at first birth	

1. How old were you when you got married? Probe if it was marriage with consent or without consent
2. Where was your last place of delivery? Probe reasons for choice of birth, and who makes the decision on where to give birth.
3. Please narrate your pregnancy experience. Probe for antenatal visits, nutrition, decision making about when to visit the health centre.
4. At what age did you develop VVF? Probe for duration of VVF.
5. Please can you narrate the events that led to you developing VVF?- how it all started , what you perceived it to be at the onset, and your present experience.
6. Kindly tell me the places you have visited for treatment? Probe for first place visited and if there was a back – and – forth movement within available health care system (church/mosque, traditional, orthodox, others) visited. And if victim still visit other treatment center other than the VVF center.
7. What informed your choice of visit and treatment? Probe for perceived cause of illness, competence of treatment, low cost etc.
8. How would you say your condition has affected the relationship between you and your spouse? Probe for sympathy, neglect, separation, divorce etc.
9. What is the nature of care and support you get since you developed VVF. (financial, moral, physical, emotional) - From family, friends, community. Probe for difference in care and support before VVF and in present condition
10. Kindly narrate to me what people said about you when you first developed VVF – probe for adultery, witchcraft, punishment etc.
11. Kindly tell me how VVF has influenced your daily activities - schooling, paid job, trading, farming etc.
12. How has your family/community related with you since you developed VVF? Probe for relationship before VVF and present nature of relationship.

(The guide will be subject to modification based on the lead of the case under study)

Key informant guide for Health Givers

Respondent's socio-demographic variables

S/N	Question	Responses
1	Years of experience	…….in years
2	What is your highest level of education completed?	……
3	Caregiver's designation	……
4	State	

1. Based on your work experience what factors do you think led to VVF in these victims? Please give instances if need be. Probe for social/cultural practices and clinical factors.
2. What form(s) of treatment (alternative medicine) do these victims undergo before coming to the VVF center?
3. Please can you kindly tell me if alternative treatments taken have influenced victim's present condition positively or negatively? Probe for duration of illness, if it has added other forms of health challenge.
4. While in the center have you noticed victims seeking other forms of treatment? (Church, herbs etc.).
5. Based on observation can you say these women receive adequate care and support from family, community? Probe for relationship with spouse, family and friends.

APPENDIX II

AKWỤKWỌ AJỤJỤ

Aha m bụ Chioma Okwuchi Obioma, nwa akwụkwọ nke ngalaba nke sociology Mahadum nke Ibadan. Dịka akụkụ nke ihe achọrọ maka inye akara ugo mmụta PhD, Ana m amụ ihe n'isiokwu a: Mkpebi, Ọganihu na Uzo Ọgwụgwọ nke Vesicovaginal Fistula na Ebonyi na Plateau Steeti, Nigeria.

Nọmba	**Ajụjụ**	**Nzaghachi**	**Koodu**
1	Afọ ole ka ị dị ugbu a?	..... na afo	
2	Aha Obodo	Biko kọwaa	
3	Mpaghara ọchịchị ime obodo	Biko Kowaa	
4	Ọnọdụ Alụm di na nwunye	Naanị out Lụrụ di na nwunye Kewapụrụ Alụkwaghịm Nwanyị di ya nwụrụ Ibikọ ọnụ	1 2 3 4 5 6
5	Kedu ụdị ezinụlọ gị?	Otu ezinụlọ Ezinulo luru karịa otu nwanyị	1 2
6	Kedu ọkwa agụmakwụkwọ gị kacha elu iguzuru?	Enweghị agụmakwụkwọ nkịtị Agụmakwụkwọ praịmarị Ụlọ akwụkwọ sekọndrị Agụmakwụkwọ mahadum Ndị ọzọ (kọwaa)	1 2 3 4 5
7	Okpukperechi	Iso Ụzọ Kraịst Islam Onye na-eche echiche efu Omenala Ndị ọzọ (kọwaa)	1 2 3 4 5
8	Kedu ọrụ gị?	Nwunye ulo Ịzụ ahịa Ọrụ obodo Omenkà Onye ọrụ ugbo Nwa akwukwo Ndị ọzọ (kọwaa)	1 2 3 4 5 6 7
9	Nkezi ego a na-enweta kwa ọnwa	<#18,000 #18,000 - #49,999 #50,000 - #99,999 N'elu #100,000 Ndị ọzọ (kọwaa)	1 2 3 4 5
MAKA NDỊ LỤRỤ DI NA NWUNYE ZARA AJUJU (NA NDỊ MỤGORO NWA N'OGE GARA AGA)			

10	Afọ ole ka ịdi mgbe ị lụrụ di na nwunye?	.....	
11	Ụmụ ole ka ị nwere?	.....	
12	Kedu afọ gị n'oge ọmụmụ nwa mbụ gị?	.....	
13	Ebee ka ebe ikpeazụ ị mụrụ nwa nọ?	Ụlọ Ụlọ ọrụ ahụike nke mbụ Ụlọ onye nlekọta ọmụmụ Ụlọ ọgwụ nkeonwe Ụlọ ọgwụ izugbe Ndị ọzọ (kọwaa)	1 2 3 4 5
14	Afọ ole ka di gị ma ọ bụ nwunye gị dị?	..... na afo	
15	Kedu ọkwa agụmakwụkwọ kacha elu nke onye òtù ọlụlụ gị gụchara?	Enweghị agụmakwụkwọ nkịtị Agụmakwụkwọ praịmarị Ụlọ akwụkwọ sekọndrị Agụmakwụkwọ mahadum Ndị ọzọ (kọwaa).....	1 2 3 4 5
16	Kedu ọrụ di gị ma ọ bụ nwunye gị?	.....	
17	Kedu ego di gị ma ọ bụ nwunye gị na-enweta kwa ọnwa?	<#18,000 #18,000 - #49,999 #50,000 - #99,999 N'elu #100,000 Ndị ọzọ (kọwaa)	1 2 3 4 5

NKEJI NKE ABỤỌ: NGHỌTA OBODO GBASARA VESICOVAGINAL FISTULA (VVF)

NTUZIAKA: Tinye akara na koodu ndị dabara na nhọrọ azịza gị, nye azịza nye ajụjụ ndị mepere emepe na ebe ọ dị mkpa, tinye akara ma ọ bụ nye ọtụtụ azịza.

Nọmba	**Ajụjụ**	**Nzaghachi**		**Koodu**
1	Ị nụtụla banyere VVF mbụ?	Ee Mba		1 2
2a	Ị maara ihe VVF bụ?	Ee (ọ bụrụ ee za zuo oke ngalaba 2) Mba (ọ bụrụ na ọnweghị ịgafe na ngalaba 3)		1 2
2b	**Jiri nwayọ gosi ee ma ọ bụ mba, ọ bụrụ na ịmara nke ọ bụla n'ime ihe ndị a gbasara ọnọdụ VVF.**			
i.	Mwepu nke mmamịrị na-achịkwaghị achịkwa site na ikpu		EE	MBA
ii.	Mgbapu nke nsị na-achịkwaghị achịkwa site na ikpu		[ ]	[ ]
iii.	Alụmdi na nwunye mbụ/alụmdi na nwunye na-erubeghị afọ nke na-eduga n'ọgbụgbọ ikpu		[ ]	[ ]

iv.	Nkwado nke ndị dọkịta quack n'oge a na-amụ nwa na-ebute nsị nke ikpu	[ ]	[ ]
v.	Nkwado nke TBA n'oge a na-amụ nwa na-ebute ntachi nke ikpu	[ ]	[ ]
vi.	Ịmụta ụlọ na-eduga na ntapu nke ikpu mgbe amuchara nwa	[ ]	[ ]
vii.	Ime afọ iri na ụma na-ebute ntapu nke ikpu	[ ]	[ ]
viii.	Akụkụ Cesarean n'oge a na-amụ nwa nwere ike ibute ntapu nke ikpu	[ ]	[ ]
ix.	Enweghị ọkachamara ANC nwere ike ibute ntapu nke ikpu	[ ]	[ ]
x.	Ịtinye mkpuru osisi n'ime ikpu n'oge ime ime nwere ike ibute ntapu nke ikpu	[ ]	[ ]
xi.	Ihe mberede nwekwara ike ibute ntapu nke ikpu	[ ]	[ ]
xii.	Omume ibi ndụ nwanyị nwere ike ịkpata ntapu site na ikpu	[ ]	[ ]
xiii.	Ndina n'ike n'ike nwa agbọghọ ma ọ bụ nwanyị na-ebute ntanye nke ikpu	[ ]	[ ]

3	Gịnị bụ nkwenye gị maka VVF?	....	
4	Kedu ihe ị chere bụ ihe kpatara VVF?		
5	Ekwesịrị ịta onye ọrịa VVF ụta maka ọnọdụ ya?	Ee Mba	1 2
5b	Ọ bụrụ ee ma ọ bụ mba, biko nye ihe kpatara ya	....	
6	Kedu otu ị chere enwere ike isi gwọọ VVF?		
7	Ebee ka i chere enwere ike ịgwọta VVF? (**A na-ahapụ ọtụtụ nhọrọ**)	Ụlọ ọgwụ izugbe ọgwụgwọ ọdịnala ụlọ ọgwụ nkeonwe ụka/alakụba ọgwụ onwe Ndị ọzọ (kọwaa)	1 2 3 4 5 6
8	Kedu ihe bụ echiche gị na ụzọ kacha mma isi gwọọ VVF?		
9	Kedu ka ịsi ahụ onye ọrịa VVF		

NGALABA NKE ATỌ: ỌGANIHU NKE VESICOVAGINAL FISTULA

NTUZIAKA: Tinye akara na koodu ndị dabara na nhọrọ aziza gị, nye aziza nye ajụjụ ndị mepere emepe na ebe ọ dị mkpa, tinye akara ma ọ bụ nye ọtụtụ aziza.

Nọmba	**Ajụjụ**	**Nzaghachi**	**Koodu**
1	Ị maara maka nwanyị ọ bụla nwere VVF na obodo a?	Ee Mba	1 2
2	Ị nwere mgbe ọ bụla inwe tutara VVF?	Ee (ọ bụrụ ee, mezue ngalaba a) Mba (Ọ bụrụ na ọ bụghị, gaa na ngalaba 4)	1 2

3	Afọ ole ka ịdi mgbe imalitere inwe VVF?	..... na afo	
4	Kedu afọ ime nke ị malitere inwe VVF?	Afo ime mbụ Afọ ime nke abụọ Afo ime nke atọ Afo ime nke anọ Afo ime nke ise Ndị ọzọ (kọwaa)	1 2 3 4 5 6
5	Ogologo oge ole ka ị na-ebi na VVF?	0 – 4 5 – 9 10 – 14 15 – 19 20+	1 2 3 4 5
6	Kedu ihe omume butere gị VVF?	.....	
7	Agwọla gị?	Ee (Zaa ajụjụ 8) Mba	1 2
8	Kedu ụzọ ị si were gwọọ ya?	.....	

NKEJI ANỌ: IHE NDỊ NA-EKPEBI NKE VESICOVAGINAL FISTULA (VVF)

NTUZIAKA: Tinye akara na koodu ndị dabara na nhọrọ azịza gị, nye azịza nye ajụjụ ndị mepere emepe na ebe ọ dị mkpa, tinye akara ma ọ bụ nye ọtụtụ azịza.

Nọmba	**Ajụjụ**	**Nzaghachi**	**Koodu**
1	Olee afọ ole ka ọtụtụ ụmụ nwanyị nọ n'obodo a na-alụ di?	..... na afo	
2	Olee otú e si ekpebi afọ ole a ga-eji lụọ di na nwunye mbụ n'obodo a?		
3	Kedu onye na-ekpebikarị afọ nwata nwanyị n'alụmdi na nwunye mbụ?	Nna Nne Ma nne na nna Ndị ikwu Obodo Ndị ọzọ (kọwaa)	1 2 3 4 5 6
4	Ebee ka ọtụtụ ụmụ nwanyị obodo a na-aga maka ịmụ nwa?	Ụlọ ọgwụ Izugbe nke Gọọmenti Ebe nlekọta ahụike nke Gọọmentị Ụlọ ọgwụ nkeonwe Ụlọ ndị TBA N'ụlọ Ugbo Ndị ọzọ (kọwaa)	1 2 3 4 5 6 7

5	Kedu ihe nwere ike ime maka ịhọrọ ebe a ga-amụ nwa? (**Ekwenyere nhọrọ ọtụtụ**)	Ọnụ ala Ezigbo ọrụ Ika Mma Nso nso Ndị ọzọ tụrụ aro ya Ndị ọzọ (kọwaa)	1 2 3 4 5
6	Kedu ebe ọzọ ụmụ nwanyị nọ n'obodo a na-amụ nwa ha?		
7	Ụmụnwaanyị nọ n'obodo a hà na-achọ nlekọta mgbe ha di ime imu nwa?	Ee Mba	1 2
8	Ọ bụrụ ee, kedụ ụdị nlekọta afọ ime nke ọtụtụ ụmụ nwanyị na-eji n'obodo gị?	Ebe ahụike ọgbara ọhụrụ Ndị nlekọta ọmụmụ omenala Ngwọta ụlọ Ndị ọzọ (kọwaa)	
	Ọ bụrụ mba, biko nye ihe kpatara ya		
9	Kedu onye ga-ekpebi ebe nwanyị ga-amụ nwa ya?	Di Nwunye Di na Nwunye Ndi Ogoo Ndị ikwu Ndị ọzọ (kọwaa)	1 2 3 4 5 6
10	Kedu ụlọ ọrụ ahụike dị na mpaghara gị? (**Ekwenyere nhọrọ ọtụtụ**)	Ụlọ ọrụ ahụike nke mbụ Ụlọ ọgwụ nkeonwe Ụlọ ọgwụ Izugbe Ndị ọzọ (kọwaa)	1 2 3 4
11	Kedu ka akụrụngwa na ogbe ogwugwuo ndị a si dị ọnụ ala?	Ụlọ ọrụ ahụike nke mbụ ..... Ụlọ ọgwụ nkeonwe ..... Ụlọ ọgwụ Izugbe..... Ndị ọzọ (kọwaa)	1 2 3 4
12	Kedu ụzọ ụmụ nwanyị nwere ike isi nweta ụlọ ọrụ ahụike nne?	Ịga njem Ịnyịnya igwe Ụgbọ ala taxi Ndị ọzọ (kọwaa)	1 2 3 4
13	Kedu ogologo oge site n'ụlọ gị ruo ebe nlekọta ahụike?	< Nkeji 30 30 - 1 elekere 1 – 2 elekere >2 elekere	1 2 3 4
14	Obodo gị ọ na-ebi ụmụ nwanyị ugwu?	Ee Mba	1 2
	Ọ bụrụ ee, kedụ ihe ọ pụtara nye obodo gị?		
15	Ò dị onye ọ bụla n'ime ndị ezinụlọ gị ebìworo úgwù?	Ee Mba	1. 2.

	Ọ bụrụ ee, afọ ole ka a na-emekarị ya?	..... na afọ	
16	Kedu ihe omume omenala ị chere nwere ike iduga ụmụ nwanyị na obodo a inwe VVF?		

NKEJI ISE: MMETỤTA AKỤ NA ỤBA MMEKỌRỊTA NKE VVF

NTUZIAKA: Tinye akara na koodu ndị dabara na nhọrọ azịza gị, nye azịza nye ajụjụ ndị mepere emepe na ebe ọ dị mkpa, tinye akara ma ọ bụ nye ọtụtụ azịza.

Nọmba	**Ajụjụ**	**Nzaghachi**	**Koodu**
1	Kedu ihe nwere ike isi na VVF pụta?		
2	Kedu n'ime ihe ndị a ị chere na VVF nwere ike imetụta?	Igụ akwụkwọ Ọrụ akwụ ụgwọ Ịzụ ahịa Ọrụ ugbo Ndị ọzọ (biko kọwaa	1 2 3 4 5
3	Kedu ihe ị na-eche n'ebe onye ọrịa VVF nọ?	Ọmịiko Ọjụjụ Enweghị mmasị Ndị ọzọ (biko kọwaa	1 2 3 4

NTỤZỊAKA ISI IHE ỌMỤMA MAKA NDỊ NA-ENYE AHỤIKE (KII)

1. Na ndabere na ahụmịhe ọrụ gị, kedu ihe ị chere butere vesicovaginal fistula (VVF) na ndị a ometụtara? Biko nye ihe atụ ma ọ bụrụ na ọ dị mkpa. Nyocha maka omume ọha na eze na omenala na ihe gbasara ahụike.
2. Kedu ụdị ọgwụgwọ (uzọ ọgwụgwọ ozo) nke ndị a ometutara n'agabiga tupu ha abịa na ogige VVF?
3. Biko ị nwere ike ị jiri nwayọ gwa m ma ọgwụgwọ uzo ndi ọzọ enwere ometụtala ndị nwere ọnọdụ a ugbu a na uzo di mma ma ọ bụ na uzo adighị mma? Nyocha maka oge ọrịa, ma ọ bụrụ na ọ gbakwunyela ụdị ịma aka ahụike ndị ọzọ.
4. Mgbe ị nọ n'ogige a, ị hụla ndị a ka ha na-achọ uzo ọgwụgwọ ndị ọzọ? (Uka, mgborogwu, na ihe ndị ọzọ).
5. Na ndabere na nleba anya ị nwere ike ịsị na ụmụ nwanyị ndia na-enweta nlekọta na nkwado zuru oke site n'ezinaụlọ, obodo? Nyocha maka mmekọrịta n'etiti dị na nwunye, ezinụlọ na ndị enyi.

NTUZIAKA ỌMỤMỤ IHE (CASE STUDY)

Mgbanwe ọnọdụ ọha mmadụ nke onye nzaghachi

Nọmba	Ajụjụ	Nzaghachi
1	N'afọ ole ka amuru gi	..... na afọ
2	Kedu ọkwa agụmakwụkwọ gị kacha elu iguzuru goro?	.....
3	Okpukpere chi	.....
4	Kedu ọrụ gị	.....
5	Kedu ego ị na-enweta kwa ọnwa?	.....
6	Ọnọdụ alụm di na nwunye	
7	Ụdị ezinụlọ	
8	Afọ ole ka ị dị na oge imu nwa mbụ gị	

1. Afọ ole ka ịdi mgbe ị lụrụ di? Nyochaa ma ọ bụrụ na ọ bụ alụmdi na nwunye na nkwenye ma ọ bụ na-enweghị nkwenye.
2. Olee ebe ikpeazụ ị mụrụ nwa? Nyochaa ihe kpatara ịhọrọ ọmụmụ, na onye na-ekpebi ebe a ga-amụ nwa.
3. Biko kọwapụta ahụmịhe afọ ime gị. Nyochaa maka nleta afọ ime, iri nri, ime mkpebi gbasara mgbe a ga-aga na ebe ulo ahụike.
4. Kedu afọ ole i di mgbe inwetere VVF? Nyochaa maka ogologo oge VVF.
5. Biko ị nwere ike ịkọ ihe omume ndị butere gị ịmalite VVF? - Ka o si malite, ihe ị ghọtara na ọ dịka ya na mmalite, na ahụmahụ gị ugbu a.
6. Jiri obiọma gwa m ebe ndị ị gara maka ọgwụgwọ? Nyochaa maka ebe izizi agara, na ọ bụrụ na enwere mmeghari ihu na azụ na gaba n'ime usoro nlekọta ahụike dị (ụka, ụlọ alakụba, omenala, Ọtọdọks, ndị ọzọ) a gara. Ma ọ bụrụ na onye ometutara ka n'gaa na ulo ogwugwo ndị ọzọ na-abụghị nke VVF.
7. Kedu ihe gwara nhọrọ nleta na ọgwụgwọ gị? Nyocha maka ihe echere kpatara ọrịa, ikike nke ọgwụgwọ, ọnụ ala na ihe ndi ozo.
8. Kedu ka ị ga-esi kwuo na ọnọdụ gị emetụtala mmekọrịta dị n'etiti gị na onye òtù ọlụlụ gị? Nyocha maka ọmịiko, nleghara anya, nkewa, ịgba alụkwaghịm na ihe ndi ozo.
9. Kedu ụdị nlekọta na nkwado ị na-enweta kemgbe ịmalitere inwe VVF. (ego, omume, anụ ahụ, mmetụta uche) site na ezinụlọ, ndị enyi, obodo. Nyochaa maka ọdịiche dị na nlekọta na nkwado mbụ tupu VVF na n'ọnọdụ dị ugbu a.
10. Jiri obiọma kọọrọ m ihe ndị mmadụ kwuru gbasara gị mgbe mbụ imalitere inwe VVF - Nyochaa maka ịkwa iko, amoosu, ntaramahụhụ na ihe ndi ozo.
11. Jiri obiọma gwa m ka VVF siri metụta ọrụ gị kwa ụbọchị - akwụkwọ, ọrụ akwụ ụgwọ, ịzụ ahịa, ọrụ ugbo na ihe ndi ozo.
12. Kedu ka gi na ezinụlọ gị na obodo gị siri enwee mmekọrịta kemgbe ịnwetere VVF? Nyochaa maka mmekọrịta tupu VVF na ụdị mmekọrịta dị ugbu a.

(A ga-edozi ntuziaka a dabere na ndu nke ọmụmụ ihe a).

NDU AJUJU IDI (IDI)

Mgbanwe ọnọdụ ọha mmadụ nke onye nzaghachi

Nọmba	**Ajụjụ**	**Nzaghachi**
1	Afọ ole ka ịdị?	…….. na afọ
2	Kedu ọkwa agụmakwụkwọ gị kachasị elu?	……..
3	Kedu otu okpukperechi ị nọ?	……..
4	Kedu ọrụ ị na-arụ?	……..
5	Kedu ego ị na-enweta kwa ọnwa?	……..
6	Ọnọdụ Alụm di na nwunye	……...
7	Ụdị ezinụlọ	.....
8	Afọ n'oge alụmdi na nwunye	.....
9	Afọ n'oge ọmụmụ mbụ	.....
10	Ọkwa agụmakwụkwọ kacha elu nke di na nwunye	.....
11	Ọrụ di	.....
12	Ego ndị di na nwunye na-enweta kwa ọnwa	.....

1. Afọ ole ka ịdi mgbe ị lụrụ di? Nyochaa ma ọ bụrụ na ọ bụ alụmdi na nwunye na nkwenye ma ọ bụ na-enweghị nkwenye.
2. Olee ebe ikpeazụ ị mụrụ nwa? Nyochaa ihe kpatara ịhọrọ ọmụmụ, na onye na-ekpebi ebe a ga-amụ nwa.
3. Biko kọwapụta ahụmịhe afọ ime gị. Nyochaa maka nleta afọ ime, iri nri, ime mkpebi gbasara mgbe a ga-aga na ebe ulo ahụike.
4. Kedu afọ ole i di mgbe inwetere VVF? Nyochaa ma ọ bụ site n'afo ime ofu nwa ma ọ bụ afo ime karịa out nwa na ogologo oge onye ihe metụtara biri na ọnọdụ a
5. Kedu ihe a na-akpọ ọnọdụ ahụike gị n'obodo gị?
6. Biko jiri nwayọ kọwa otu i siri nweta VVF - ka o si malite, ihe i chere na ọ bụ na mbụ na ihe ndi ozo.
7. Kedu ihe ị chere bụ ihe kpatara ọnọdụ gị ugbu a (nyocha maka ihe ndị ha chere kpatara ya karịa ihe ndị dọkịta gwara ha).
8. Kedu ụdị ọgwụgwọ ị chọrọ mgbe mbụ ị hụrụ nsogbu a? (ụka, Alfa, igwo oria omenaala, ogwu ọgbara ọhụrụ na ihe ndi ozo)? Nyochaa nhọrọ ọgwụgwọ mbụ nke onye zara ajụjụ, nsonaazụ ọgwụgwọ; ma ọ bụrụ na ọ na-akawanye mma ma ọ bụ na-akawanye njọ.
9. Biko ị nwere ike ịgwa m ọnọdụ ndị butere gị na etiti ogige VVF? Nyocha maka ọdịda ọgwụgwọ ndị ọzọ, ndụmọdụ sitere n'aka ndị ọzọ dị ịrịba ama ma ọ bụ nhọrọ onwe onye. Ma ọ bụrụ na ndị ihe a metụtara ka na-anwale nhọrọ ọgwụgwọ ndị ọzọ.
10. Kedu ka ị ga-esi mara ma kowa ụdị nlekọta na nkwado ị na-enweta? Nyocha maka nlekọta na onye nlekọta (ma nke nkịtị na nke na-ezighi ezi), nkwado ego, omume, mmetụta uche ma ọ bụrụ na ha ezuola.

11. Biko kọwaa mmekọrịta gị na ndị ọzọ dị ịrịba ama, obodo, ụka/alakụba. Nyocha maka nnabata, ịjụ, mkparị, agbahapụ na ihe ndi ozo. Nyocha maka mmekọrịta onye na onye òtù ọlụlụ.
12. Kedu ka ị ga-esi mara ma kowa ọnọdụ gị ugbu a? Nyocha maka mmetụta nke ọjụjụ, ịdọrọ n'aka ndị mmadụ na ụzọ ịnagide ya?
13. Kedu ndụmọdụ ị nwere maka igbochi VVF emetụta ụmụ nwanyị ndị ọzọ?
14. Jiri obiọma gwa m ka VVF siri metụta ọrụ gị kwa ụbọchị - akwụkwọ, ọrụ akwụ ụgwọ, ịzụ ahịa, ọrụ ugbo na ihe ndi ozo.
15. Jiri nwayọ kọwaa ihe ịma aka akụ na ụba gị kemgbe mmalite VVF - Nyocha maka nri, ụgwọ ụlọ ọgwụ, mkpa ụbọchị dịka akwa na ngwa ụlọ mposi, na ibu ego di n’ezinụlọ.

APENDIX III

Tambayoyi kan Ciwon Yoyon Fitsari

Sunana Chioma Okwuchi Obioma, ɗaliba a Sashen Nazarin Zamantakewa na Jami'ar Ibadan. Ina yin wannan bincike mai taken: "Dalilan da Kan Jawo Cutar Yoyon Fitsari, Yawaitarta da Kuma Hanyoyin Maganceta a Jihohin Ebonyi da Plateau na Ƙasar Najeriya" don samun digirin digirgir (PhD)

Namba	Tambaya	Amsa	Kod
1	Shekarunki nawa?	Shekara…….	
2	Sunan gari/ƙauye/unguwa	A bayyana	
3	Karamar hukuma	A bayyana	
4	Matakin aure	Ba aure Mai aure Ba'a tare Bazawara (wacca aka saki Bazawara (wadda mijinta ya rasuwa) Daduro	1 2 3 4 5 6
5	Nau'in iyali?	Gidan mai mace guda Gidan mai mace sama da guda	1 2
6	Matakin ilimi?	Ba ilimin zamani Firamari Sakandare Makarantar gaba da sakandare Wani daban (a bayyana.....)	1 2 3 4 5
7	Addini	Kirista Musulmi Marar addini Mai addinin gargajiya Wani daban (a bayyana……..)	
8	Sana'arki?	Mai zaman gida Saye da sayarwa Aikin gwamnati Mai sana'ar hannu Manomi Ɗalibi Wani daban (a bayyana.....)	1 2 3 4 5 6 7
9	Kima (na kuɗi) abinda akan samu a wata	< ₦18,000 ₦18,000 - ₦49.999 ₦50,000 - ₦99.999 Sama da ₦100,000 Others (specify)	1 2 3 4 5
Matan aure (da waɗanda suka taɓa haihuwa) kaɗai			
10	Shekararki nawa lokacin da kika yi aure?	…….	
11	'Ya'ya nawa kike da su?	.....	
12	Shekararki nawa sanda kika yi haihuwar fari?	.....	
13	A ina kika yi haihuwarki ta karshe?	Gida Karamin asibiti Gidan ingozoma Asibitin kuɗi Babban asibiti Wani daban (a bayyana ……..)	1 2 3 4 5

14	Shekarar mijinki nawa?	Shekara.....	
15	Matakin ilimin mijinki?	Kirista Musulmi Marar addini Mai addinin gargajiya Wani daban (a bayyana……..)	1 2 3 4 5
16	Sana'ar mijinki?	……	
17	Kima (na kuɗi) abinda mijinki kan samu a wata	< ₦18,000 ₦18,000 - ₦49.999 ₦50,000 - ₦99.999 Sama da ₦100,000 Wani daban (a bayyana……)	1 2 3 4 5

Sashe Na Biyu: Fahimtar Al'umma Dangane da Cutar Yoyon Fitsari

Umarni: Zaɓi nambar amsar da ta dace da ra'ayinki, bayyana amsarki ga buɗaɗɗun tambayoyi, zaɓi amsa fiye da ɗaya in hakan ya zama dole.

Namba	Tambaya	Amsa	Kod
1	Kin taɓa jin labarin ciwon yoyon fitsari?	E A'a	1 2
2a	Kin san mecece cutar yoyon fitsari?	E (idan an ce e, a gama sashen na biyu) A'a (idan an ce a'a, a tafi sashe na uku)	1 2

2b.	**Da kyau a nuna ko e ko a'a, idan kun san kowane ɗayan waɗannan dangane da yanayin VVF**		
i.	Fitsarar fitsari mara sarrafawa daga farji	EE	A'A
ii.	Fitowar najasa mara tsari daga farji	[ ]	[ ]
iii.	Auren da wuri/Auren kasa da shekaru yana haifar da zubewar farji	[ ]	[ ]
iv.	Taimakon likitocin quack lokacin haihuwa yana haifar da zubewar farji	[ ]	[ ]
v.	Taimakon TBA yayin haihuwa yana haifar da zubewar farji	[ ]	[ ]
vi.	Bayarwa gida yana haifar da zubewar farji bayan haihuwa	[ ]	[ ]
vii.	Ciwon samari yana haifar da zubewar farji	[ ]	[ ]
viii.	Sashen Cesarean a lokacin haihuwa na iya haifar da zub da jini a cikin farji	[ ]	[ ]
ix.	Rashin ƙwararrun ANC na iya haifar da zubewar farji	[ ]	[ ]
x.	Saka ganye a cikin farji yayin daukar ciki na iya haifar da zub da jini a cikin farji	[ ]	[ ]
xi.	Hatsari kuma na iya haifar da zubewar farji	[ ]	[ ]
xii.	Al'adar kaciya na iya haifar da ɗigogi daga farji	[ ]	[ ]
xiii.	Yin fyade ga yarinya ko mace yana haifar da zubewar farji	[ ]	[ ]

3	Menene ra'ayinki kan cutar yoyon fitsari?	…… ……	
4	Shin a tunaninki, waɗanne abubuwane kan jawo cutar yoyon fitsari?		
5	Shin kina ganin me ɗauke da wannan cutar lefinta ne?	E A'a	1 2
5b	In an ce e ko a'a, a bada dalilai	……	
6	Tayaya kike ganin za'a samarwa me cutar waraka/maganin?		
7	A ina kike ganin za'a sami maganin cutar yoyon fitsari? (za'a iya zaɓar amsa fiye da ɗaya)	Babban asibiti Mai maganin gargajiya Asibitin kudî Majami'a/masallaci Magani da kanki Wani daban (a bayyana……..)	1 2 3 4 5 6
8	A tunaninki wacce hanya ce mafi amfani wajen magance cutar yoyon fitsari?		
9	Ya kike ɗaukar me cutar yoyon fitsari?		

Sashe na Uku: Yawaitar Cutar Yoyon Fitsari

Umarni: Zaɓi nambar amsar da ta dace da ra'ayinki, bayyana amsarki ga buɗaɗɗun tambayoyi, zaɓi amsa fiye da ɗaya in hakan ya zama dole.

Namba	Tambaya	Amsa	Kod
1	Shin kin san wata mace dake da cutar yoyon fitsari a wannan yanki?	E A'a	1 2
1	Kin taɓa samun wannan cuta ta yoyon fitsari?	E (in an ce e, a karasa wannan sashe) A'a (in an ce a'a, a tafi sashe na huɗu)	1 2
2	Kina shekara nawa kika sami wannan cutar ta yoyon fitsari?	Shekara.....	
3	A ciki na nawa kika gamu da wannan cutar?	Cikin farko Ciki na biyu Ciki na uku Ciki na huɗu Ciki na biyar	1 2 3 4 5

		Wani daban (a bayyana).....	6
4	Kin kai tsawon wanne lokaci da wannan cutar ta yoyon fitsari?	0-4 5-9 10-14 15-19 20+	1 2 3 4 5
5	Wanne abu ne ya jawo miki wannan cutar ta yoyon fitsari?	.....	
6	An yi miki magani?	E (a amsa tambaya ta 7) A'a	1 2
7	Wacce hanya aka bi wajen nema magani?	.....	

Sashe na Hudu: Abubuwan da ke Jawo Cutar Yoyon Fitsari

Umarni: Zaɓi nambar amsar da ta dace da ra'ayinki, bayyana amsarki ga buɗaɗɗun tambayoyi, zaɓi amsa fiye da ɗaya in hakan ya zama dole.

Namba	Tambaya	Amsa	Kod
1	A shekara nawa mafi yawan matan wannan yanki suke aure?	Shekara…….. s	
2	Tayaya ake yanke shawarar kan a wacce shekara za'a yi aure?		
3	Waye yake yanke hukunci kan shekarar da yakamata a yiwa yarinya aure?	Uba Uwa Uwa da uba 'Yan'uwa Al'umma Wani daban (a bayyana……..)	1 2 3 4 5 6
4	Ina mafi yawan matan wannan yanki kan je don haihuwa?	Babban asibiti na gwamnati Karamin asibitin gawmnati Asibitin kuɗi Gidan ingozoma A gida Gona Wani daban (a bayyana……..)	1 2 3 4 5 6 7
5	Wanne dalili/dalilai ne ya sa/suka sa aka fi haihuwa a wannan ko wurare da	Rangwame/sauƙi Samun kulawa tagari	1 2

	kika ambata? (za'a iya zaɓar amsa fiye da ɗaya)	Ganin dama/kwanciyar rai Kusanci Shawarar wasu Wani daban (a bayyana……)	3 4 5
6	Waɗanne wurare (banda waɗanda aka ambata a baya) mata kan je don haihuwa a wannan yankin?		
7	Shin matan wannan yanki kan je awo in sun sami juna biyu?	E A'a	1 2
8	Idan suna zuwa awon, wanne wurin mafi yawan matan wannan yanki kan je don yin waon?	Cibiyar lafiya ta zamani Gidan ingozoma Yin magani a gida Wani daban (a bayyana……)	
	Idan basa zuwa awon, bamu dalilai da suka sa basa zuwa		
9	Wa yake da hakkin yanke hukancin inda mace zata haihuwa?	Maigida (miji) Mata Mata da miji Surukai 'Yan'uwa Wani daban (a bayyana.....)	1 2 3 4 5 6
10	Wanne irin cibiyar kula da lafiya kuke da ita? **(za'a iya zaɓar amsa fiye da ɗaya)**	Karamin asibiti Asibitin kudi Baban asibiti Wani daban (a bayyana……)	1 2 3 4
11	Shin akan iya biyan kuɗin magani a waɗannan cibiyoyi?	Karamin asibiti Asibitin kudi Baban asibiti Wani daban (a bayyana……)	1 2 3 4
12	Tayaya mata kan je waɗannan cibiyoyi kula da lafiya?	Da ƙafa Babur (acaba) Keke Motar haya Wani daban (a bayyana.....)	1 2 3 4 5
13	Shin kin shafe zawon wanne lokaci daga gida zuwa asibiti/cibiyar kula da lafiya?	Kasa da minti30 Minti 30 - awa 1 Awa 1-2 Sama da awa 2	1 2 3 4
14	Shin akan yiwa mata kaciya a wannan yankin?	E A'a	1 2
	Idan ana yi, menene amfanin yin hakan?		
15	Shin akwai wata mace a gidan nan da aka taɓa yiwa kaciya?	E A'a	1 2
	Idan akwai, tana shekara nawa aka yi mata?	Shekara……	

16	Waɗanne dalilai ne na al'ada ka iya jawo cutar yoyon fitsari a wannan yankin?	

Sashe na Biyar: Illolin Cutar Yoyon Fitsari akan Zamantakewa and Tattalin Arziki

Umarni: Zaɓi nambar amsar da ta dace da ra'ayinki, bayyana amsarki ga buɗaɗɗun tambayoyi, zaɓi amsa fiye da ɗaya in hakan ya zama dole.

Namba	Tambaya	Amsa	Kod
1	Waɗanne illoli cutar yoyon fitsari kan iya jawo?		
2	Waɗanne daga cikin waɗannan cutar yoyon fitsari kan iya shafa?	Makaranta/karatu Aiki Saye da sayarwa Noma Wani da daban (a bayyana....)	1 2 3 4 5
3	Ya kike kallon mai cutar yoyon fitsari?	Tausayinta Guje mata Halin ko in kula Wani daban (a bayyana.....)	1 2 3 4

Jagoran Tattaunawa da Mata (IDI)

Bayanan wadanda za'a yi tattaunawar dasu

Namba	Tambaya	Amsa
1	Shekararki/ka nawa?	……adadin shekaru
2	Menene matakin iliminki?	…….
3	Wanne addini kike/kake yi?	…….
4	Wacce irin sana'a kike/kake yi?	……
5	Nawa kike/kake samu duk wata?	……..
6	Matakin aure	…….
7	Nau'in iyali	……...
8	Shekarunki/ka lokacin da kika/ka yi aure	……..
9	Shekarunki/ka lokacin da kika/ka fara haihuwa	…….
10	Matakin ilimin miji/mata	……
11	Sana'ar miji	……...
12	Abinda abokin zama yake samu duk wata	…….

1. Shekararki nawa lokacin da kika yi aure? Nemi ƙarin bayani kan ko an nemi yardarta kafin auren.
2. A ina kika yi haihuwarki ta karshe? Nemi ƙarin bayani game da dalilanta na zaɓar wurin da ta haihu, da kuma wa yake yanke hukunci kan zaɓan wurin da za'a haihu.
3. Bamu labarin yanayin da kika sami kanki lokacin da kike da juna biyu. Nemi ƙarin bayani game da zuwa awo, cimaka, shawara da zuwa asibiti.
4. Kina shekara nawa kika sami wannan cuta ta yoyon fitsari? Nemi ƙarin bayani game da ko haihuwarta ɗaya ko kuma ta haihu da yawa da tsawon lokacin da ta shafe tana wannan jinya.
5. Ya mutane ke kiran wannan yanayin naki a wannan yankin?
6. Bani labarin yadda kika sami wannan cuta ta yoyon fitsari – yadda ta fara, yadda kika ɗauke ta lokacin da kika fara.
7. Waɗanne dalilai ne suka jawo miki wannan yanayin da kika samu kanki? Nemi ƙarin bayani game da ko akwai wasu dalilai daban da waɗanda likitoci kan fada.
8. Wanne irin kulawa kika nema lokcin da fara gano ki na da wannan matsala? (Majami'a, malami, mai maganin gargajiya, maganin zamani). Nemi ƙarin bayani

game da dalilan mai amsa tambaya na zaɓen wurin kulawa da ta fara zuwa, sakamakon zaɓin, ko ansami lafiya ko kuma akasin haka.

9. Shin za ki iya bayyana min dalilin da ya kawo ki wannan cibiya? Nemi ƙarin bayani game da ko gazawar kulawar da aka fara nema ce, ko shawara daga ‘yan’uwa ko zaɓinta ne. Kuma a nemi karin bayyani ko har yanzu tana neman wani maganin.
10. Shin ya kike ganin ingancin kulawa da taimako da kike samu? Nemi ƙarin bayani game da kulawa and masu kulawa (na gida da kuma ma’aikatan jinya) kan bayar, ko akan sami tallafin kuɗi, addu’a, karfafa gwiwa isashshe.
11. Bayyana min yanayin dangantakarki da ‘yan’uwa, al’umma, abokan huɗɗa a majami’a da masallaci. Nemi ƙarin bayani game da ko ana yarda da ita, ko ana kyamarta, ko tsangwamarta, ko ana gudunta. Nemi ƙarin bayani game da alaƙarta da mijinta.
12. Ya kike ganin yanayin da kike yanzu? Nemi ƙarin bayani kan ko ana kyamarta, ko ta ja baya daga jama’a da kuma hanyoyin da suke bi dan rage raɗaɗin wannan yanayin.
13. Waɗanne irin shawarwari zaki iya bayar don kare sauran mata daga kamuwa samun wannan cuta ta yoyon fitsari?
14. Bayyana min yadda wannan cuta ta yoyon fitsari ta shafi al’amuranki na yau da kullum – makaranta, aiki, saye da sayarwa, noma da sauransu.
15. Bayyana min ƙalubale da kika samu tun lokacin da kika gamu da wannan cuta. Nemi ƙarin bayani game da ƙalubalen da take fuskanta wajen samun abinci, biyan kuɗin magani da sauran buƙatu nay au da kullum kamar sutura, banɗaki da ɗaukar nauyin iyali.

Jagoran Tattaunawa da Ma'aikantan Lafiya/Kwararru

1. Duba da gogewarka/ki ta aiki, waɗanne abubuwa ne sukan jawowa waɗannan marasa lafiya cutar yoyon fitsari? A bada misali idan da buƙatar hakan. Nemi ƙarin bayani game da dalilan da ke da alaƙa da al'ada ko zamantakewa da kuma dalilan mahangar kiwon lafiya.
2. Waɗanne irin magunguna/kulawa masu cutar sukan nema kafin zuwa wannan cibiya ta kula da masu yoyon fitsari?
3. Ko kana/kina ganin magungunan da masu wannan cuta kan nema kafin zuwa wannan cibiya suna da tasiri wajen inganta ko kuma lalata/ta'azzara yanayin da suka sami kansu? Nemi ƙarin bayani kan tsawon lokacin da suka shafe suna ciwon, shin hakan ya jawo musu ƙarin matsaloli?
4. Shin ka/kin lura ko masu ciwon (majinyatan) sun cigaba da neman kulawa/magunguna daga wasu hanyoyin bayan da suka zo wannan cibiya? Nemi ƙarin bayani game da neman magani daga majami'a (coci) ko maganin gargajiya.
5. Shin ka/kin lura ko matan kan sami isasshiyar kulawa daga 'yan'uwa da kuma al'umma? Nemi ƙarin bayani game da dangantaka tsakanin ma'aurata, 'yan'uwa da abokan arziƙi.

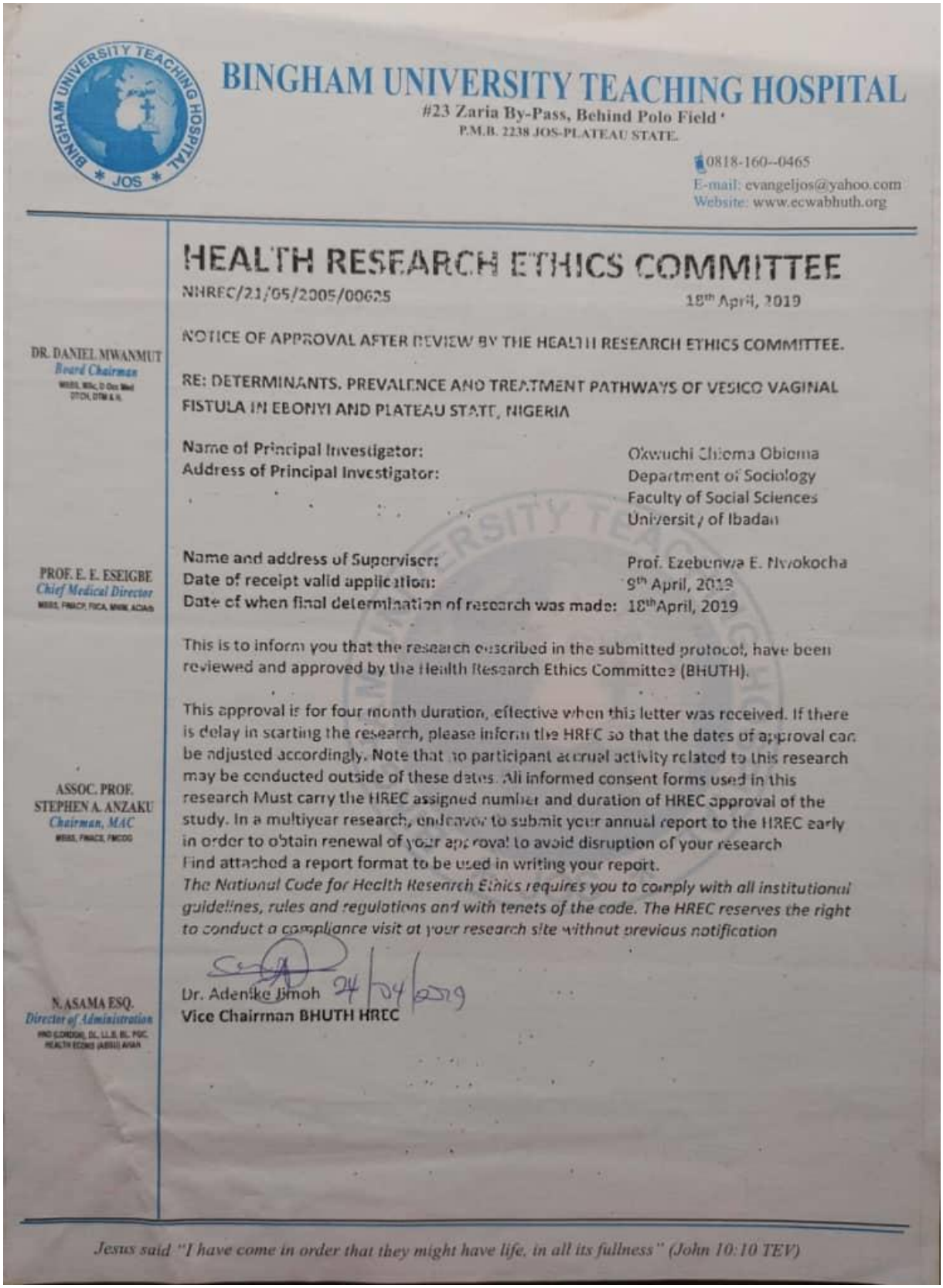
Jagoran Tattaunawa da Wasu Zaɓaɓɓun Mata Masu Cutar Yoyon Fitsari
Bayanan wadanda za'a yi tattaunawar da shi

Namba	Tambaya	Amsa
1	Wacce shakara aka haife ki?	Shekara…….
2	Menene matakin iliminki?	……
3	Addininki	……
4	Wacce irin sana'a kike yi?	…… …….
5	Nawa kike samu duk wata?	…… …….
6	Matakin aure	
7	Nau'in iyali	
8	Shekarunki nawa lokacin da kika fara haihuwa?	

16. Shekararki nawa lokacin da kika yi aure? Nemi ƙarin bayani kan ko an nemi yardarta kafin auren.
17. A ina kika yi haihuwarki ta karshe? Nemi ƙarin bayani game da dalilanta na zaɓar wurin da ta haihu, da kuma wa yake yanke hukunci kan zaɓan wurin da za'a haihuwa.
18. Bamu labarin yanayin da kika sami kanki lokacin da kike da juna biyu. Nemi ƙarin bayani game da zuwa awo, cimaka da shawara kan zuwa asibiti.
19. Kina shekara nawa kika sami wannan cuta ta yoyon fitsari? Nemi ƙarin bayani game da tsawon lokacin da ta shafe tana fama da wannan cuta.
20. Shin zaki iya bayyana min abubuwan da suka jawo miki wannan cutar ta yoyon fitsari? Nemi ƙarin bayani game da yadda cutar ta fara, tunaninta a farkon cutar, da yanayin da take yanzu.
21. Shin zaki iya fada min wuraren da kika je don neman magani? Nemi ƙarin bayani game da wurin da ta fara zuwa, idan ta je wurare daban-daban (kamar majami'a, masallaci, maganin gargajiya da na zamani. Kuma idan marar lafiyar har yanzu tana zuwa wani wuri neman magani ba cibiyar kula da masu yoyon fitsari ba, a nemi ƙarin bayani.
22. Shin me ya ja hankalinki game da zaɓar wurin neman magani? Nemi ƙarin bayani game da tunaninta kan abinda ya jawo cutar, kwarewar masu bada kulawa, sauƙin kudin magani da kulawa, da sauransu.

23. Shin ta yaya yanayin naki ya shafi alaƙarki da maigidanki/mijinki? Nemi ƙarin bayani game da ko ya tausaya mata, ko ya guje ta, ko sun rabu, ko ya sake ta, da suaransu.
24. Wanne irin kulawa da taimako kika samu tun lokacin da kika gamu da wannan cutar? (Tallafin kuɗi, addu'a, taya aiki, karfafa gwiwa) - daga 'yan'uwa, abokai, al'umma. Nemi ƙarin bayani game da bambamcin kulawa da taimako da ta samu kafin samun cutar da kuma yanzu.
25. Bani labarin abinda mutane suka ce akan ki lokacin da kika fara gamuwa da wannan cuta. Nemi ƙarin bayani ko an kira ta mazinaciya, mayya, da suaransu.
26. Bayyana min yadda wannan cutar ta shafi al'amuranki na yau da kullum – makaranta, aiki, saye da sayarwa, noma, da suarnsu.
27. Yaya mu'amullarki/dangantakarki da 'yan'uwa da sauran al'umma ta kasance tun lokacin da kika sami wannan cutar? Nemi ƙarin bayani game da yadda dangantakar take kafin da kuma bayan an sami wannan cutar (Za'a iya gyara a wannan jaogora bisa yadda tattaunawar ta kasance).

APPENDIX IV



BINGHAM UNIVERSITY TEACHING HOSPITAL
#23 Zaria By-Pass, Behind Polo Field
P.M.B. 2238 JOS-PLATEAU STATE.
0818-160--0465
E-mail: evangeljos@yahoo.com
Website: www.ecwabhuth.org

DR. DANIEL MWANMUT
Board Chairman

PROF. E. E. ESEIGBE
Chief Medical Director

ASSOC. PROF. STEPHEN A. ANZAKU
Chairman, MAC

N. ASAMA ESQ.
Director of Administration

HEALTH RESEARCH ETHICS COMMITTEE

NHREC/21/05/2005/00625 18th April, 2019

NOTICE OF APPROVAL AFTER REVIEW BY THE HEALTH RESEARCH ETHICS COMMITTEE.

RE: DETERMINANTS. PREVALENCE AND TREATMENT PATHWAYS OF VESICO VAGINAL FISTULA IN EBONYI AND PLATEAU STATE, NIGERIA

Name of Principal Investigator: Okwuchi Chioma Obioma
Address of Principal Investigator: Department of Sociology
Faculty of Social Sciences
University of Ibadan

Name and address of Supervisor: Prof. Ezebunwa E. Nwokocha
Date of receipt valid application: 9th April, 2019
Date of when final determination of research was made: 18th April, 2019

This is to inform you that the research described in the submitted protocol, have been reviewed and approved by the Health Research Ethics Committee (BHUTH).

This approval is for four month duration, effective when this letter was received. If there is delay in starting the research, please inform the HREC so that the dates of approval can be adjusted accordingly. Note that no participant accrual activity related to this research may be conducted outside of these dates. All informed consent forms used in this research Must carry the HREC assigned number and duration of HREC approval of the study. In a multiyear research, endeavor to submit your annual report to the HREC early in order to obtain renewal of your approval to avoid disruption of your research
Find attached a report format to be used in writing your report.
The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with tenets of the code. The HREC reserves the right to conduct a compliance visit at your research site without previous notification

Dr. Adenike Jimoh 24/04/2019
Vice Chairman BHUTH HREC

Jesus said "I have come in order that they might have life, in all its fullness" (John 10:10 TEV)

APPENDIX V

ASSOC. PROF. JOHNSON AKUMA OBUNA
(MBBS, FWACS, FICS, CART, CFIS, POD THED, DIP MGT.)
Medical Director
Oko Anthony Ogbonnia (B.Sc. ACIA, AHAN)
Head, Administration/Secretary of Board

NOFIC
NATIONAL OBSTETRIC FISTULA CENTRE
P.M.B. 016, Abakaliki, Ebonyi State. E-mail: nationalobstetricfistulacentre@yahoo.com-
website: www.nofic.org.ng Tel: 08136533679

Dr. Daniyan, Babafemi Charles
(MBBS, FWACS, FMCOG)
Head, Clinical Services

6th January, 2020

Our Ref: NOFIC/E&RM/87/VOL.1/40

Okwuchi Chioma Obioma
Department of Sociology
Faculty of Social Sciences,
University of Ibadan.

ETHICAL APPROVAL

Your application on the above refers.

2. I am directed to inform you that the Research and Ethics Committee on 25th October, 2019 considered your research proposal: **"Socio-Cultural Determinants And Management Pathways for Obstetrics Fistula In Two Treatment Centres In Nigeria"** and has granted you ethical approval to carry out the study in the Centre.

3. On completion of the work, you are to submit a copy of the study to the Committee.

4. You are required to obtain a written approval/authorization from the Management of National Obstetric Fistula Centre before publishing the article in any journal.

Congratulation!

Egwu, Flora (Mrs) FCIA, FCIDA, ACIA
Secretary
For: Chairman

National Reference Centre for Free Treatment, Training, Rehabilitation, Research and Prevention
...restoring the dignity of woman!